Garden (Formerly Steam) Railway Blogg Started 21st September 2019.

Sunday 23rd October 2022

Today was spent re-fitting the various bit sI had previously removed from Stella to gain access to bits I was working on. This included a panel that fits in front of the smoke box, the front buffer beam and a pair of front buffers that came were left over from the Hudswell. At the back I replaced the LH cab bodywork but modified the way it was fitted to make subsequent removal easier. Next task will be to run the loco on air but with the water tank full so I can check the operation of the axle pump. But that will be a job for another day so she is back on her trolley for now.

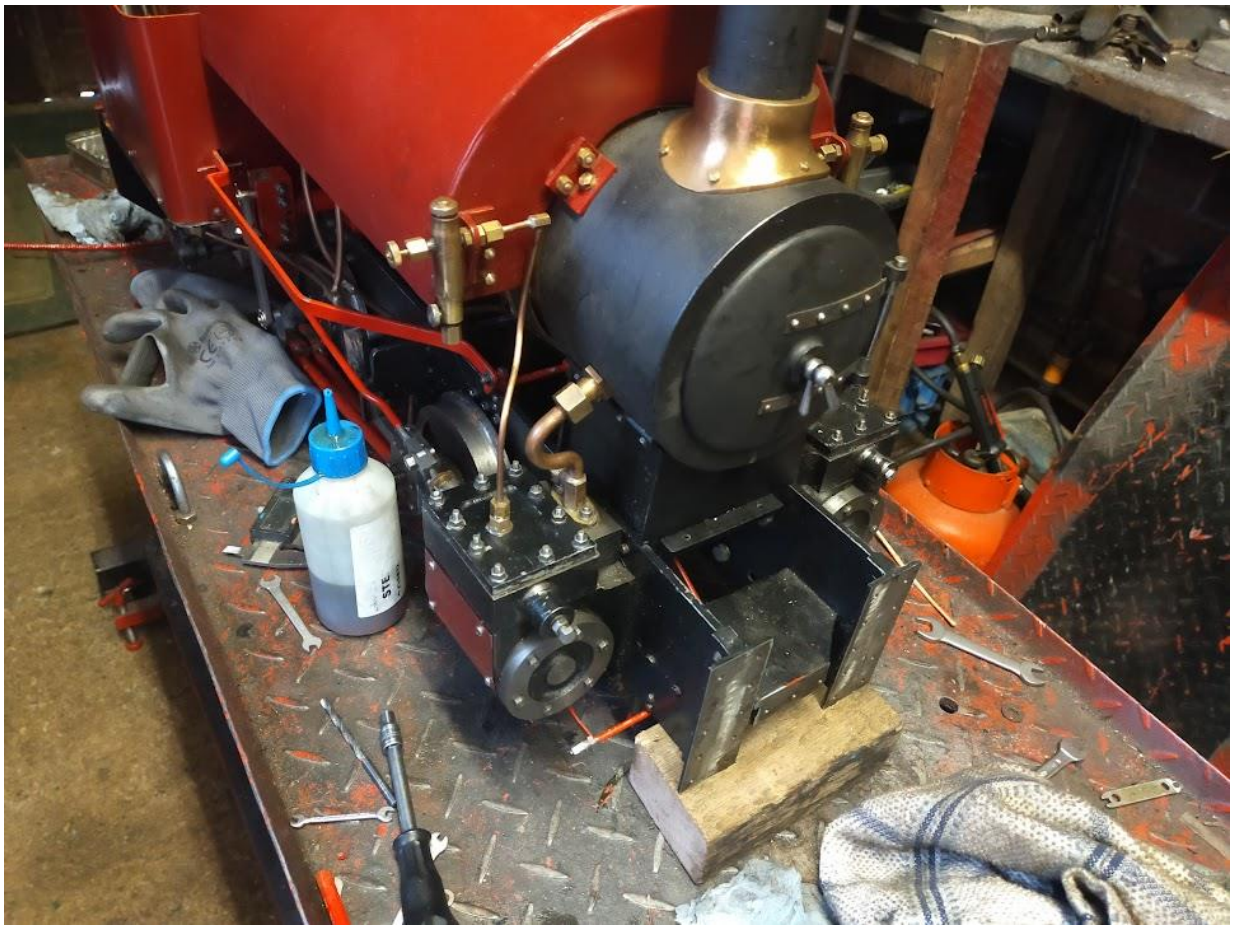
I mentioned some while ago that John H had given me an Anne of Holland rolling chassis and a boiler. I decided it was time to get it out for closer examination. It is quite dirty from long time storage and there is a little corrosion but not on any of the important working pats. I made up an adapter and connect the air-line and it ran immediately unlike certain other locos I could mention. This enthused firstly to examine the boiler and secondly to go through the wealth of paperwork that John also gave me. The latter was first sorted into three piles; the plans for Anne of Holland itself, the plans for the Boiler which are from a model called 'Butch' and everything else which mostly consists of books and photographs that John thinks will provide inspiration for designing the locos bodywork; not really sure yet why no doubt I will find out eventually. One useful thing I did find was a hydraulic test certificate for the boiler ; well out of date but gives confidence that it is sound.

The AofH plans were sorted into two piles, those I no longer need because the work is already done and those that will not apply because I have a different boiler. These have been put to one side, the remainder are kept out for futher study. The Butch plans were a bit more complicated as they were photocopies on A3 sheets of much larger documents. Eventually I figured out that there were four A3 sheets for each page of the original plans. These have now been stuck together as a single large sheet. Really the only Butch sheets I need are those covering the fitting out of the boiler, particularly the boiler.

I have found that GLR Kennions still provide support for the Butch design and list some of the castings needed for the Smoke box and superheaters which will be helpful. So far I have not identified and supplier for specific parts for the AofH design but I can certainly start asking around. Nor is there a bible on building one such as exists for the Sweet Pea design. So not really sure where to start. The sensible idea is to compile a list of the parts I don't have and then come up with a priority order. My guess is the boiler will be top of the list because it dictates where most of the remaining components will fit. The Axle pump will also be a priority item as well.

Saturday 22nd October 2022

Today I made up the brass fittings to link the displacement oilers to the top of the steam chest and connected them up. The picture probably says it all.



I had never tried to use these displacement oilers before or even studied them very closely. When I tried to fill them it was very hard to get the oil in as the hole is very small and even with the bottonm drain screw done up tight, oil was leaking from the bottom. For the moment I have put a cap on the drain outlet whilst pending some research on the design which I think comes from JB's book on the Sweet Pea.

Friday 21st October 2022

Quite a lot of progress and some hiccups since the last post so what follows is not chronological. John H kindly sent me a proper hone. A perfectionist would undoubtedly remove the cylinders, bore them to get rid of all the corrosion marks and make oversize pistons to suit. But as is probably very obvious by now I am not a perfectionist so I have just honed both bores to an acceptable level of smoothness. My intention to fit new cast iron piston rings turned into a farce. When I presented myself at the Blackstones stand last Thursday, they could not find any record of my order and though they had stocks of ings with them none were the correct size. I enjoyed the show and did buy a few other useful things but this was a big disappointment. Back home and talking this over with SimonB when he came, he confirmed that the material in my pistons was graphited string which you can buy quite cheaply and is generally considered a good material for use in steam engine pistons. So I ordered a metre of the stuff for the princely sum of £4.35 delivered. I also found on the internet a source of piston rings on a Chinese site. They were the correct diameter though too narrow but it seemed possible I could fit more than one ring in the piston grooves. Long story short, I have a several sets of these rings on order due for delivery early November – total cost under £10 so not a disaster if they don't work. Then today Blackgates phoned up to say they had found my packet of rings when they got back home and were

putting unsold stock back on the shelves – they are sending them on so I will now have 3 choices for ringing the pistons!.

Too late because the graphite string arrived on Wednesday and I have already fitted it and replaced the pistons. Tricky job as it stands proud (essential to achieve compression) so you have to squash it down a bit to get the assembly into the cylinder. I managed it in the end and it was noticeable how much firmer the fit was compared to the old rings. Fingers crossed this will actually work though JH told me later than I should have soaked the string in hot oil before fitting so it may not last long anyway.

I learnt another lesson doing this job. The piston rod screws into the crosshead and I simply screwed both all the way. I had not thought to check this when I dismantled and to my dismay the loco locked up when I tried moving it. My first thought was that the graphite string had come out of the grooves and was jamming things but in fact it was LH piston hitting the end cover at back dead centre. It was easy enough to adjust to stop the lockup but then I had to figure out a way to ensure that the gap was equal at each end without removing the back cover. I managed it and I'll describe the process some other time. Whilst waiting for bits too arrive I had made new gaskets and I modified the top covers of the steam chests by enlarging the tapped holes from 4mm to 6mm. I drilled these holes originally to allow me to squirt oil directly onto the valves at startup just in case the oil pump was not primed. Originally Stella came with two displacement oilers which I had removed in favour of a mechanical pump. I have now decided to adopt a belts & braces approach and refit the displacement oilers but the steam pipe connection they used is now occupied so I am going to plumb them into the top of the steam chest – hence enlarging the hole to 6mm. I still have to make the connection to link the oiler pipe to the steam chest so for the moment a blanking plug is fitted.

Today I reassembled the cylinders and fired up the compressor to see if the loco would now run. Bingo, the loco now runs quite nicely on air both forward and in reverse (better in reverse actually) and will notch down one groove as well though not two. Pretty happy with that result. Now will it run on steam and will able able to keep the fire burning to maintain steam pressure.

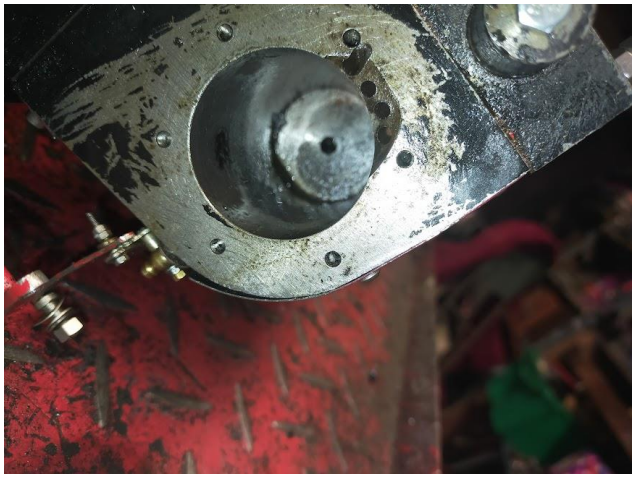
One other thing that has just occurred as I write this update. I should be able to fill the water tank and see if the mechanical pump is working, something I have never managed to do as yet. Always something to do!

Thursday 6th October 2022

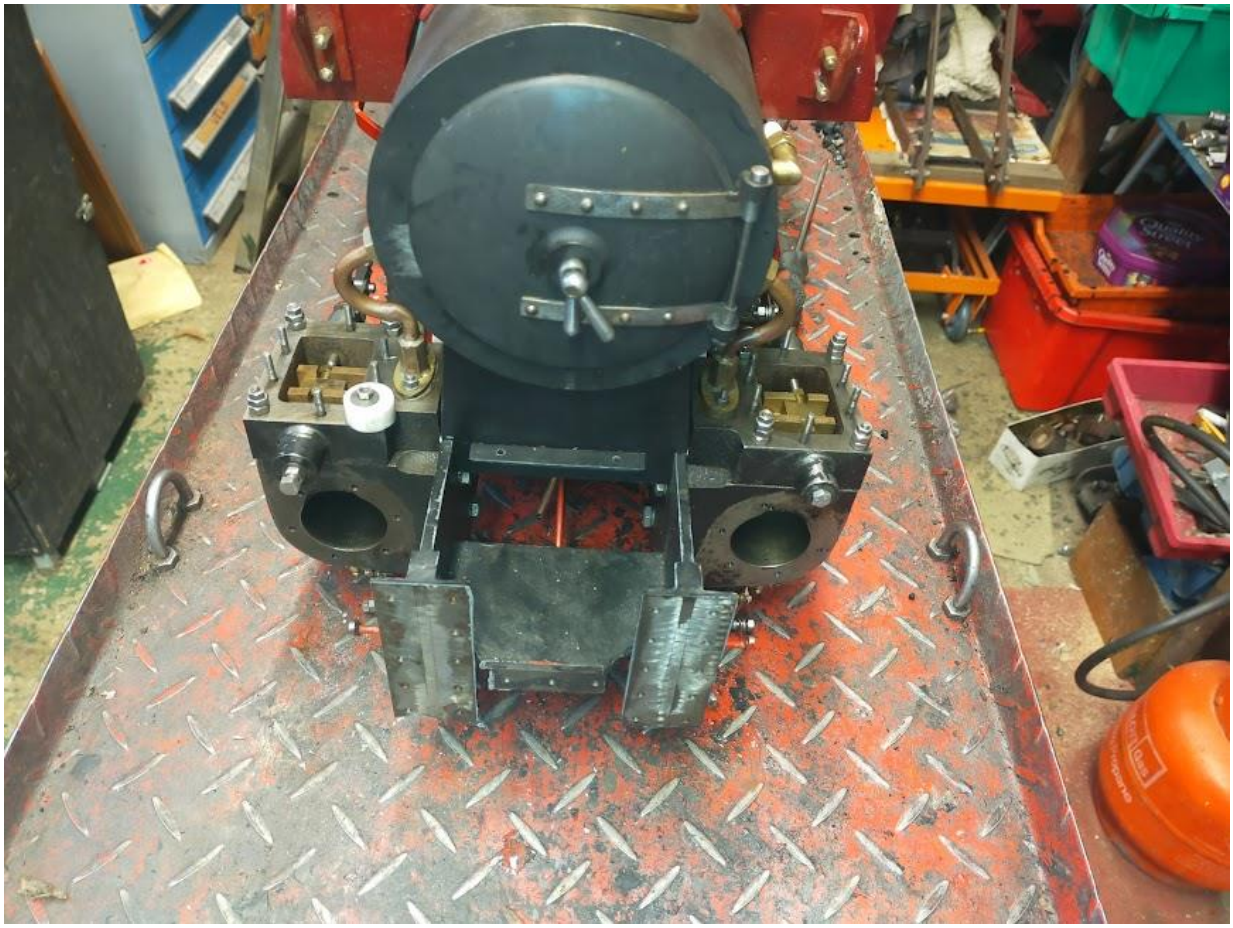
Stella has sat on her trolley gathering dust since July as other activities took priority. Earlier this week I had another go at firing the boiler and the results were not encouraging sadly. It took ages to get a decent firing burning and the pressure up to anywhere near 80psi. I am beginning to think that my coal may be part of the problem but that was not todays major issue. Though nothing has changed regarding setup the engine simply would not run. There were no obvious leaks from any of the pipework, which was encouraging, but putting it in gear and opening the regulator just resulted in water pouring out of the drain cocks and lots of very wet steam exiting the chimney. The same result if I tried reverse gear.

My thought was that the water level was too high as it was near the top of the gauge so I left the regulator open and gradually the flow of water turned more to steam though still very wet. This of course dropped the boiler pressure to below 40psi. It took ages to get it back up to near 80psi but still no joy – even tried turning the wheels to see if that would encourage motion. Lots of steam out of the chimney and out of the drain cocks but that was all. Eventually I gave up, dropped the firebox and let everything cool down.

Pondering on it afterwards I wondered if the lack of movement was due to worn piston rings and the steam was simply leaking past them into the exhaust port. So I decided it was time to look more closely at the condition of the cylinders and the valves. Actually getting the pistons out is not difficult. You simply remove the front cover of the cylinder then unscrew it from the crosshead. It then pulls out of the front. The picture below shows the piston which is in good condition but the rings are made of something quite soft and seemingly woven. It is not stretchy and came apart when I removed one. They are clearly not doing anything to maintain compression as they are worn to the same size as the actual piston. They might be ok in a bore that was smooth and polished but both mine were quite rusty and will need honing before replacing with cast iron rings



The next picture shows the bores after some cleaning with a rotary wire brush. I have a hone coming from a friend and the rings will be collected from the Blackgates Engineering stand at the Midlands Model Engineering exhibition which I am attending on Thursday 13th October with some WWSME friends. I also had to remove the front buffer beam to allow access to the bores for honing - tedious job. However, it did give me better access to the drain cocks and operating levers and I have made some improvements which should make them reliable in use for the future.



You will notice that I have also removed the covers from both valve chests to allow a deeper investigation into the condition of the valve gear and its settings. I spent a lot of time reading up on the design and setup of Hackworth valve gear and I think I finally understand how it operates and more importantly how to set it up. As I have previously had the engine running on air and to a limited extent on steam (see video on 1st July) it would suggest that the valve gear is correct or at least somewhere close. My investigations so far suggest that for the RH cylinder this is substantially correct and pushing the loco along in forward gear the ports open and close fully and at pretty much the correct time both forward and in reverse. What was not correct was height of the valve block in the valve guide. This should have been in the centre such that with the piston at tdc centre (at either end) moving the 'gear' lever to forward or reverse does not move the valve at all. Discussions with Simon Bowditch suggested that this was a weakness in the Steam Pea design as the suspension movement affects the timing. He was correct as adjusting the ride height did solve the problem at the expense of ride comfort as there is now little movement on the suspension.

The LH valve setting was even more of a challenge. In this case, even with the 'gear lever' in maximum forward position the valve barely opened at one end and only a little more at the other. I adjusted the valve to equalise the opening but frankly without further attention this engine is going to be doing little work. Curiously the ports open fully if reverse gear is selected. What was noticeable was the amount of slop in the mechanism. It was possible by pushing and pulling to get the ports open further, not fully but enough to get some power out of this cylinder. There only a little movement at each joint but cumulatively quite a lot. This needs to be rectified but I am reluctant to strip the loco further until it has been checked over by Simon Bowditch who is something of an expert of Hackworth valve gear and particularly its application on the Sweet Pea. He was due to visit yesterday but unfortunately I went down with Covid on Tuesday so no visitors for a week or so. He may well spot other things I have missed.

Friday 1st July 2022

Another long gap as steam railway work has largely consisted on helping out with maintenance at the club (mostly cutting the grass) and on the low level track project which is in its final stages. With luck it will be in use by the end of this year. It is of course summer and biking activities have priority at this time of year.

Some recent progress though. I resolved the problem with Stella's blower by coupling a 12v and 6v battery in series to run it on 18v. This seems to have worked as today it ran for the whole afternoon in that format. My repair to the drain cocks was less successful. They are now clear but there is insufficient movement on the operating lever to close them. I partially dismantled them and was able to operate each one by hand – something that will have to be sorted later.

Reluctantly, despite the much improved blower, I did get the boiler up to 80psi and was able to adjust the safety valves and most of the steam leaks now seem to be sorted. Initially I could not get the loco to run, lots of steam escaping from the area of the cylinders but no movement. After some jiggling around it eventually ran as you can see in the video loaded by clicking on the picture below.

Though a giant step forward, it is still far from being sorted. Getting it to start is still problematic and requires full boiler pressure and full regulator to get things moving. Once running you can back of the regulator to a sensible slower speed as you can see in the video and you can back off he forward/reverse lever one notch as well. It will then run quite happily down to about 40psi but not restart until back up to 80psi. However, getting it to run in reverse is even more problematic. This is getting out of my comfort zone so time to consult the experts – if I can find any.

Keeping the fire burning well enough to maintain boiler pressure was also difficult. It seemed to die very quickly. I was able to resurrect it a few times by refitting the external blower as using the loco's steam blower appeared to have little effect other than to drop the pressure even further. Learning

curve stuff again and I might not have chosen the best coal. Eventually the fire suddenly died so I stopped running rather than start all over again. I had to hand pump water from time to time so it looks as though the axle pump is not working, something I was always suspicious of. Long term the plan is to fit an injector so not a priority to resolve and it may simply be I had the bypass valve set incorrectly.

So all in all a satisfactory result and an encouragement to continue. I need to check, but I don't think any of the identified problems preclude a steam test which is largely concerned with the safety of the boiler rather than how well the loco actually runs. Once I have a full boiler test certificate I can try it out on the club track which will undoubtedly throw up other problems. All part of the fun.

Wednesday 25th May 2022

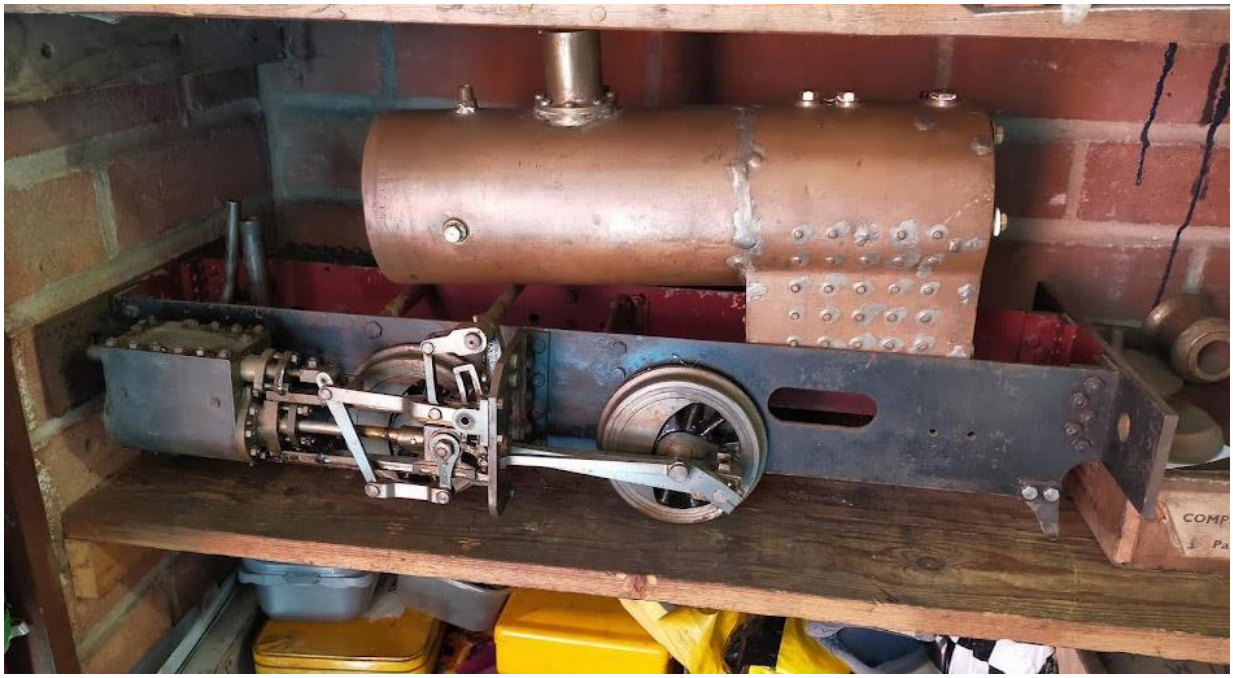
Long time since I updated this blogg so some catching up to do. At the end of April my friend John Hill from Exeter came to stay for a couple of days. The first time that has been possible for nearly 2 years mainly due to Covid but also because Mrs F had not been well enough to cope with visitors. During his visit we attempted to steam Stella the Sweet Pea loco. Not entirely successful as might be expected from a first attempt though nothing disastrous. Getting it up to pressure was hindered by a very slow electric blower. One that came with Stella but not previously tried. Eventually we got it to 80psi but could not get the motion to work properly. Steam was leaking from the RH cylinder intake so effectively it was only running on one side and locos don't work that way. Neither could we get the drain cocks to work which did not help. The steaming was abandoned and when it had cooled down we investigated the leaky intake. This was a very fiddly job due to the design of the oiler intakes which partially obscure the intake fixing screws. Main problem was a blown gasket probably caused by the fixing screws not being tight enough. The remaining jobs were left for another day.

I finally got round to investigating the drain cock problem a couple of weeks ago. The problems were two-fold. The drain cocks themselves are really a bit small for the size of cylinder and the holes in the tap did not fully align with the holes in the body. They are tiny things so great care was needed but I did eventually succeed in enlarging the holes and aligning the tap & body on all four units. The next problem was getting them aligned symmetrically in the cylinders which necessitated making thing washers. Final stage was getting the operating mechanism set up so that all four valves opned and closed together. This was the fiddliest bit as there is no adjustment mechanism and each part has to be made separately to exact size. I finally finished that job yesterday. Not convicned that the mechanism fully closes the drain cocks but at least it fully open them al at the same time. We shall see when I next attempt to steam the loco.

That brings me to the cylinder covers, another saga in its own right. I had overlooked that existing design required the drain cock operating mechanism to be removed before the cover can be refitted. Having spent such a long time getting this working I was not about to remove it all again. Eventually I found that if I removed a small section of the bottom of each cover (not visible except from underneath) I could wiggle them into place. Next issue was fixing them. The screws I removed were something like 8BA but vey short – under 1/8" long. Furthermore I had no spanners that would fit the heads. I do have a couple of sets of BA spanners but nothing would fit them and getting the started was driving me crazy. In the end I drilled and tapped all the holes to 3mm as I had plenty of set screws if the correct length in that size.

What a marathon but one good thing, while the covers were off, I painted them to match the rest of the loco as they looked very dram in mat black. I think I am all steam loco'd out for this month so Stella is back on her trolley and will not be steamed again until I have sorted out the electric blower.

Once pleasant surprise (I think) during Johns visit is shown below:



This is the rolling chassis for a model called Anne of Holland; it also came with the boiler shown and all the plans. They are items John bought long ago but at the age of 87 he came to the conclusion he was never going to finish it as it's a long way down his list of projects. Unknown to me he had kindly left it to me in his will but decided that I should have it now before I got too old to finish it as well! For the moment it is sitting on a shelf in the workshop, goodness knows when I will get round to it but a very nice present for which I am very grateful. I'll give some more info on the loco later.

Tuesday 8th March 2022

Been busy with my motorcycles so no progress with the Sweet Pea tender. However, I did acquire a box of assorted wagons for the 16mm track recently. All a bit sad and most needing some form of repair. They are now fixed and ready to test as can be seen in the photos.

Tuesday 22nd February 2022

The majority tender has now been reassembled and looks pretty good. The top cover now has a filler as can been seen in the pictures. This needs further work to provide access to a hand pump should I decide to relocate it to the tender and security bar to hold the filler cap in place on bumpy tracks. Work on this project on hold for moment while I decide on the plumbing and because I need to get a couple of the bikes ready for display at the Bristol Bike Show this weekend.

Sunday 20th February 2022

The chassis paintwork was dry enough for me to reassemble it this morning and I then painted the front f the buffers beams red as well as the centre of the wheels. I still need paint to finish the tender body which hopefully I can get tomorrow. The spray can that came with it is from Halfords and marked as VW Gambia Red. Hopes of getting another can from that source diminished when I found it was a colour not used since 1984 so goodness knows how long the PO has had this paint lying around. However, I do have the paint code so I am hoping that Rainbow Paints in Westbury can mix me up a spray can close enough. The only thing not painted is the top of the tender body. I still need to cut the hole for filler tube and decide about installing a hand pump which will also require a hole. Looking at the picture, I can see I missed a bit on the axle.

Saturday 19th February 2022

Now onto the bit I dislike the most, prepping and painting. The whole chassis is now in bits so it can be properly cleaned up and some parts have now received a coat of primer. The sole plate has been primed and painted black – but only round the edges as most of it is under the tender body. The body has been cleaned, primed and given a first coat of some maroon spray paint I found in stock. Its not quite the right shade but close enough to provide an undercoat for the final top coat. The PO left the empty can of the paint used for the rest of the body (a Volkswagen shade of red) so I should be able to get a can of this in due course. Beginning to look quite good.

Tuesday 15th February 2022

Busy day as I had a couple of visitors so didn't get started on the tender body until mid- afternoon. It is now glued and screwed together as can be seen in the pictures. The sole plate is not fully attached for

now as it will be painted black whilst the main body will be painted maroon to match the locomotive. When the sealant has hardened a little, I will give it a good clean ready for the primer coat.

Monday 14th February 2022

The last of the fabrication for the basic shell, mainly drilling the remaining holes and radiusing the corners is now completed. Tonight I started assembling the components with the sealant in place. Nor a difficult job but very messy and slow. I also realised part way through that I did not order enough 3mm screws and I may well not have enough s/s nuts. I can probably overcome the shortage of screws

as I do have some longer ones that could be used in extremis. I also have a bag of ordinary steel 3mm nuts which I guess I could use for now and replace them later. There is an a/j at Shepton Mallett next Saturday which I plan to attend. Usually there is a stall selling s/s ietms so with luck I will get some. Failing that it's back onto eBay.

Friday 11th February 2022

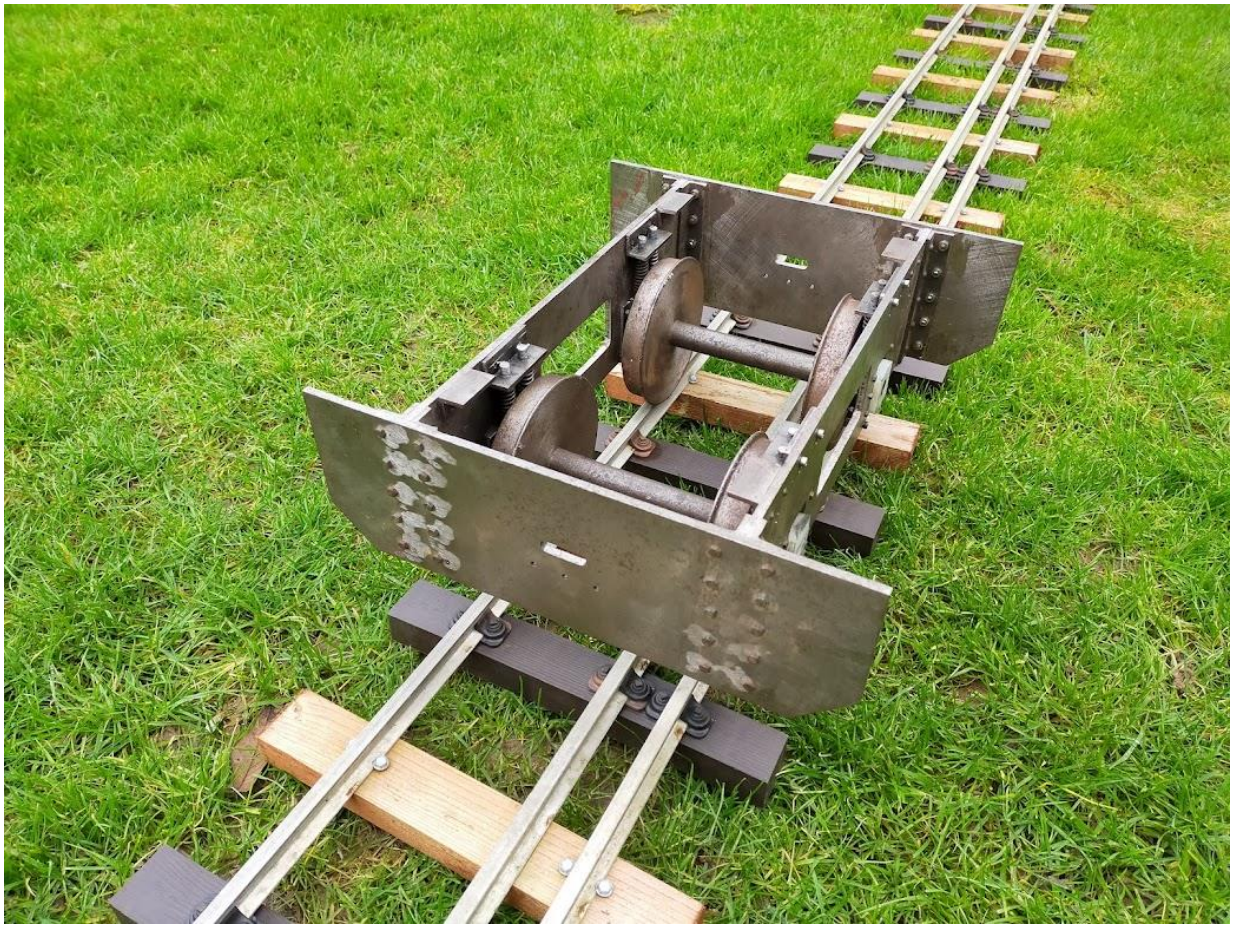
The tender is coming along quite well. I started out with little more than a fag packet design and have been making most of it up as I go along, partly influenced by the material available. Apart from functionality there were two major considerations; firstly how to make it watertight and secondly accessibility to carry out repairs. In the end I think I have successfully addressed both issues. There will be a sole plate as shown in the picture below which is attached by four 5mm bolts tapped into brackets already fitted to the chassis.

The body is made from 4 pieces of aluminium plate shaped like the letter 'L' and using 1" aluminium angle for the corners. The same being used as the support for the top plate. This will be held in place with 4mm bolts screwed into captive nuts in the angle plates. The body will be secured to the sole plate by a multitude of 3mm screws with sealant to make it all watertight. Most of the basic fabrication is now complete the majority of visible fixings will be 3mm dome head hex screws with nuts. These dome head hex screws were used very successfully on the Hudswell battery loco I built last winter and look very like rivets from a distance. The advantage being that it can all easily be dismantled should there be a need.

This is the body so far. Still a lot of work needed but the design is now reasonably clear. The next major decision if the plumbing. I need to decide where the water is to go; i.e. a supply to the handpump, to the injector (which Sweet Pea currently does not have) or both.

Tuesday 8th February 2022

All four wheels are now fitted to the tender chassis and the picture shows it under test on a section of track. The springs were a matter of pot luck from the scrap bin but seem about the right strength.



Next stage was to fit the drawbars. The drawing show this as a two separate items bolted through the slots in the buffer beam. However, since the tender is providing the link between the locomotice and the riding trolley(s) I felt it better to make it as a single bar. I used a piece old fencing angle iron which as the picture shows is currently very rusty. It will get cleaned up later when the whole chassis will eventually have to be dismantled for painting.

Next stage is the tender body. I was not overly impressed with the design in Jack Bucklers book so I had a look at pictures of tenders on the web. Others must have felt the same as no two were the same and none looked like Jack's design. I found one that I felt was suitable and moreover that I could fabricate so this is now in hand. For the prototype I shall be using 2.5mm sheet aluminium as I have loads of it. I do have the remains of a copper hot water tank which may get used eventually but not until I am sure of the design & construction method.

Sunday 6th February 2022

First time there has been anything to report for weeks; too busy on other things. This has included working on the new low level 5" gauge track at WWSME and helping to build the club's new locomotive an 0-6-0 MollyAnn saddle tank from a kit supplied by Polly. More about that another time as I need to take some pictures to illustrate what we are doing. It a long term project so no rush.

Anyway yesterday I took Billy my 16mm loco for a run on the club's indoor track. The start was not auspicious, when I pu the steamed up loco on the track it stopped dead within a few inches. Very puzzling to start with but it turned out that a gadget called a chuffer pipe had become detached, dropped down and then jammed. With some help from Barry we got the pipe out. It is an after market item that fits over the blast pipes to give a more realistic chuffing sound. Apparently it is only a push fit on the blast pipe sand had clearly worked loose. It probably finally came off whilst I was oiling the loco as I need to turn it on its side to get at things. Getting it back on requires some dismantling which will have to be done at home later. So we fired up the loco without the chuffer and fortunately it ran fine, albeit without the chuff.

Whilst we were playing inside, some hardy souls were running the bigger stuff on the outdoor track. This included my friend Simon Nuttall who is all in the West Wilts VMCC section. Simon has recently bought a Sweet Pea and he kindly let me have a drive. Great fun and it has fired my enthusiasm to get

started on my Sweet Pea project. So today I made a start on the tender. I still don't have the axle boxes machined but I did have an inspiration on how to make them myself out of nylon bar stock so I made a start today.

This was just as well as I found it necessary to change some of the existing parts as well before I eventually had the wheels fitted properly into the frame. Much of this was trial & error so took quite a time but I now know exactly what needs to be done so making the bits and fitting the other wheel should be much quicker. I'll take some pictures tomorrow to show how it turned out.

Wednesday 29th December 2021

Not much to report due to Christmas and other family distractions. One success however, the water gauge on Silver Lady is now crystal clear without the need to dismantle. I tried filling the boiler with a Citric Acid solution and this did the job nicely within a couple of days. Tank now washed out with fresh rainwater and loco put away.

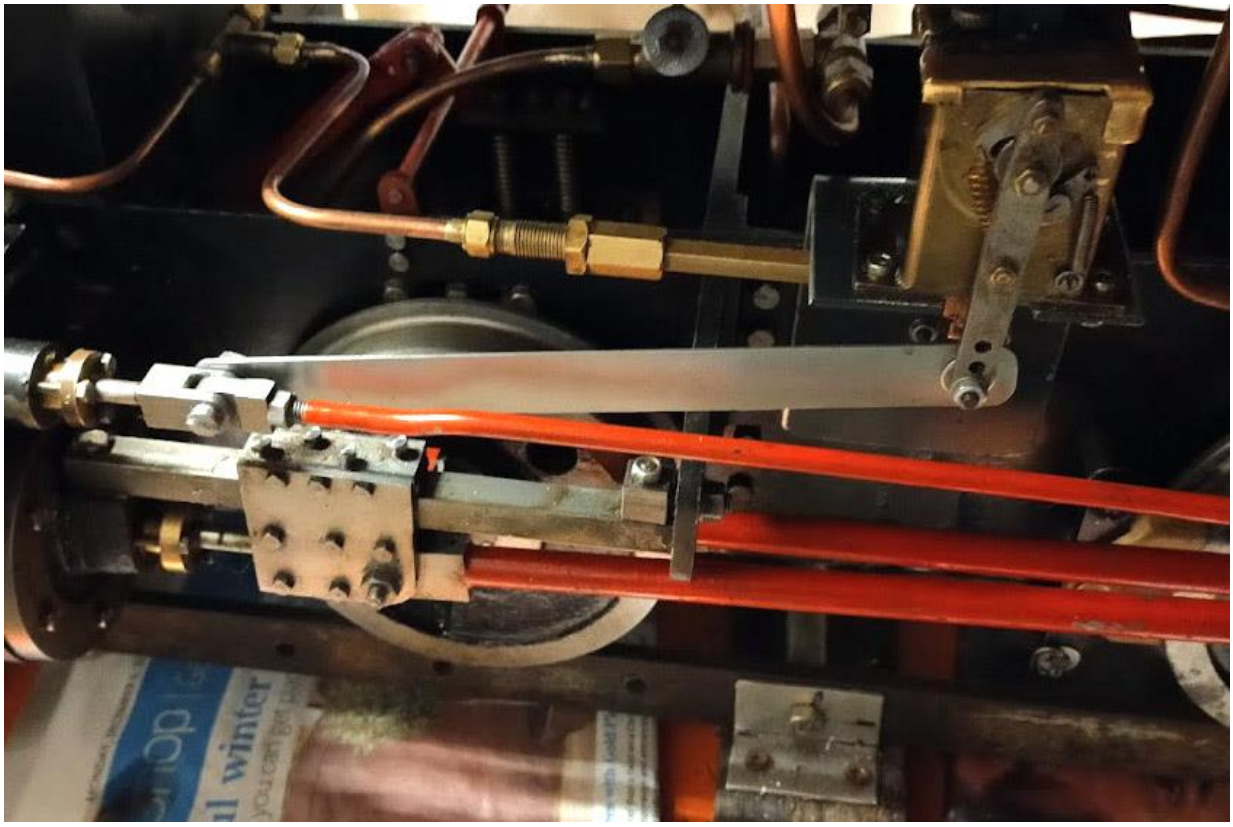
Not so successful with milling the horn slots in the axle blocks sadly. My mill-drill was simply not up to the job. In truth its not so much the Mill as the difficulty of holding the job firmly in the cross slide. I gave up after breaking the second milling cutter. But all is not lost, I spoke to Chris and Terry at WWSME just before Christmas and they have kindly agreed to teach me how to use the big Warco mill in the club workshop. They are currently using the mill to make parts for the new low level track so it will sometime in the New Year but no hurry.

Hard to believe another year is nearly at its end.

Sunday 19th December 2021

Time to work on Stella is still limited but I have managed to fit in a few small jobs. I believe I have sorted the leak from the LH water gauge but whether it is steam proof remains to be seen. The tender axle blocks are coming along nicely. They were kindly faced off to size (1 3/8") by Chris Wiggins who also tested the new pressure gauge and passed it as accurate. I spent this morning drilling the ½" holes in the axle blocks and making sure they were a good fit on the wheel axles. The next step is to mill the slots in the blocks where they fit the horn blocks. I am hoping I can do this job myself but with my setup it will be tricky and I may have to farm the job out – finger crossed.

I have also made a more presentable connecting rod for the oil pump for which I will include a photo in due course. One possibly worrying thing is the capacity of the oil tank. I filled it up a few days ago and quite a lot leaked out via the slots cut to allow plunger stroke. I will need to keep a keen eye on the rate of consumption but on the face of it the actual capacity is not much greater than the displacement pumps I removed. The pressure gauge is now refitted to Stella and all that stands in the way of a steam test is me girding my loins.



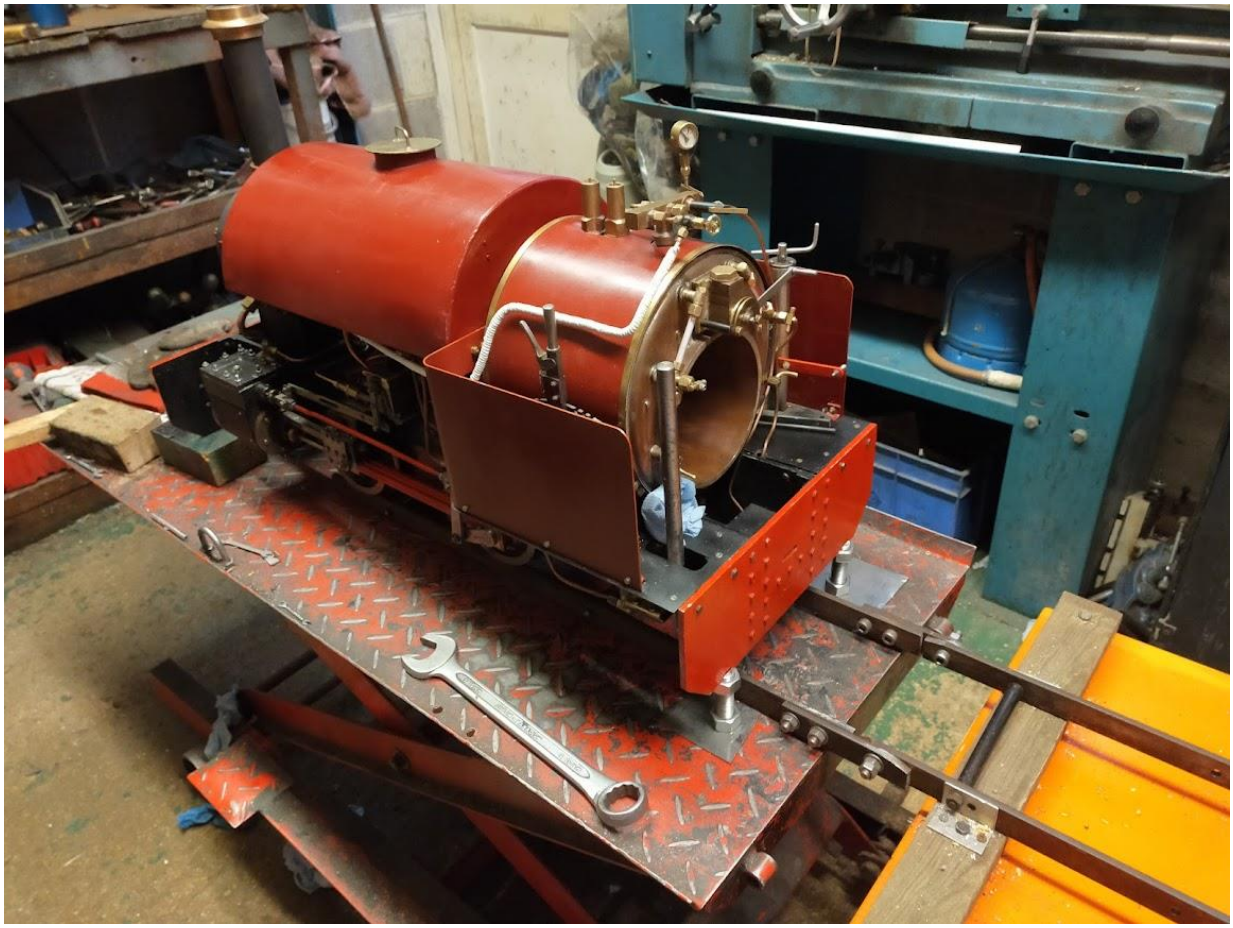
On Saturday I took the Silver Lady over to Westbury to give her a run and have her certificated by the club. I was pleased to find that the pressure relief valve I had rebuilt worked fine and actually blew off at 40psi so no further adjustment was needed. That was pure luck. Two issues remain, one old and one new though neither are serious. The new one is the water gauge where the glass is opaque and difficult to read. Not a serious issue if I continue to run it like Billy where when the gas runs out you stop. But the benefit of Silver Lady is that you can replenish both gas and water and keep running, but in that case it is essential to be able to read the water gauge. Getting at the gauge to clean it looks tricky.

The other issue is the wobble is slightly less since I cleaned the crud of the wheels but still present. Having talked to Roundhouse about the problem and done some more investigation, I think the problem is one of the rear wheels. This loco has the more expensive insulated wheels fitted with steel rims on nylon hubs. One rear wheel is not concentric to the hubs enough to create a wobble at the flange. Like the water gauge it's more an annoyance than a serious fault so a back burner job.

Wednesday 8th December 2021

Another job ticked off the list. The safety valves were refitted and the boiler filled with water. I was then able to roughly calibrate them by using to hand pump to raise the pressure to 60psi on the old gauge which under reads by 20psi. They will need to be calibrated properly under steam but at least they are somewhere close. As it happens, the new gauge arrived yesterday. I have painted a red line on the inside of the dial to indicate the 80psi working pressure and it is now fitted ready for the steam test. In hindsight I discovered this morning that I should have let the club tester have the gauge for checking first so it will now have to be removed – doh.

I had a eureka moment concerning raising the loco onto the tracks for the hydraulic table. The picture probably says it all, but basically I made two adjustable jacks out of 16mm threaded bar that will lift it sufficiently for the rails to slide under the wheels and then lower them.



This worked a treat and Stella can now be easily moved from bike lift to table. I have not yet attempted a transfer into the back of the car. That can wait until the weather improves and I have some help on hand just in case. The second picture shows it on the table and the eagle eyed will notice that the buffers I fitted on Saturday are no longer present. They just fouled the folding section of the track so I removed them for now (an easy job as I predicted).

Whilst calibrating the safety valves I observed 3 water leaks I had not noticed before. Only one is on the boiler and is a very tiny trickle from the gauge blow down valve on the LH side. This is the one I refitted recently and I am unsure what the problem is at present. To investigate I need to drain the boiler down to at least the level of the valve and it's a job I am avoiding for now.

The other two leaks are on the water feed side. One is from the feed to the hand pump at the union with the saddle tank. Tightening has not helped so I will need to dismantle and seal this connection but it can wait until the saddle tank is removed for painting. The other is from the plunger of the axle pump. It is intermittent and seems to depend on the rotational position of the eccentric. For the moment I am just going to keep an eye on it and see if it becomes a serious issue when Stella is run on steam. I am dubious about the axle pump so it was always something to look at.

At club today I was shown a piece of 30mmx30mm bar stock about 6ft long that was in the scrap metal bin. I am allowed to chop off 4 lengths about 40mm long to form the axle blocks of the tender. Fortunately the club has a very substantial power saw so it's easy enough, just time consuming. WE managed to cut two blocks today between other jobs and hopefully I'll get the other two cut on Friday. Still no idea how I am going to machine them but one step at a time.

Saturday 4th December 2021

I have made a start on the list complied yesterday. The ride height is now level partly by lowering the front and partly by raising the back end. Measure at the buffers beam it is now 25mm front and rear. I also sealed the lower axle pump union with ptfe but gave up on the top one, which may be a mistake as it's the high pressure side – we shall see. Job list amended. One job not on the list but dealt with was the boiler drain outlet which was a very narrow piece of pipework. It is now 3/16" the largest that can be fitted. It remains to be seen if it will help. The buffers are now fitted to the front beam – not absolutely sure they look right but easy enough to remove.

I did try a transfer of the loco from the bike lift to the table but it was unsuccessful. The main problem is the rails are slightly too high to go under the buffer beam. I will need to raise the loco by just over 2" to slide them under then devise a way to lower the wheels onto the track once in position. Still pondering on the best way to do this.

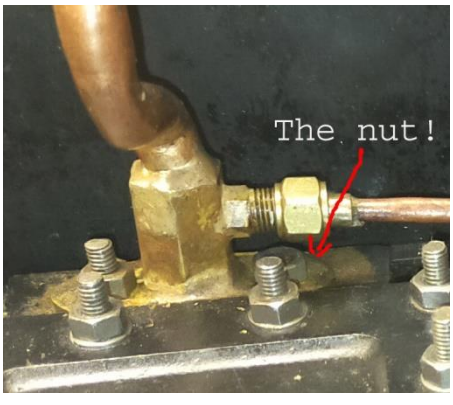
Friday 3rd December 2021

Very cold last few days and some domestic issues so no time spent I workshop. However, I though it about time to make a list of the things I still need to do and see if there is a sensible order to tackle them:

- Seal *the top* axle pump connection with liquid ptfe.
- ~~Adjust the axles to make the ride height level.~~
- ~~Fit the second relief valve and carry out a hydraulic test to adjust them to 80psi.~~
- ~~Consider fitting a set of buffers to front (spares from the Hudswell). Not really correct for a narrow gauge loco but…~~
- ~~Investigate leaking LH water gauge blow down valve~~
- Testing transfer of loco from table to car.
- Modify riding trolley to include coal bunker & tools.
- ~~Fit the new pressure gauge (no indication yet when it will arrive.~~
- Test fire the boiler to identify issues and make sure the relief valves are set correctly.
- Formal steam test.
- Remove saddle tank for painting + investigate leaking hand pump union
- Fit headlights
- Design a new cab body – decide whether to proceed or not.
- Make tender axle blocks
- Make tender suspension
- Design tender body
- Investigate fitting an injector – fed from tender
- Investigate relocating hand pump and sharing clacks.
- ~~Check boiler drain down for blockage~~

Wednesday 1st December 2021

I have been a bit too preoccupied to write up the blogg for a few days so time to catch up. Firstly a confession for any steam railway connoisseurs. To test out the lubricator I used ordinary 20/50 motor oil. It was never intended that it get into the cylinders or anywhere near steam but the blocked pipe meant that some oil did get into the RH cylinder before I realised what was happening. I have cleaned out the oil tank and blown out the pipes before refilling with proper steam oil. Not much I can do about what went into the RH cylinder but I have run the loco quite a lot on air and with the drain cocks open. Hopefully what if any is left will do no harm. Another problem that has long worried me was a whistle from the LH cylinder area. I thought it was a poorly fitted steam chest cover but that is now well sealed but the whistle persisted. I then sealed the lubricator connection as that was where it seemed to be coming from without any improvement. Finally I realised it was coming from the joint where the steam input pipe enters the steam chest. Tried tightening the fixing screws, one was firm the other just spun round and clearly had a stripped thread and was of course the one which is impossible to reach under the lubricator connector.



My heart sank as this is a very difficult part to dismantle but there was one slight ray of hope. I noticed that this nut needed a larger spanner than all the other 4ba nuts used in this location. With some difficulty I managed to remove it and sure

enough it was actually a 4mm nut (4ba is nearer 3.5mm). I managed to find a correct nut though it had to be filed a little slimmer to get it under the lubricator connector. That was the easy bit; I then spent a very tedious 1/2hr before I finally managed to get the nut started enough with a screwdriver to use a spanner. Thankfully it did tighten down successfully so hopefully that is the end of the whistle.

The only other thing I have done to the loco is to re-fit the second water gauge as can be seen in the picture. Not quite true as I also made a new fitting for the (old) pressure gauge for reasons I won't go into. Still waiting for the new one before carrying out a first steam test.

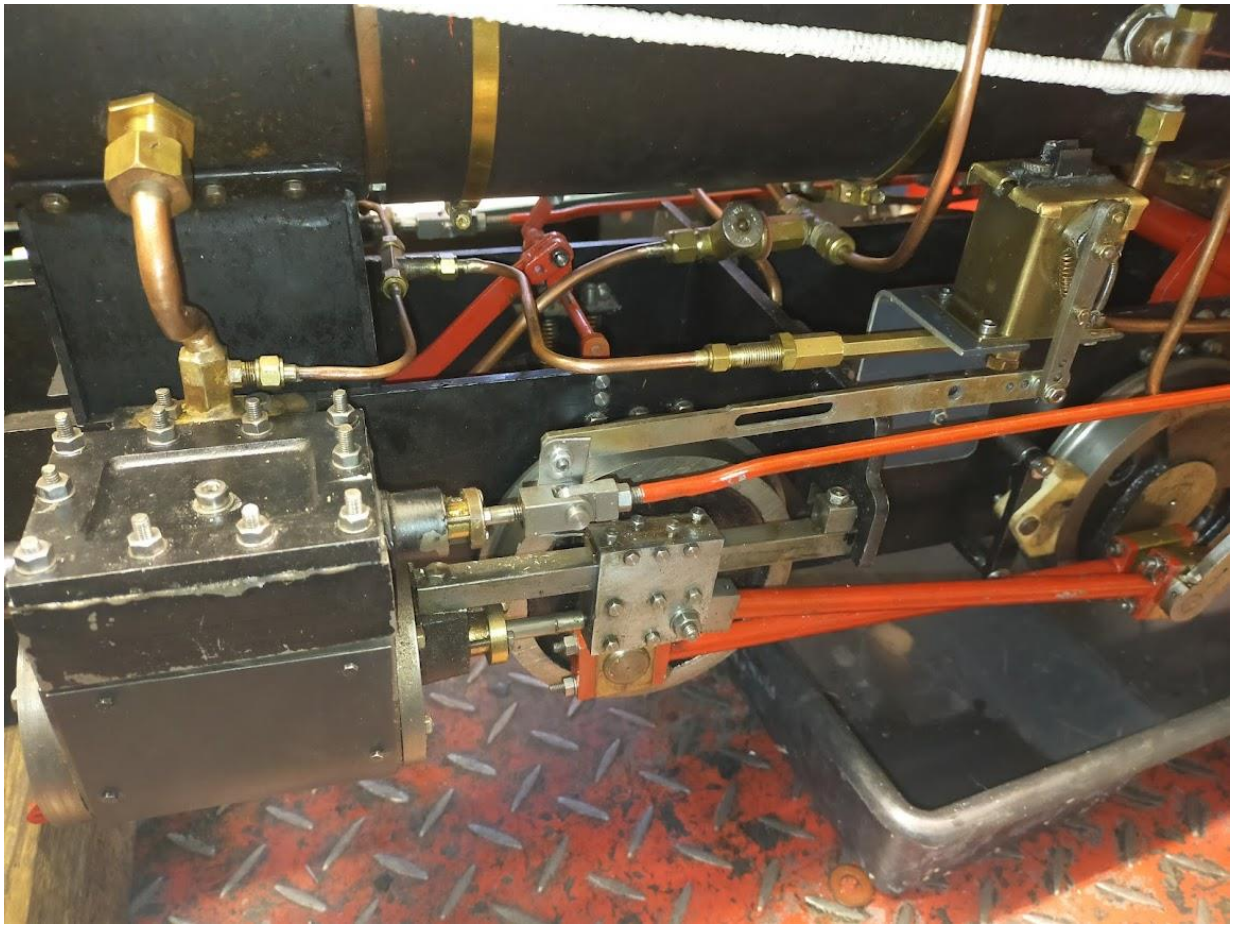
I have also been giving thought to moving the loco between garage and car. The result is the modification shown below to my hydraulic table. One half of the rail is fixed to the bed of the table and the other half is hinged so it can adjust for slight differences in height between table and destination. Not yet had the courage to try it out, probably best to wait until I have some assistance just in case it goes horribly wrong.

Saturday 27th November 2021

Well I girded my loins and had another go at silver soldering. This time it seems to have worked ok. I think part of the problem was trying to do it with the bits held in the vice. It simply does not get hot enough. Doing it in the V of the brick, which was how I did it on Wednesday, seems to keep the heat up. I also mixed the Flux to a thicker consistency as it may have been a bit watery before.

Anyway with the pipe soldered I was able to complete the assembly and test out the lubrication. After pumping for some time there was no sign of oil at the union with the steam pipe. However, the level in the tank was dropping so it was going somewhere. To cut a long story short, the problem lay with one of the pipes I made on Wednesday. It was blocked by solder. Once drilled out it all worked fine. Just as well I was testing on the blocked side otherwise I may not have discovered this until the damage was done.

Operating arm now fitted and the loco was run on compressed air to make sure everything was working as expected. The arm is temporary made from scrap whilst I sorted out the dimensions. I will eventually replace it with something better – but don't hold your breath.



I now need to revisit the list I made on Monday to see what else I can do. A steam test will obviously have to wait until I get and fit the new gauge at which point I will also have to calibrate the safety valves.

Friday 26th November 2021

I managed to turn down the BSP thread on the tap to 3/8” and recut it to 3/8” ME. Then I was able to make a suitable union nut and bend up a piece of copper pipe to take the outflow away from any vulnerable parts. I used 3/16” pipe for now. Later I will have a go at making a ¼” nipple to use ¼” pipe but this will be a very delicate piece of turning. For now what I have done is more accessible and will perform far better than what was previously installed – I hope.

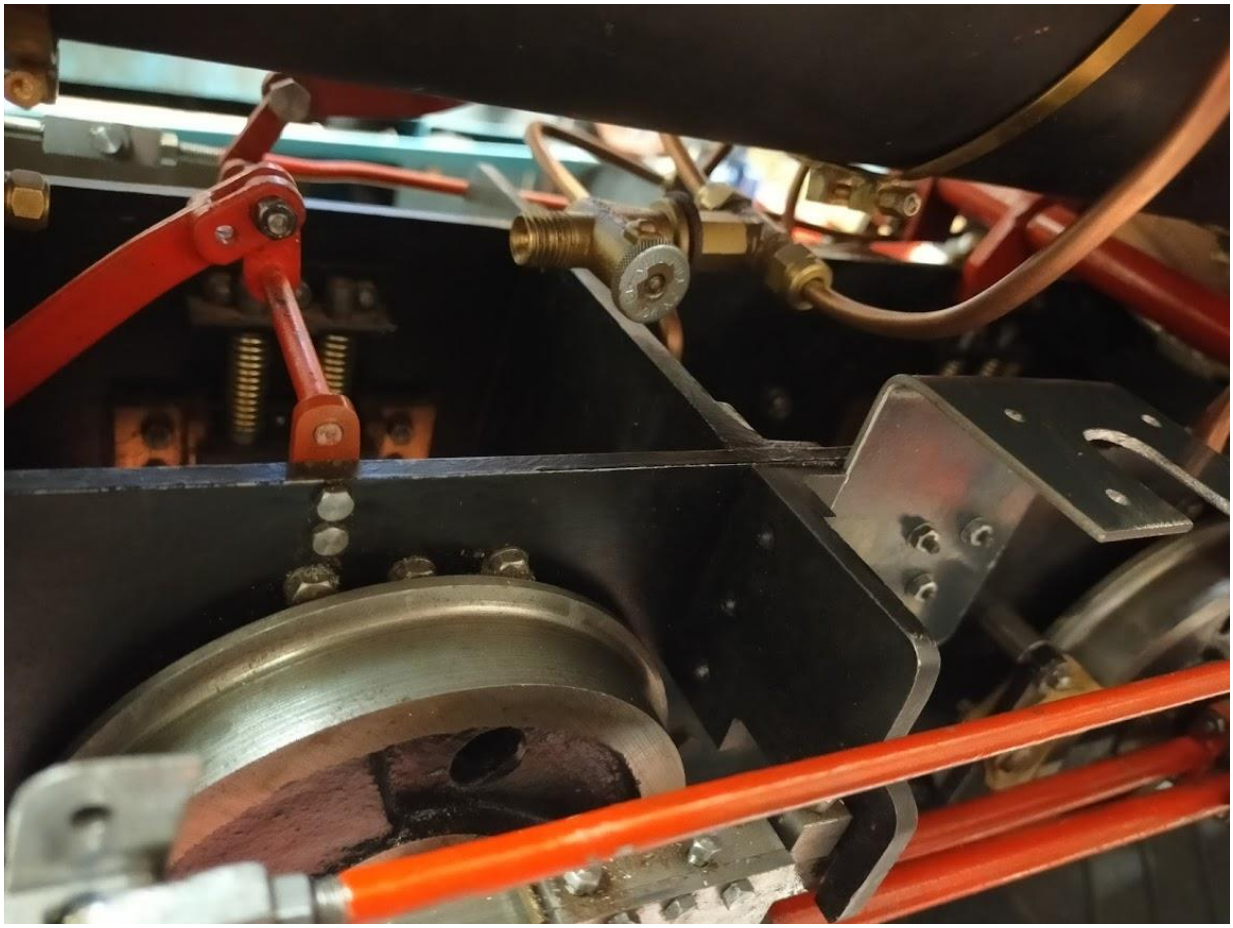
The allen key set I ordered arrived on Friday, looks very good and I did find a metric key that fitted the grub screw on the lubricator so I was able to complete the dismantling. This gave me access to fit the pivot for the second pawl with a lock nut on the inside and block a redundant hole in the body which would have caused an oil leak. Getting the working parts back together was then easy What was not so easy was to get the pump actually working. I had bought some 1/8” bronze balls which the diagram in the Martin Evans book showed as being part of the design. But this simply seemed to lock the pump up completely and resulted in a twisted spring. I tried it without the ball, just relying on the specially shaped plunger but it was clear then it was not working properly.

After some thought, I fabricated a double diameter collar which enabled me to fit the Schrader valve unit I made on Thursday into the output side which seems to work well. So the whole assembly was cleane d and reassembled with liquid ptfe to seal the joints though the test did not reveal any problems. I don’t want to silver solder any of the parts yet in case it needs to be dismantled again. The pump is now bolted onto its platform and this enable me to bend up a connecting pipe to the cylinder feed T piece. All that remains is to silver solder the pipe nipples. However, I made such a hash of doing this on the balance tap drain pipe that I have left this job for another day and will have a practise on something else first. Strange because my first attempt on Tuesday worked really well – not sure what I am now doing wrong.

Thursday 25th November 2021

First job today was to ring Polly Models and order some 1/8” balls for the lubricator, I also ordered some 7/32” union nuts and some special nipples to adapt these for 1/8” pipe. I had been puzzling about this for a couple of days so had a very useful chat with the ladies at Polly. I don’t really need these in the short term, but there is some pipework on the loco which uses this combination of nut and pipe. So it’s more like insurance in case I break something.

I decided to continue my investigations into using the petrol tap for the balance pipe drain and I am quite pleased with the progress you can see in the photo.



In the end it was relatively easy. I was able to thread the input end of the tap 3/8" ME and the same on the T piece so all I needed was a15mm long collar threaded 3/8" ME internally to join them. The collar will probably be silver soldered to the T piece eventually though its not critical as there is almost no pressure on this section of pipework. What I still need to fabricate is the pipework from the output side of the tap so it drains well clear of any other parts. A slight problem is that the thread is ¼" BSP and I don't have a suitable tap, or rather I do but I have no idea where it is at present. I also need to open out the internal passageway of the tap to its maximum. Whilst doing that I will investigate whether I can hold the tap in the chuck somehow and turn the output thread down enough to allow me to re-cut it 3/8" ME. Then I can make a suitable union nut and nipple.

I was originally planning to replace the 3/16" balance pipework with ¼" but this is probably not feasible due to the size of the bushes in the tank and it may not be necessary. The bottleneck in the system is the T piece feeding into a small bore tap. I reckon that by boring the tap and T piece out it will create an adequate flow rate without replacing the other pipes. Once again what seems like a simple job has taken quite a lot of time. Fun and satisfying though.

Wednesday 24th November 2021

Well I have tackled two of the items on the list below. The blower has been reconnected and no longer leaks. Better still it actually works. The water gauge tap has been repaired, I had to make a new threaded union nut as the original one had a stripped thread. Not actually refitted it yet but pretty optimistic it work when I do.

Best of all, I have successfully run Stella on compressed air not for long it's true as the consumption rate exceeds the output of the boiler but enough to suggest it will run ok on steam. So it looks like my adjustment of the valve has worked. It also ran backwards but not quite so well so possibly more fine tuning needed.

Also spent some time pondering how to fit a Schrader valve in the lubricator feed pipe to prevent steam prevent steam back pressure overpowering the pump. Not only did Mr Factotum suggest this on Youtube, but Jack Buckler mentions fitting a second valve in his book. At John Hill's suggestion I also looked in the Martin Evans book he lent me and found a diagram of what looks very like my lubricator. What was interesting is it includes a 1/8" ball bearing which is not (or perhaps no longer) present in mine. So the hunt is now on for the missing ball.

I am still pondering over improving the balance pipe on the saddle tank. I feel that a motorcycle petrol tap would be a more pragmatic solution to elegant but tiny bore tap currently fitted. I found a selection of old taps but the threads are all ¼" or 1/8" BSP. BSP Threads are odd, the size refers to the bore of the pipe not the external size of the thread. I might just get away with a 1/8" size (which has an external size of 3/8") but I don't have the right tap. Another thought is to turn the tap thread down and recut to ME thread.

Monday 22nd November 2021

Stella now has a Written Scheme and a hydraulic test certificate. Chris reckoned the boiler and general fittings were all fine. We did find that the pressure gauge was under reading by near 20psi at 80psi which is way outside tolerances. I have now ordered a new one which is a bit larger to make it easier to read and rated to 150psi to future proof when next tested – but that is 4yrs away. I still need a steam test but now it has cleared the way for me to light the first ever fire in this loco.

Still a few (hopefully) small jobs to do – I am sure others will crop up:

Rebuild and fit the mechanical lubricator.

Repair and fit the second water gauge.

Make up a pipe for the new pressure gauge – old one very flakey

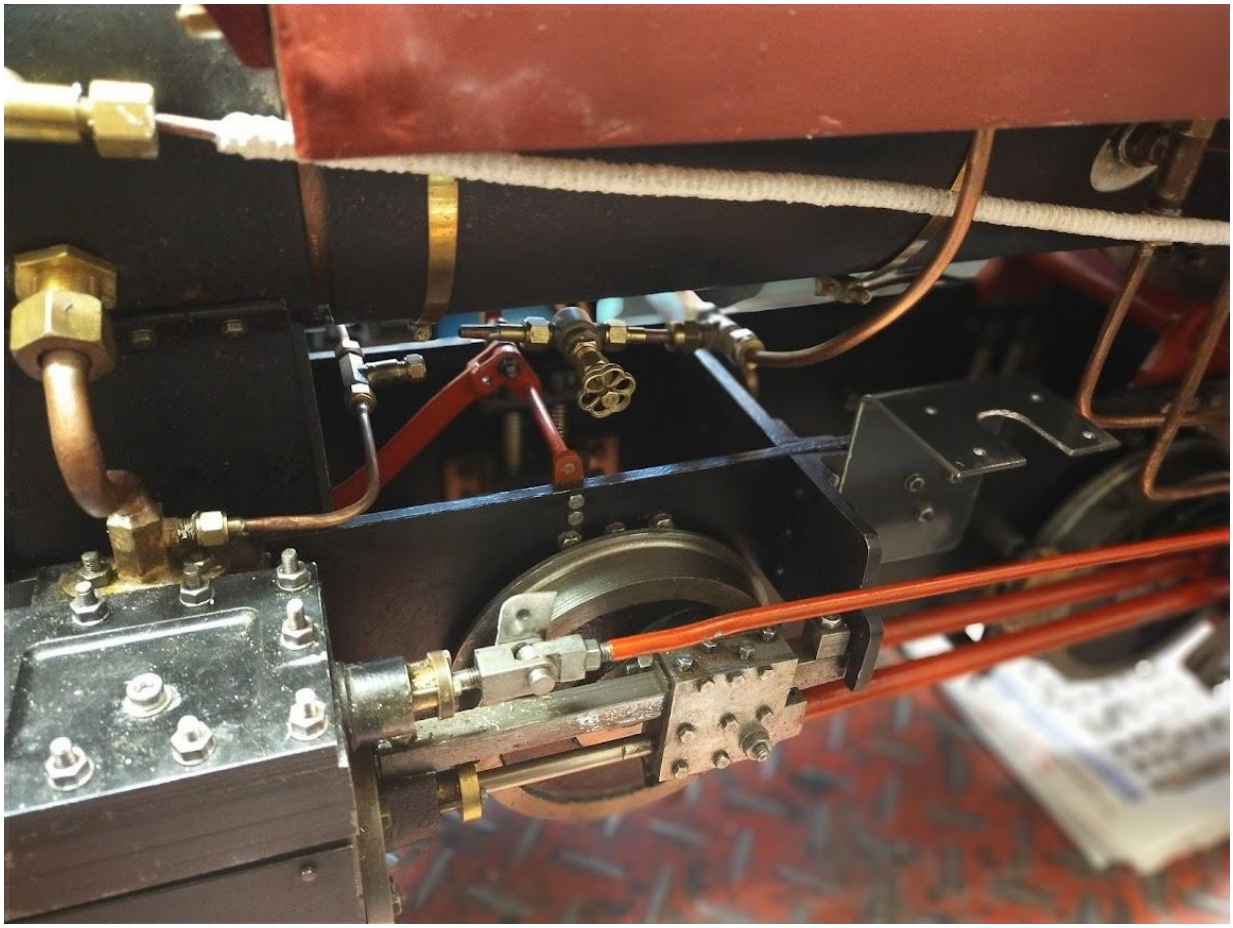
Sort out the blower valve connection which was blanked off for the test.

Investigate why the bypass valve for the axle pump is so stiff

Check the axle pump connections, though they did not leak today

Sunday 21st November 2021

The picture shows where I have been directing my attention over the last few days. Hard to believe that I have so little to show fo r several hours work.



There are three changes in the picture. The first is temporary and that is to move the saddle tank drain cock to a more accessible position. In the longer term I want to remake the balance assembly in ¼" pipe as it is painfully slow with the existing 3/`6" pipework. I discovered this is a bit more complex than I first anticipated due to the size of the connectors in the saddle tank and because of the limited bore of the drain cock. I will revisit this later.

Second change is the fitting of the bracket to hold the mechanical lubricator. In fact the whole assembly has been fitted to check out the drive mechanism – you can see the bracket on the valve drive connector. The pump itself needs modifying to include a second pawl to stop it running backwards and alter the orientation of the output connection. This in turn needed a very small Allen key not found in my toolbox. I have ordered a full set of keys including some very tiny ones which should do the job; this will be here on Tuesday.

Third thing is the pipe to connect the pump to the steam chest. This uses the connections into the steam pipes formerly used by the displacement lubricators which have now been removed. The pipe from the T junction to the lubricator can be made until the latter is fitted so another job on hold. Quite pleased with the way this piece of pipework turned out. I had to make the T piece and then silver solder it and the nipples onto the pipes. Not done that for a long time.

Saturday 20th November 2021

Chris was at club on Saturday and Chris Wiggins has offered to do the hydraulic test on Stella on Monday morning. Even better he is coming round to my house to help me load her.

The main reason for going was to run the 16mm locomotives on the indoor track. It took quite a while to get the track assembled and I then had trouble with the batteries so in the end I only had time to run Billy. He went very well and now has one of the clubs new test certificates that the committee

have devised to comply with our insurance cover. The Silver Lady will have to be run next time. Batteries now all fully charged.

Thursday 18th November 2021

Things have been a bit hit & miss this week due to wife not being well so only infrequent and brief time has been possible in the workshop. I did manage an initial hydraulic test which went quite well under the circumstances. The hand pump worked fine and was able to take the pressure to well over 100psi. I limited it to 110psi as I did not want to risk the gauge which is only rated to 120psi. Only three leaks were noted, all from fittings. One was the compressed air connector which I had not bothered to seal with ptfe and easily fixed. The second was from the high pressure side of the axle pump and is almost certainly leakage from its clack valve. It was only a dribble and I am pretty sure will not be cause for a failure. I have plans to redo the pump connections fr the steam test anyway.

The third and most worrying leak was from the RH cylinder which indicates the regulator valve is not seating properly. Talking this over with John Hill we concluded that the pragmatic solution was to seal off the regulator for the duration of the hydraulic test (it's the boiler itself being tested at this point) and see what happens when we steam the loco. He thinks it will at worst only be a small leak that the drain cocks will handle. So the regulator valve now has an O ring which effectively seals it off. A second hydraulic test with the steam chest covers removed showed no trace of water from the wet header. So I think it safe to present Stella for her hydraulic test, just need to make the booking and figure ot how to get her into the car.

While the steam chest covers were off I checked the valve timing. The RH side was pretty much spot on but the LH was way out such that the front inlet port never opened. This may well explain its reluctance to run properly on compressed air. I have now adjusted the valve to equalise the inlet port openings but cannot test it until the O ring in the regulator valve is removed. I also intend to remove the pressure gauge for the formal hydraulic test as I don't want to risk breaking it so I made a blanking plug. I later found out that the club testers will leave the loco pressure gaug connected long enogh to check it against the official gauge but only taking it to 100psi or so. Once they are happy the gauge is accurate, it can be blanked off.

Saturday 13th November 2021

As a result of a chat with John Hill, I popped over to Screwfix this morning and purchased a tube of liquid PTFE which he swears by for sealing boiler fittings. I then remade all the connections using the liquid and after leaving it for a while I did leak test using fairy liquid. The only serious place I could now see bubbles was around the gauge glass. Tightening the unions did not improve matters and I was afraid that further tightening would fracture my last piece of glass tube. So I dismantled it all and cut longer pieces of silicon tube to seal the joints. This did the trick and that leak is now sorted. On Monday I hope to do a hydraulic test which may well show other weak fittings – but one step at a time

I also pondered on the matter of getting Stella out of the garage and into the back of my car. IT currently resides on my bike lift. This has wheels but they are quite small and will only work on smooth concrete. I doubt I can get the car closer than 3-4ft to the garage with the tailgate lifted so I will need to bridge this gap somehow if I want to load on my own. One possible solution is to run it from bike lift to car on a piece of track. I have now fabricated a piece of steel track about 5ft long which may do the trick. It is hinged in the middle to allow for slight differences in height between lift and boot. Will be interesting to see if it works. If not it's back to the drawing board.

Thursday 11th November 2021

Did not get round to completing the blogg daily so some of the detail over the last couple of days is forgotten or not necessarily in order or overtaken by events.

In summary, I have checked the fit of all the coupling and connecting rod bearings and most of them were well undersize. They are all now reamed to be free without any detectable slack. I then reassembled and found the wheels would turn ok. Still a degree of resistance but then everything is still new and tight. Placed on its wheels, the weight of the loco was sufficient to make the whole motion assembly turn including the axle pump. So I am reasonably happy it is now basically sound mechanically.

On Wednesday I went to WWSME and discussed the mechanics of getting the boiler hydraulic test out of the way. They were very helpful and what was said has altered my plans slightly. First, relatively minor point was that the test should be done with the pressure gauge fitted along with most of the other steam fittings. The valid point being made that it is better to find any weakness under the water test than under steam. It is also mandatory to have the WP marked with a red line inside the gauge not on the outside glass. Well that is one thing I have fixed. The bezel of the gauge comes of easily and the red line is now in the right place. If only all the jobs were that easy.

However, it did mean that I needed to check all the steam fittings rather than just block them off. In practise all of them were slack. It seems the previous owner relied on silicone sealant rather than using shim washers to get the fittings tight and correctly lined up. I managed to break one of my new gauge glasses whilst discovering this which was annoying but I think most if not all are now correctly aligned and tight – just hope than is not famous last words.

The axle water pump also proved interesting. The connectors were poorly designed so that it was possible to screw them in far enough to jam the ball bearings such that it could neither suck water in nor pump it out. I have now modified it so this cannot happen but longer term I plan to remake these connectors to a more satisfactory design – once I have figured the details out. Anyway the pump is now refitted but can really only be tested when the engine is running.

To fit the axle pump I had to stand the loco on its nose the way I first saw it in the pictures. This gave me a chance to check out the hand brake which did not seem to be working. Indeed it was not operational but all the key components were present, just not adjusted properly. It now works fine.

I believe I may be close to the point where I can do what the WWSME boiler tester suggested and carry out an hydraulic test myself by using the hand pump to pressurise the tank.

Monday 8th November 2021

I found some names plates in the box of bits that came with the loco so for the time being it will be known as Stella. Things are going well but a number of snags have been identified some of which I have resolved, or know how to resolve, others require consultation with the experts. First issue was that I was unable to turn the wheels and get the pistons moving. Initial reaction was that the pistons had seized in the. The block is cast iron as are the rings so quite feasible that they had rusted up.

I took the tops of the steam chests and sure enough there was some evidence of corrosion so this was cleaned up and penetrating oil liberally squirted around the valve so that it would soak into the cylinders. While the lids were off, I drilled and tapped to take 4mm bolts so that I could oil the valves/cylinders in future without needing to remove the covers.

None of this did any good so made up an adapter so that I could fill the boiler with compressed air. The adapter worked fine but air was leaking out of various orifices as fast as I pumped it in. Most of the leaks were on the backhead and manifold so I applied fairy liquid to track them all down and try to fix them. Part of the problem was many of the fixing were only finger tight but as most had to be at a specific angle to line up with other fittings, simply tightening them was not the answer. As luck would have it, during my “Titch” period I bought a pack of ¼” copper shim washers and these were ideal for both sealing the leaks and getting the alignment right.

I found that both gauge glasses were broken (and a major source of the leaks). They looked ok but were cracked inside the fixing. Whether I broke them whilst investigating the leaks or they were already broken I don’t know. As it happens new gauge glasses came with Stella so they are fitted though I am not sure I made a good job of it. Eventually I found I could raise boiler pressure to near 80psi.It dropped pretty rapidly so there are clearly still leaks but they can wait until later to be fixed properly as many of the steam fixings will have to be removed and blanked off for the hydraulic test.

I was hoping that the loco would run on compressed air but absolutely nothing moved so more drastic measures are needed. First step was to disconnect the connecting rods from the cross heads. This allowed the pistons to be moved independently and both were free so my initial theory was blown away. Next I disconnected the valve gear mechanism from the return crank and found the valve gear also moved freely.

Third step was to remove the connecting and coupling rods so the wheels could be checked. Easy enough as the big ends are split and can be unbolted. However, I first stamped identifying letters on the various bit to make sure they go back together correctly. With the rod removed I found that the front wheels spun freely so they were not the cause of the problem.

The rear wheels however would only turn very stiffly and only for a few degrees in either direction. My suspicion fell on the axle pump which is driven by an eccentric and strap from the rear axle.

Disconnecting the pump drive was the single most time consuming task of the day, simply because of access problems. I solved this in the short term by raising the loco on blocking and removing the rolling road but this probably won't work for reassembly.

Anyway with the pump drive disconnected the rear wheels would turn full 360 but did have a tight spot. This improved slightly when I was able to get some oil to the bearings. I don't think it's a serious issue, the assembly just needs running in. I now need to remove the pump as it seems to me to be jammed but that is a task for another day.

What I did find was that some of the big end bearings were tight on the crank pins when properly tightened up. I had observed when stripping them that many of the securing nuts were only finger tight so this may well be a problem the original builder had yet to address.

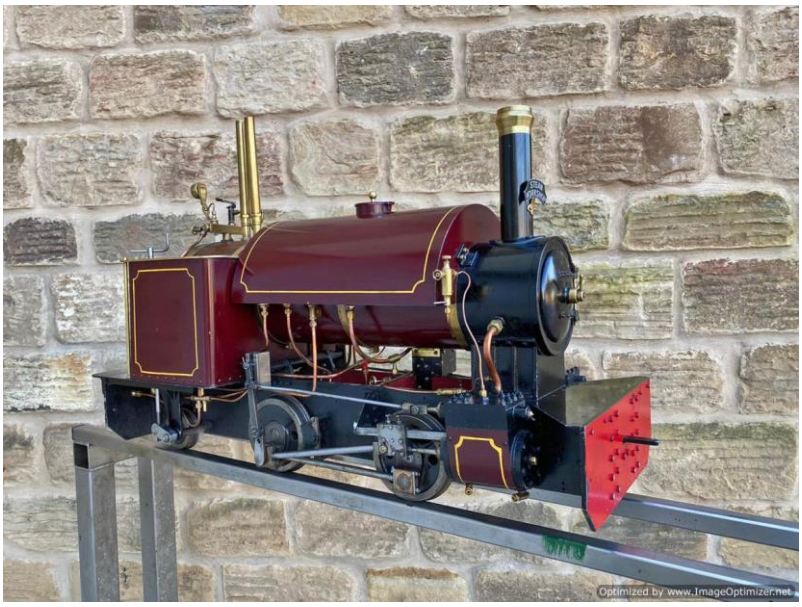
Sunday 7th November 2021

The Sweet Pea was collected on Friday and is now residing on the bike lift in my workshop.

Not quite as tidy as the sample one I included below but very similar in design. As these are all hand built from basic plans, there can be quite a lot of detailed differences particularly with the cab and shape of the tank. Not able to give it much attention due to other commitments until today so I am still checking it over. It has received an hydraulic test to the boiler a few years ago but has never actually been steamed. Doubtless a few issues will arise as investigations continue but overall it looks good and I am pleased with it.

Monday 1st November 2021

No real activity with the locos for several months. I seem to have been busy on other things. I still attend the WWSME club regularly and have become part of the site maintenance team. Mainly cutting the grass, of which there is a lot but also with working parties laying the new ground level track. However, things are about to change as I have been hankering after a 5” gauge steam loco for some time and finally took the plunge today and agreed to buy a Sweet Pea which I am due to collect on Friday from Tiverton. More about this later, this is not my loco but is quite similar to its present layout. Eventually I plan to put a cab on mine and build a tender



To create space, raise some cash and remove the distraction they represent, I have sold 3 of my MZ motorcycles in the past 2 weeks. though I still have two left! I have also reorganised the workshop to provide a better layout and added some new equipment, a large bench drill in particular which will be a boon. The second lathe I bought last year has also been sold as it took up far too much room and offered no real benefits to my existing Clarke lathe. To make bench space I needed to find a new home for the Hudswell and inspiration struck in the shape of an old motor mower chassis. The result can be seen below and I can now tuck the loco under the bench but move it easily when needed.

The Sweet Pea is a design by a chap called Jack Butler dating from the 1980s, thousands have been built and it is generally regarded as an ideal entry to the world of live steam. The one I am buying was started in 1995 and is now substantially complete. It has been run successfully on air but the boiler has yet to be steamed so doubtless it will throw up some issues when I get to that stage. Not so much with the boiler itself which was professionally built about 10 years ago and has a current full hydraulic test. The issues if there are any will likely be with the pipework and fittings, but that will be part of the fun. It was found for me by John Hill and comes from a friend in his local model engineering club. John has viewed it and given his seal of approval, I have yet to see it apart from a couple of somewhat dire photos which give little info. Expect an update after Friday.

Monday 19th July 2021

An even longer gap in updating the blogg. Mainly because there has not been an awful lot to report. The new crankpin was a success and there has been no further trouble on that front. The Hudswell and the Hercules have both been taken to Westbury a couple of times as the track is now open to a limited extent; both performed well. I took both locos to Dave Brierley's house last week and had another good session though one hopefully minor problem occurred – more of which later.

Pete Deveral was there and took some more photo's as well as video which he has now edited and put on youtube – you can view it here - https://youtu.be/ypvDwd4aRJQ

All previous sessions at Dave's track have been run anti-clockwise and been trouble free. During tis session Dave wanted to For some reason the Hudswell has problems with one particular point when running anti-clock and kept de-railing. When run backwards it was fine and turning it round to run clockwise it was also fine – not got to the bottom of this yet.

You may notice in the picture above that I am using one of Dave's carriages as a riding trolley but its not very comfortable and my knees are under my chin. So today I modified my own trolley to make it dual purpose. The 'chair' simply lifts off when running on a hi-level track. Looking forward to testing it.

Wednesday 12th May 2021

An even bigger gap in updating the blogg. The pandemic lockdown meant that there was no prospect of taking the loco to Westbury to try it out so it had to go onto the back burner. In the interim I got involved in another project building electric pushbikes, that is documented in another of my blogs.

In the end I was invited to visit David Brierly who has a 5” gauge track in his garden towards the end of April. Rather nervous as David is a very experienced steam buff and I had no idea how well or otherwise the Hudswell would perform on a track. I am delighted to say that it worked straight out of the box. David’s track is ground level so I had to borrow one of his carriages as a riding trolley and once we had fabricated a suitable coupling it was away. Very gently to start with but after a couple of cautious laps I found no drop off in performce. So getting more ambitious, Dave’s wife Gina volunteered to be a passenger and this additional load seemed to make no difference. Finally we coupled up Dave’s ballast truck which is almost certainly equivalent to another heavy passenger. Still the loco performed well keeping up with Dave’s steam loco which was ahead of us on the track with some power in reserve. Altogether we did about 20 laps in blocks of 3-5 sessions and no obvious drop in battery power. Very pleased.

Checking over things back home, the battery took very little time to become fully charged. I did pick up on a couple of things. One of the crank arms on the gearbox showed slight signs of movement. I realigned it and then drilled and tapped a second 4mm grub screw. Though there was no sign of movement on any of the other crank arms, I decided to do the same to all the others just to be sure. There was also a rocking on one of the crank pins which if not sorted could have caused serious problems. The pin was marginally slack in the crank and the 4mm grub screw had come lose. I did not have a piece of silver steel to make a better fitting pin ay the time so I refitted it with some Loctite and it seemed ok. Last Friday (7th May) I was able to take the loco to the Westbury and give it a more extensive testing on their ¼ mile track. It went really well and we did a total of ten laps gradually increasing the speed and no apparent running issues but checking everything every 2-3 laps. Eventually I found the same crank pin was slightly lose again, so stopped running for the day.

Back in the workshop, I had by then made a new crank pin and this proved to be a tight press fit when offered up which is just as it should be. All the other pins and the connecting arms were fine. Reassembling, I found that the middle crankshaft was hard to refit but fortunately the shafts have yet to be welded up so I was able to adjust the length a tad and everything then worked fine. Even with a much longer period of running the battery was still well up at the end so I am pretty sure it will do at least a morning's running if not a full day.

Looking forward to a 3rd test.

Tuesday 2nd February 2021

Somewhat remiss, I have overlooked updating the blogg for near 2 weeks and there have been things to report. The loco body is now all back together and looking good.

As you can see I have created some nameplates to add a little more feature. These should be engraved but I have yet to find a suitable source. You can just about make out the glass panel fitted to the cab entrance. This has a picture of a driver stuck to the back, the idea being to hide the wiring. Still trying to figure out how to make this secure yet easily detachable so I get at things when necessary.

The push-to-make switches I ordered weeks ago turned up yesterday. Rather than just add them to the existing scruffy plywood back plate I decided to make a new one from ali sheet. The result is shown below and I can now operate all 4 sounds available and stop the engine (Or the sound it makes to be more accurate) from the 5 switches on the control panel. Even made up some labels so I know which switch does what. One thing I have just realised I overlooked is a dead mans switch. Not sure if that is a legal requirement, certainly all the other battery locos I have seen had them including Hercules. Something to ponder on.

Wednesday 20th January 2021

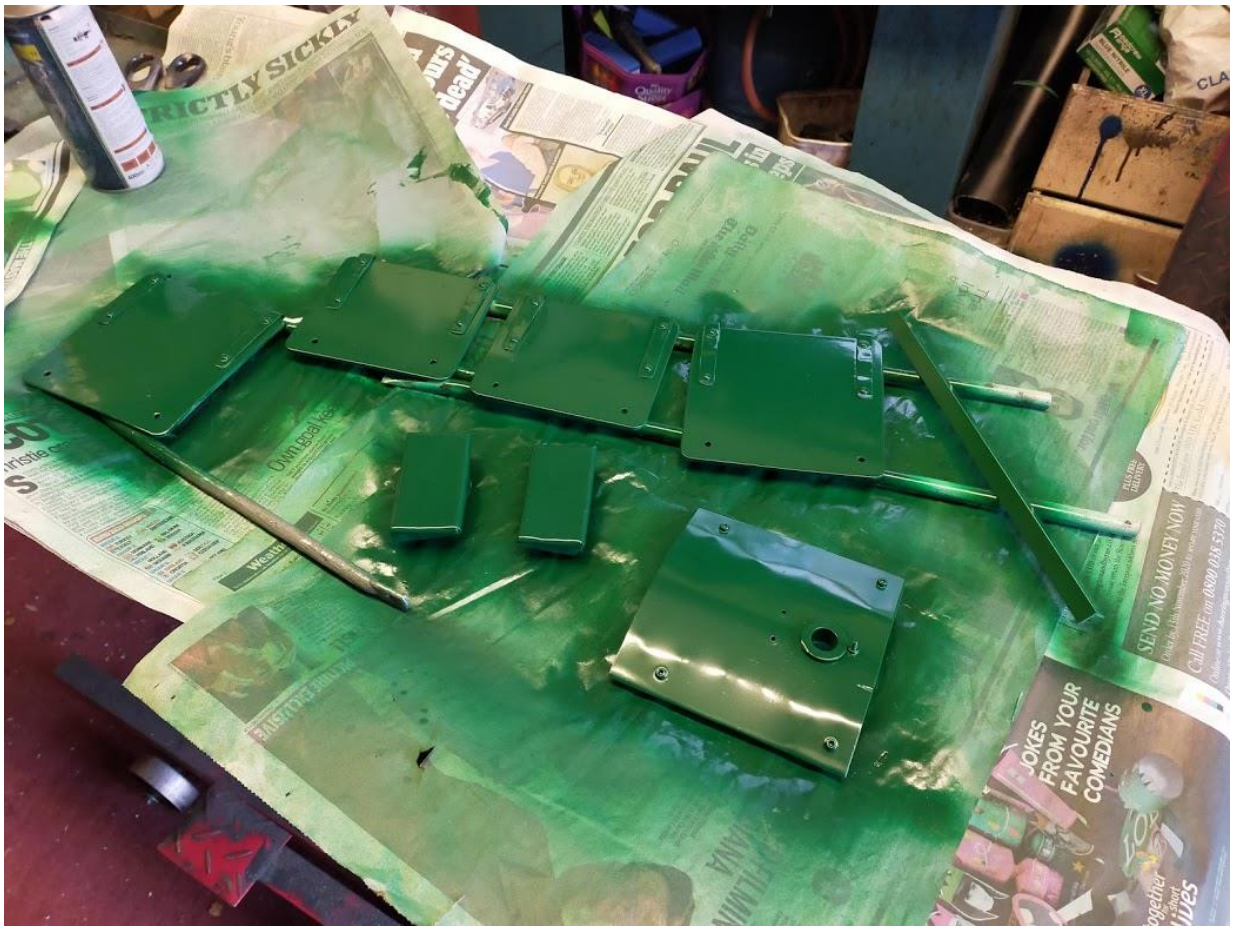
The weather has not improved sufficiently allow any more painting unfortunately so the body cannot yet be reassembled. In sorting out some motorcycle bits I did however find some electrical connecters which were ideal for wiring in the headlight. The light itself is fixed to the front of the bonnet so needs a quick release connector when the body is lifted to get at the battery (and to strip down for transport). I also found a small on-off switch in my 16mm loco spares so the wiring, switch and connector are now all in place; works a treat. I also found some 2.5mm s/s rod which is perfect for long hinge pins on the engine bay doors. The chimney and the horn have both been sprayed black. The former has a central band masked of which will be left shiny – similar to the prototype. The latter will have the inside of the horn painted red eventually.

All small jobs but steadily advancing the project

Saturday 16th January 2021

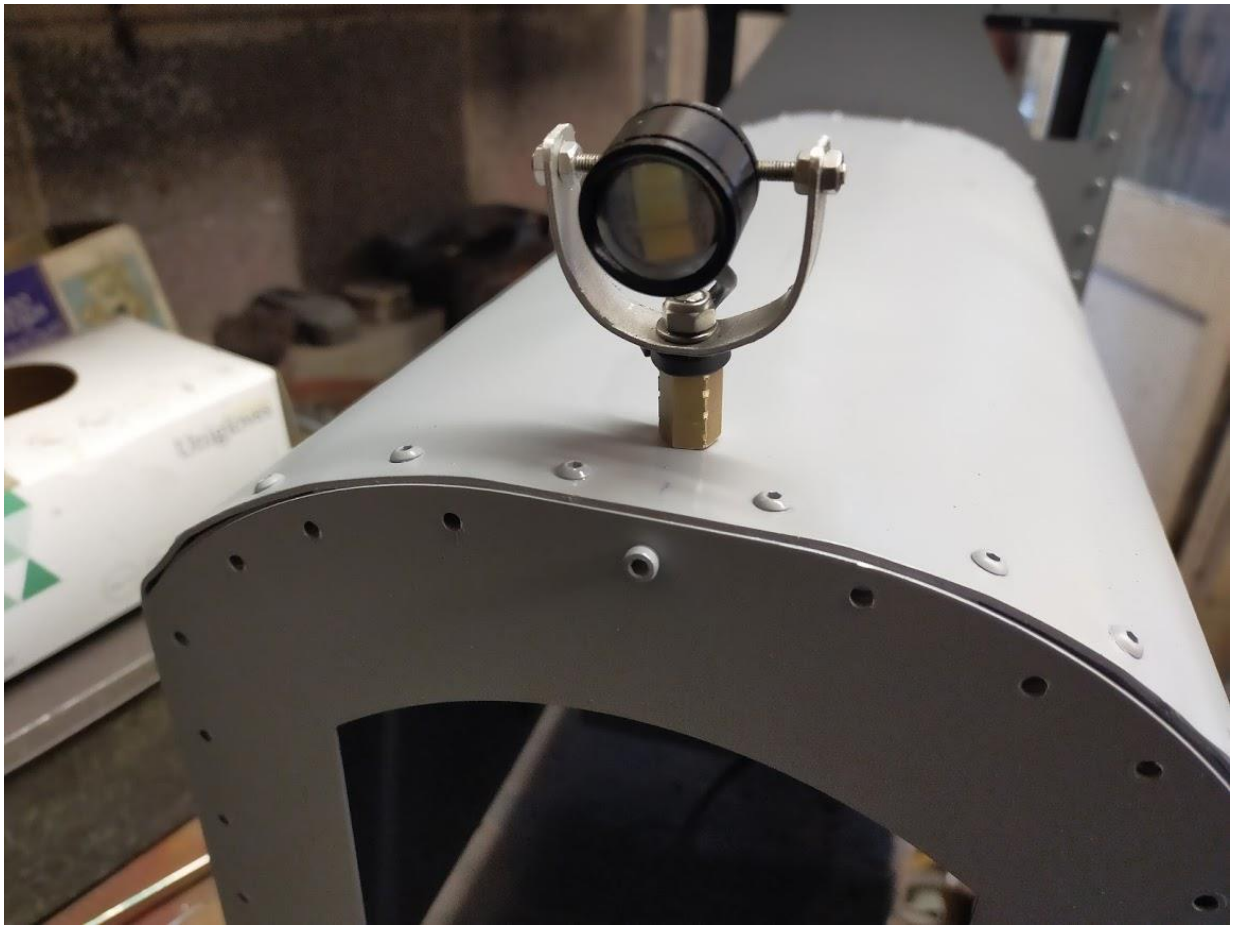
I had an abortive attempt to apply the top coat to the body on Wednesday but the conditions were poor and the paint bloomed so it was left for a couple of days and then rubbed down. Friday afternoon was sunny, if a little chilly and I was able to apply a couple of gloss coats successfully to the body and various panels. Today was damp and chilly again so applying a couple more coats will have to await better weather – possibly Sunday. However, it is looking quite good already. The camera has not produced a very accurate colour, it is actually a deeper BRG type of green.


Welcome
to
Postcutter


STRICTLY SICKLY
SEND NO MONEY NOW
JOKES FROM YOUR FAVOURITE COMEDIANS

Tuesday 12th January 2021

The longer screws and the motorcycle led running lights arrived last weekend so I have now fitted the correct style fixing bolts. The loco body has now been stripped down and given several coats of primer to prevent any rust. The top coat will have to await warmer and less damp weather. I have however made the lamp assembly for the front as can be seen in the photo below. Still have to figure out how to connect it to the electrics as they are all on the chassis and the light is on the removable body. I need a quick release 2 pin connector. I have also cut out Perspex sheet to fill in the sides of the cab. The idea being to stick pictures of the crew behind them to hide the electrics. They have to be easy to fit and remove though as I will still need access for thinks like the headlight connection:



Monday 4th January 2021

Yesterday I refitted the electrics and tested them – all working well. I found some micro switches and experimented with connecting them to the sound card so that I could operate some of the additional features of the sound card. Only had 3 switches so I opted for the horn, the guards whistle and the engine start/stop. They are somewhat crudely mounted due to their shape but I have ordered five better switches from eBay which will probably not arrive until end January. The project is now on hold until the longer screws and the headlamp arrive. Time to play with my bikes for a while.

Just to confirm my pessimism below, the Prime Minister announced on TV last night that we are going back into full nationwide lockdown from tomorrow for at least 6 weeks. Not that we will notice much difference as we have been in self-imposed lockdown since October as it was clear the pandemic was from under control.

If you click on the picture below you will select a video of the locomotive under power.


R/H

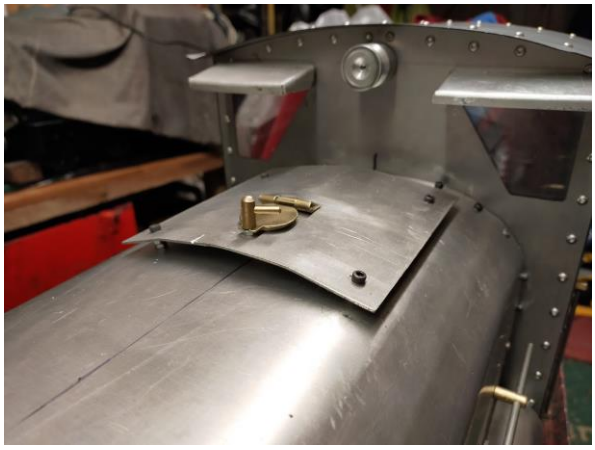
Saturday 2nd January 2021

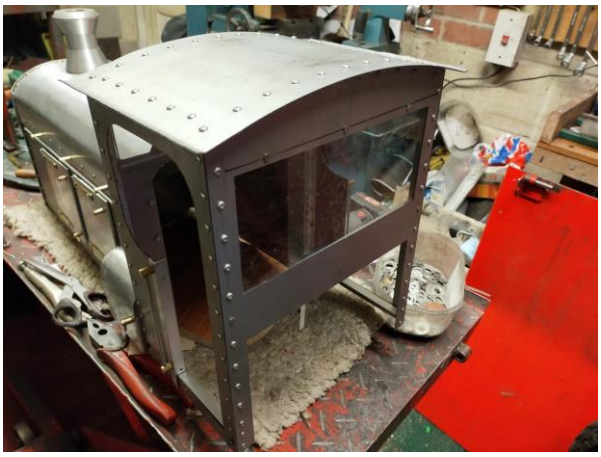
Well 2020 is behind and but not a year to want to remember. Nor is it set to improve much for several months more. They have started inoculations for the Covid-19 virus but supplies and capacity are both limited so even at age 76/77 its unclear when we are likely our jabs. The government was talking about being clear by Easter but frankly that seems to be more of Boris's excess of optimism over reality so mid-year is my guess. To encourage us to all stay at home, the weather has remained very cold so only short spells in the workshop interspersed with warm-up spells indoors. Anyway I have now made the tops for all 4 sand boxes, the rear ones were a bit trickier as they had to be angled. I agonised for ages on how to do it, the solution was ludicrously simple, just use the angle grinder with a thin blade and a steady hand. At the moment all they are all being painted ready to refit. I have also radiused the engine bay doors.

The body is pretty much finished an all that prevents me starting the painting is the arrival of some slightly longer 3mm bolts for a few places where the ones I have in stock are not quite long enough; mainly where three pieces of metal rather than two are being joined. I do have longer bolts but the head style is different and they look out of place. Of course I still have to decide what colour to go for, I am leaning towards Yellow, and whether to use powder coating.

Wednesday 30th December 2020

I made the filler cap on the top of the bonnet cover today. Quite fiddly but pleased with the result. The actual top is hinged and I would like to have hinged the fixing handle as well but doing that has defeated me for the moment. I have also glazed the two opening at the front and the top section of the cab rear; again quite pleased with the result. Just the tops of the sand boxes to fabricate and the dummy pipework. Grave danger of running out of jobs and having to start painting.





Tuesday 29th December 2020

Well I said it would be slow progress and I was right but at close of play today we have stanchions and handrails on both side and all the engine bay doors have working handles. Best of all, it was all fabricated out of scrap or materials in stock. I got close to breaking this 'rule' when I found that the 4mm screws needed for the handles were not long enough but after searching my various tines of nuts & bolts I found just enough to do the job. Last bit of fabrication today was to make a dummy horn that fits under the cab roof.

Next job of work is to make the filler caps for the sandboxes and the fuel filler cap that will fit on top of the bonnet, Unclear how I am going to make any of those items yet but I am sure inspiration will strike once I get started.

Monday 28th December 2020

Despite what I thought was extreme care fitting the engine bay doors, I noticed this morning that one of them was not vertical. It took me longer to put it right than it did to fit the door in the first place. It was the last one I did and I guess I was getting overconfident and slaphappy by then.

Today I have switched to lathe work to make a start on the handrails. The first set I made were for the left hand side of the cab and I used hexagon bar as that seemed about the right sort of size. It was also tricky because the rail holes need to be blind. Not overly happy with the final result but I learnt a lot and the right hand set look much better. However, I was not convinced the hex bar would look right on the bonnet stanchions so I tried 5/16" round bar. It is trickier to drill the rail holes but does look better. For the rod I used some old 4mm tent pegs which when straightened out were just about the correct length. Having mastered the basic manufacture of the stanchions, I now need to improve the appearance by radiusing the outer end and waisting the inner end. This is going to be a long job but done right it will make the model look much more professional.

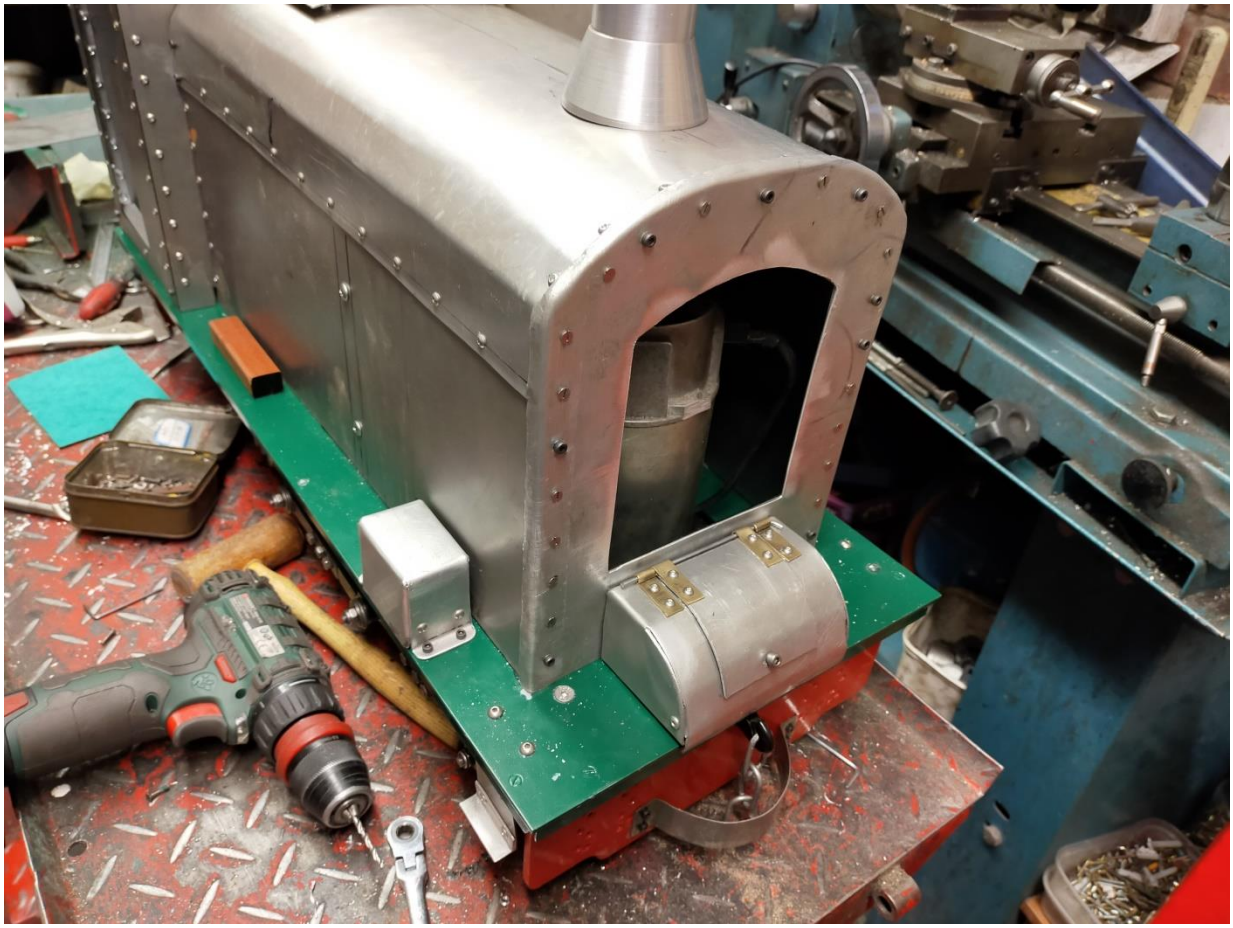
Sunday 27th December 2020

Back in the workshop for a full day today. I have now made the 4 access door on the side of the bonnet complete with hinges. I still need to radius the corners and make some realistic looking door handles. They are on the list of things to make on the lathe. Not easy to see in the picture but the cab roof on the left hand side has beenangled upwards slightly as shown in tne photos of D609. I imagine it's a form of guttering to keep the off the crew.

Thursday 24th December 2020

Christmas Eve so unlikely I will get much if any more time in the workshop until after Boxing Day. This haves moved on well if slowly. Both front sandboxes are now made and installed. Still need lids and some dummy pipework but the former will be made on the lathe and it will be easier to tackle this and a number of other lathe related tasks together.

I had a bit of a breakthrough on hinges today when I found the remains of an old brass letterbox flap. This has the ends coiled to take a rod so all I needed to do was cut strips to make realistic hinges. I practised by by making the lid for the box at the front of the chassis. They should look very realistic when used on the side doors. I have also made a front piece for the radiator which is oversized allowing it to be shaped round the front of the bonnet. In due course I will sandwich the radiator grill between the two pieces but for now I need the hole to give access. This was job I have been agonising over for a while and I think it has turned out well.



Tuesday 22nd December 2020

Full day in the workshop today but now I am down to the fine details, not a huge amount to show for my efforts but satisfying progress. The pictures shows the front box which still needs it's removable cover, one sand box and two pieces of wood at the back which locate the body and stop it sliding around. It should now be quite secure yet easy to remove and replace. Tomorrow hopefully I will make the second sand box and perhaps the front box cover. On the real loco I imagine thos box gives access to the gearbox or transmission. It's a common feature on all Hudswell's of this era. I have been giving some thought to the handrail stanchions. You can buy them but they are around £15 per set and I would need two lots. I reckon I can make them from ¼" or 5/16" brass rod. Would be very satisfying if it works.

Sunday 20th December 2020

This is the body as at close of play today. Still a lot to do; much of it fine detail which will take forever but it's the little things that make the difference. The top cover on the bonnet needs to trimmed back a little as it should not butt up to the cab front. It also needs a largish filler cap, not sure what its for – could be to take on diesel.

Saturday 19th December 2020

Not at the stage where I want to take a picture but I have made good progress with the bonnet today. I fitted side rails and a top rail to stiffen the whole assembly and allow me to apply force to bend the aluminium sheet. This was bolted to the front and rear supports just at the centre point which is basically flat. Then it was a question of getting the sheet shaped to the shallow curve at the top. When I got closer to the edges the bend becomes more severe and another method was needed. I clamped the sheet between two pieces of hardwood at the point where I needed a bend and then mounted the assembly in the big vice. This provided enough stiffness to put a permanent bend in the sheet instead of it just springing back. By shifting the sheet in the clamps I was able to get the correct curve and then the fold for the sides. It was slow progress as I had to keep removing the clamps to check the fit but eventually it was close enough. I debated whether to leave my side rails in place but decided against it for various reasons. It was a good decision as the assembly is quite strong enough now that the top is bolted front, rear and one side. The other side will get done tomorrow as it has been a long day.

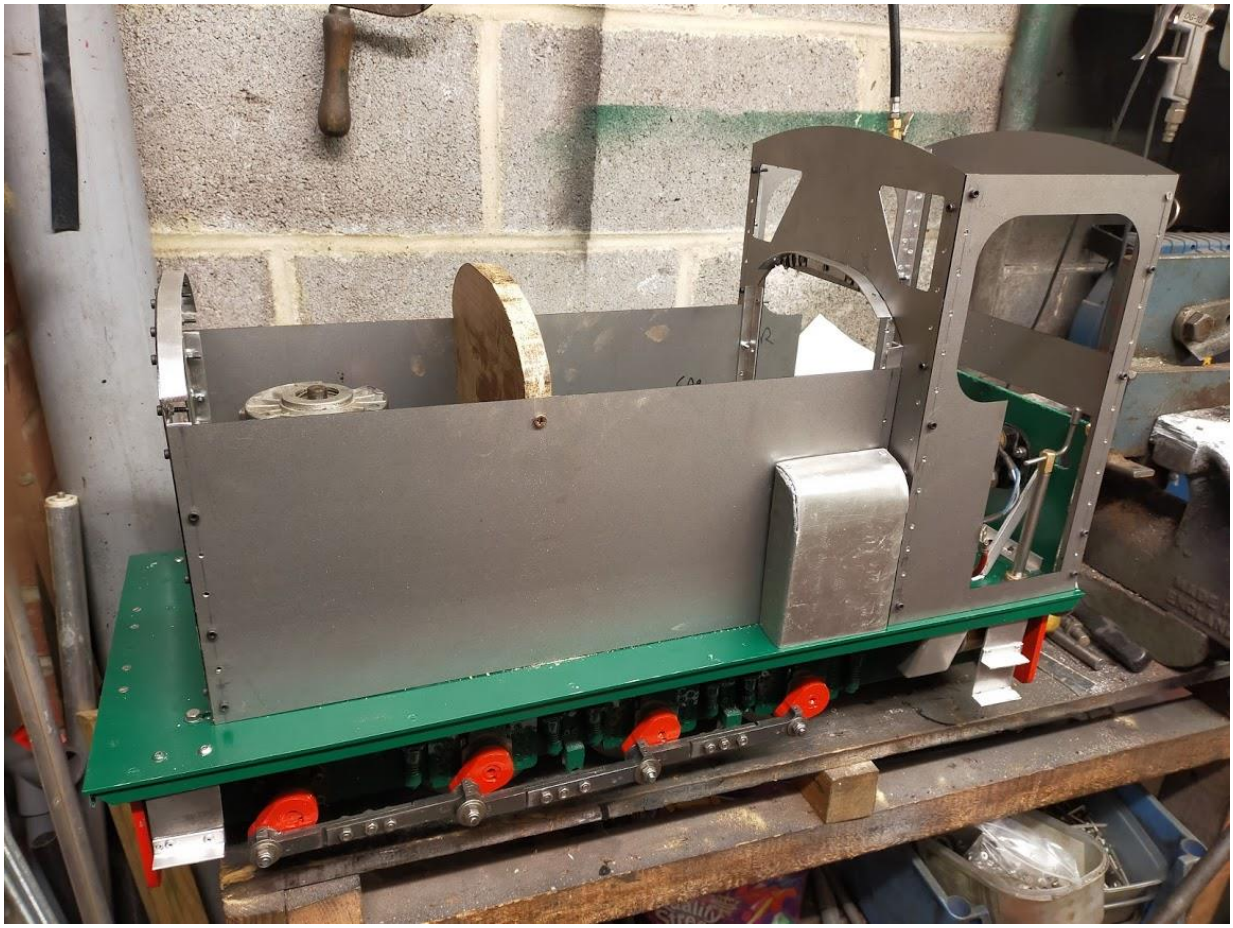
Friday 18th December 2020have proved ideal.

The pack of 300 3mm by 5mm length cap head screws arrived on Thursday and I have already used close to half of them. The cab is now close to being finished. It has a roof and the sun visors over the windows. There are a few other of things I have in mind to improve it but they can be added at a later date. Time now to move onto the big challenge – the bonnet.

Very pleased with the cap head screws, they look very much like rivets from even a few feet away.

Wednesday 16th December 2020

The body shell is coming on well as can be seen from the photo. Please to say that I have had to alter very little to get it to fit (so far anyway). The next stage will be a bit more tricky, I have to bend the cab roof and decide how to secure it. This is a single quite shallow curve so should be (fanous last words) fairly straightforward and I will use the .9mm steel sheet cut for me by KAM. This will so stiffen up the whole cab area as its still a bit wobbly at present. More difficult is bending the bonnet to shape as it needs to be an inverted 'U'. I have heard nothing from KAM about supplying the wrong thickness so I have cut a piece of the aluminium sheet kindly donated by Simon to size and will use this. I have made and fitted the support brackets at each end and a substantial piece of wood in the centre to help hold the shape. Once its folded and riveted, the piece of wood will probably be redundant though it does perform a useful function in locating the body fore/aft. Quite a tiring but rewarding day.



Tuesday 15th December 2020

Some encouraging progress with D609. I have fabricated and fitted the two rear sandboxes to the chassis using some of the ali sheet Simon kindly donated. I still need to fit dummy pipework and to figure out how to include the lids which need to be angled. Inspiration will strike and thay ecan be added later. I hav also remade the engineers step which now includes some simulated chequer plate (parcel strap actually). Not sure exactly what function the odd shaped box on the top of the chassis fulfils on the prototype but its made and ready to fit to the body in due course:

Construction has now moved to the main body shell as that needs to be substantially assembled before I can fabricate some of the other loco ancillary items. Not too difficult as the parts are already cut to size and shape. I am using the aluminium angle for the corner pieces so its basically a question of carefully lining it up on the panels and drilling loads of 3mm holes. Initially it's being bolted together but the majority will be replaced with rivets when they arrive from China. Slow progress but no snags so far and quite rewarding.

Saturday 12th December 2020

Nothing from KAM yet but it will doubtless take a while for them to respond and not really urgent. I have just spoken to Simon B and I am going to collect aluminium sheet, bench shear and jigsaw tomorrow morning. I want to try and get all the tools and materials in the workshop so that I have everything to hand once I start.

Another pleasant surprise, John Hill has found some bronze casting of sandboxes which are intended for a 7.25" gauge loco, far bigger than anything he has any plans to deal with. D609 of course runs on 5" gauge track but its actually a narrow gauge loco design so everything is scaled up to suit. We checked the measurement of his boxes and they are a very close fit to the plans I drew up for the front boxes. He is going to send them up to me. If they are suitable, that's two less things I need to fabricate. Good to have friends.

Thursday 10th December 2020

I collected the body panels from KAM yesterday afternoon. They have made a nice job of cutting out to my patterns. Only slight problem is that they cut the cab roof and the bonnet top out of 0.9mm plate instead of the thinner 0.7mm plate specified. I can probably cope with bending the cab roof as it's smaller and only has a shallow curve. The bonnet however needs to be a U shape and is 400mm

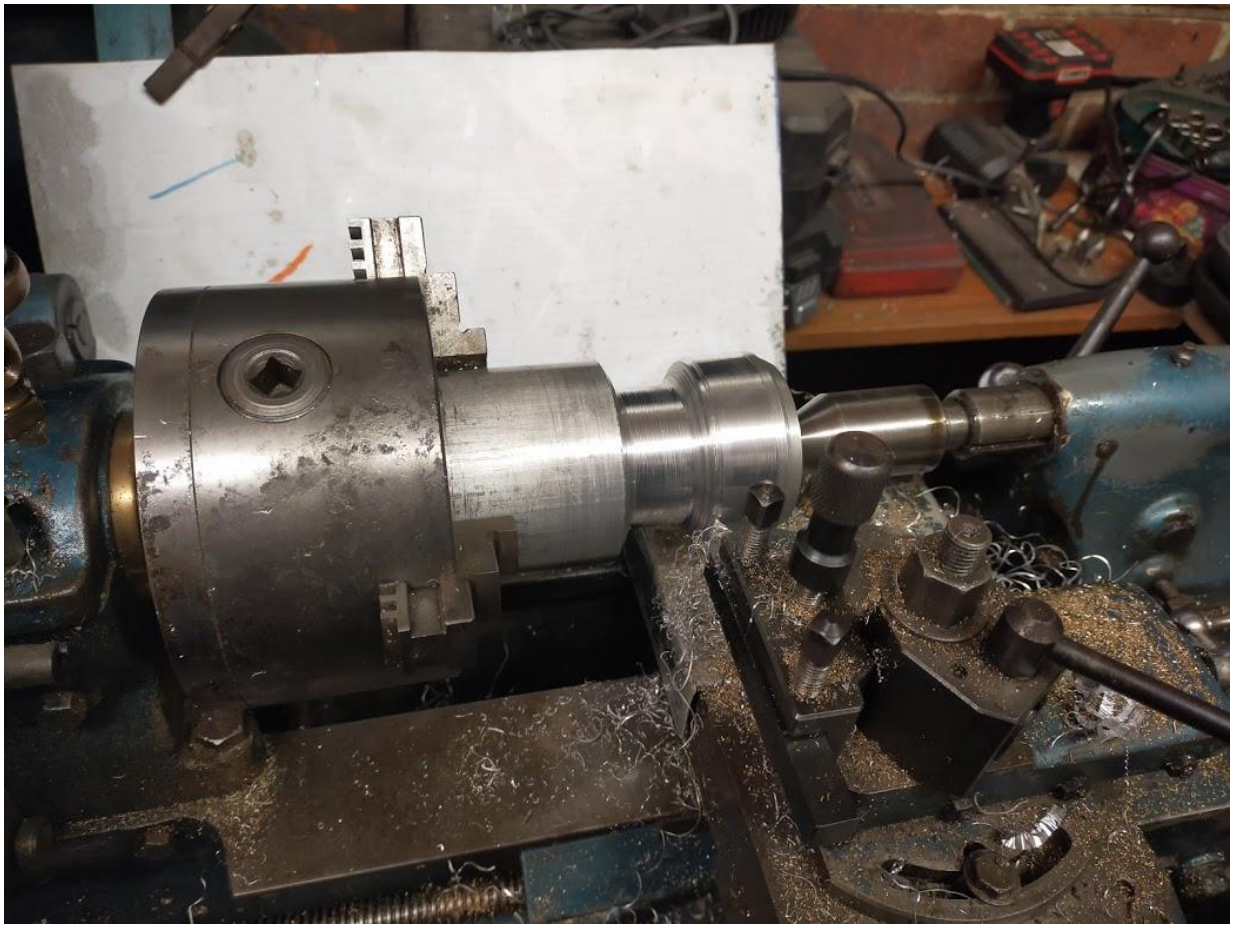
long so the extra thickness is worrying. I have gone back to them about it and await their answer. No rush anyway as the bonnet will be the last thing fabricated and I cannot start work until the Honda is finished and out of the workshop.

Wednesday 9th December 2020

The chimney is now finished and I am quite pleased with the result. There will be some final shaping of the base to fit the profile of the bonnet when that is fabricated. Hoping to hear from Simon shortly about the aluminium sheet he has offered for body panels.

Monday 7th December 2020

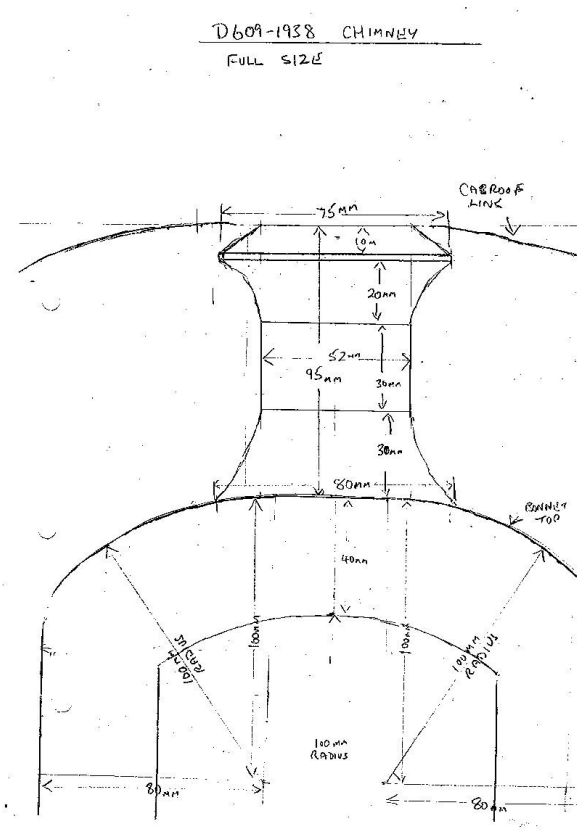
Started machining the chimney. I am using dimensions from my drawing below scaled down by 65/75 to reflect the smaller diameter. Slow going but this is where I got to by tonight:



Doing the easy bit first, not sure yet how I am going to do the concave curves top and bottom.

Saturday 5th December 2020

A few small advances in the D609 project. I have ordered enough 3mm nuts & bolts to screw most of the body together. However, the prototype was mostly assembled with rivets and I have been investigating this option and I think it will be feasible to do a mix'n'match with rivest where they are easy to install and screws where they present a problem. As both will be 3mm diameter they can be swapped as necessary. Strength is not really an issue so a large pack of ali rivets is on order from China and I have borrowed a set of rivet snaps (basically specially shaped punches). So all should be ready when the body panels are delivered.



Another thing that has been exercising my mind is the chimney. It is a mammoth thing in relation to the size of loco and is clearly based on steam engine design (Hudswell built steam locos as well as diesels). It must be primarily decorative, its far larger than a 74bhp diesel engine would need for its exhaust unless it fulfils some other function as well. Nevertheless it is a significant feature of the D609 and my model will never

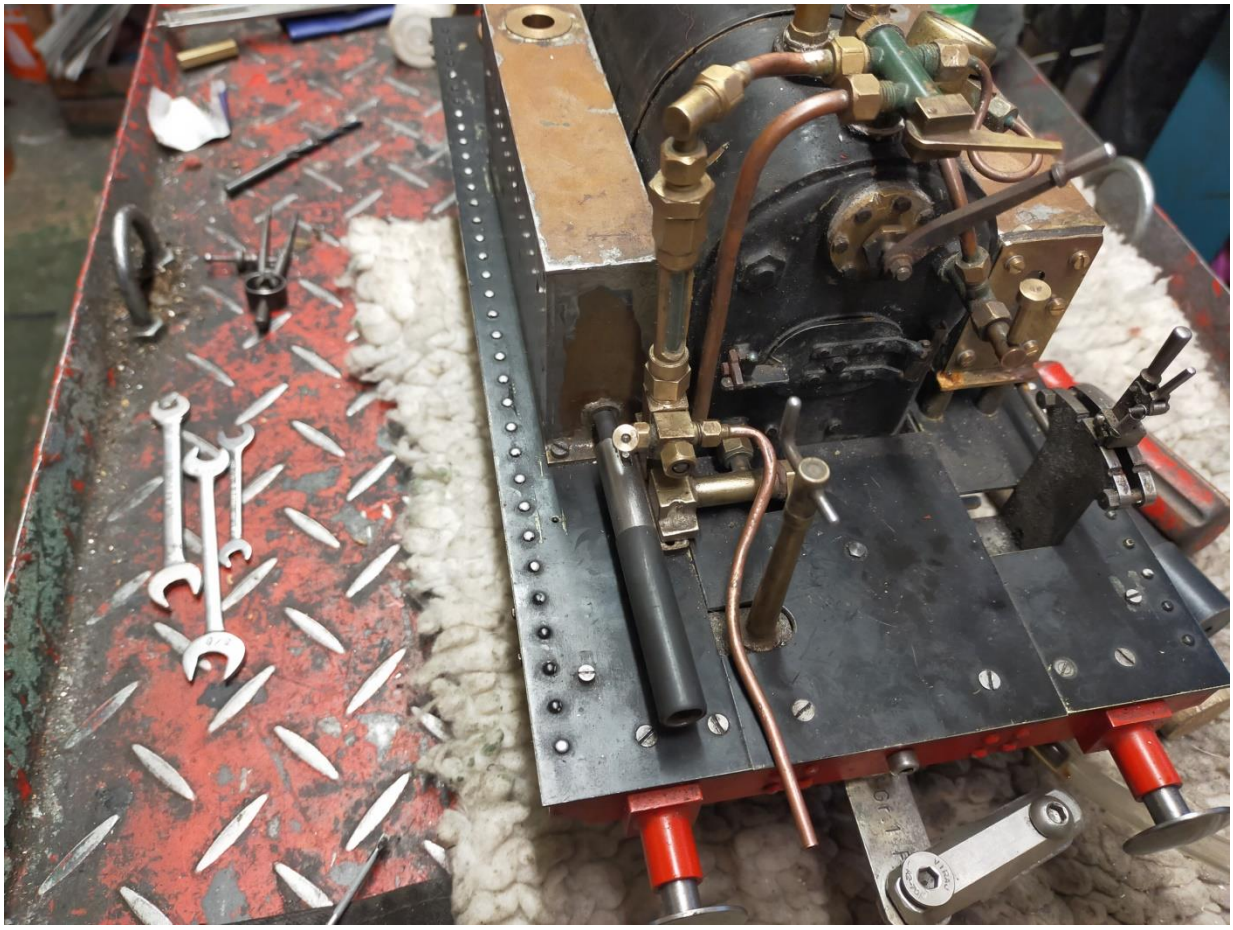
look right unless it has something very similar. As a start I made a scale drawing so I had the dimension. Just as well because I was amazed to find it is near 100mm tall and 80mm wide at the bottom.

There was nothing remotely close to this size in my scrap metal box so I spent a while on the internet looking at aluminium and plastic round stock. But the price was very high and the amount of waste would have been formidable. Discussions with John Hill identified using 2" copper pipe as the central core and making just the top and bottom tapered sections in something else. I couldn't find any copper pipe but I did find a 2" steel pipe which looked promising and I was also contemplating making the whole thing out of hardwood, but finding a piece 3" in diameter was no easier than suitable metal. However, talking over the matter with my friend Terry has produced from his scrap metal bin a piece of alloy bar 65mm in diameter and 120mm long. Not quite the perfect size but close enough and best of all it was a gift. The next problem is figuring out how to machine the chimney shape on the lathe. I won't make a start until I have a clear idea how to do it and I may well do some experiments on smaller diameter ali stock before tackling the big one.

Saturday 28th November 2020

The water gauge assembly has now been rebuilt as shown in the picture below. The new location made it difficult to plumb the drain pipe neatly as it fouls the firebox door if you try to take it through its old position. I took the easy way out for now pending a better solution.

I had a good look at the mechanical water pump system and could not find anything obviously wrong with it and no easy it either way to test. I don't really want to dismantle Titch any further for the moment as I have rather lost enthusiasm for it. Even if I could get it working properly it will never be more than a toy as it's too small and has too many limitations for serious running. It has taught me a lot and wet my appetite for steam but today I made the decision to put it back together and keep it on the shelf as an ornament. Thankfully I managed to find all the pieces and even all the nuts bolts and screws. If I am patient a nice 3.5" gauge loco will come my way but it will have to be a runner, not a project. Feelings of guilt concerning John Plowman and perhaps I should offer it back to him but then he did nothing with it for over 50 years and at least I have tried.



I have made a simple plinth for the wagon I made last winter and together they make a nice display on the window ledge in the conservatory. So it will constantly be in view and I am sure eventually I will try again to get it steaming properly.

Friday 27th November 2020

I have added a couple of crew steps to the front of the loco and that is about as much as I can do for now. I need the revised quote from KAM and confirmation about collecting some aluminium sheet before I can resume work on D609. So it's on the shelf for time being.

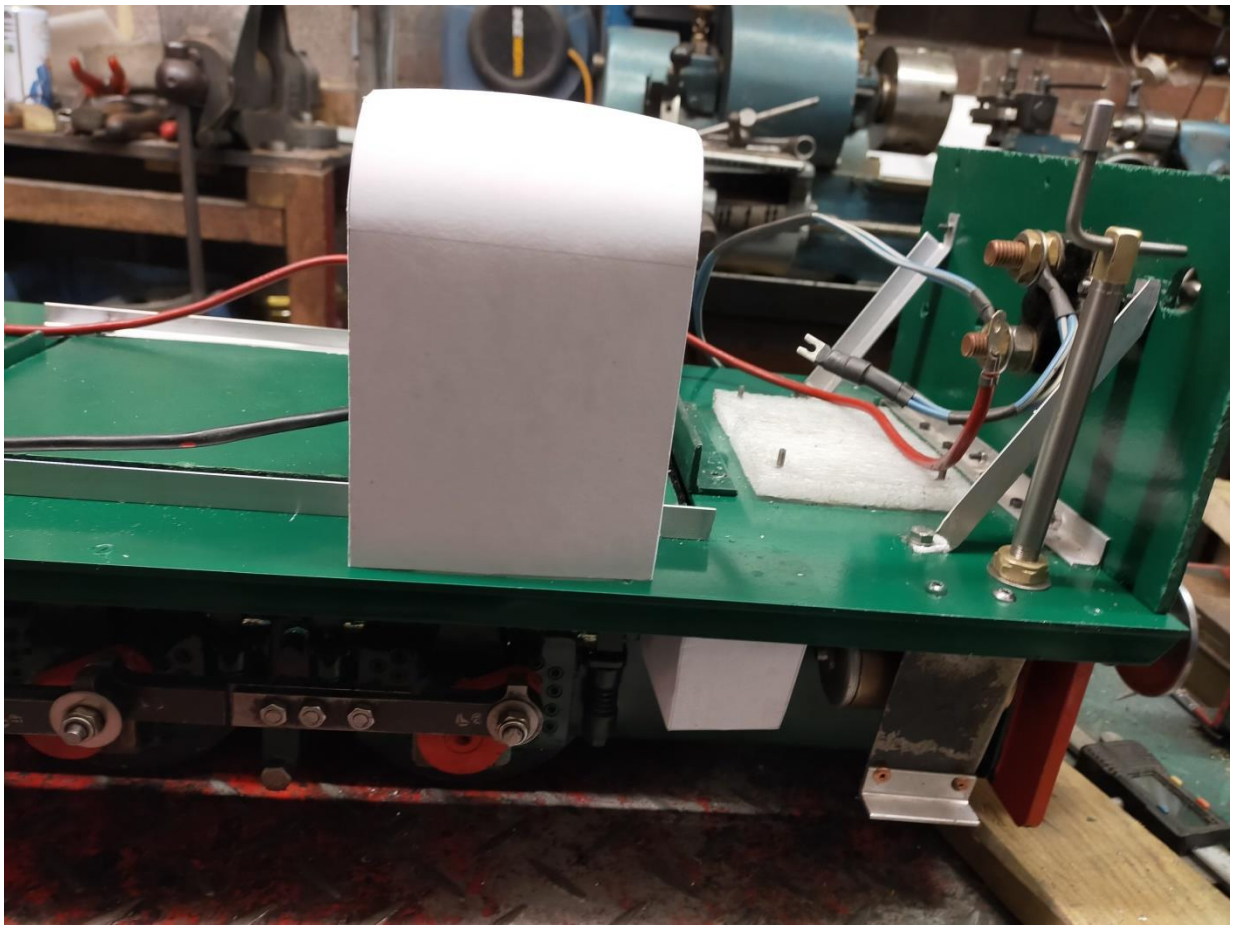
On the workbench now is Titch my steam loco. Last time we fired it two faults emerged. The first was the water gauge blow down valve which is in the wrong place and tends to empty the boiler rather than clear the gauge. Having studied the problem, I have come up with a solution and made a start on redesigning the pipework. Quite good fun working with brass again and my new lathe has a 4-jaw concentric chuck which is useful, not to say essential given that I am working with square material. Hopefully by tomorrow I will be able to post a picture of the modified assembly.

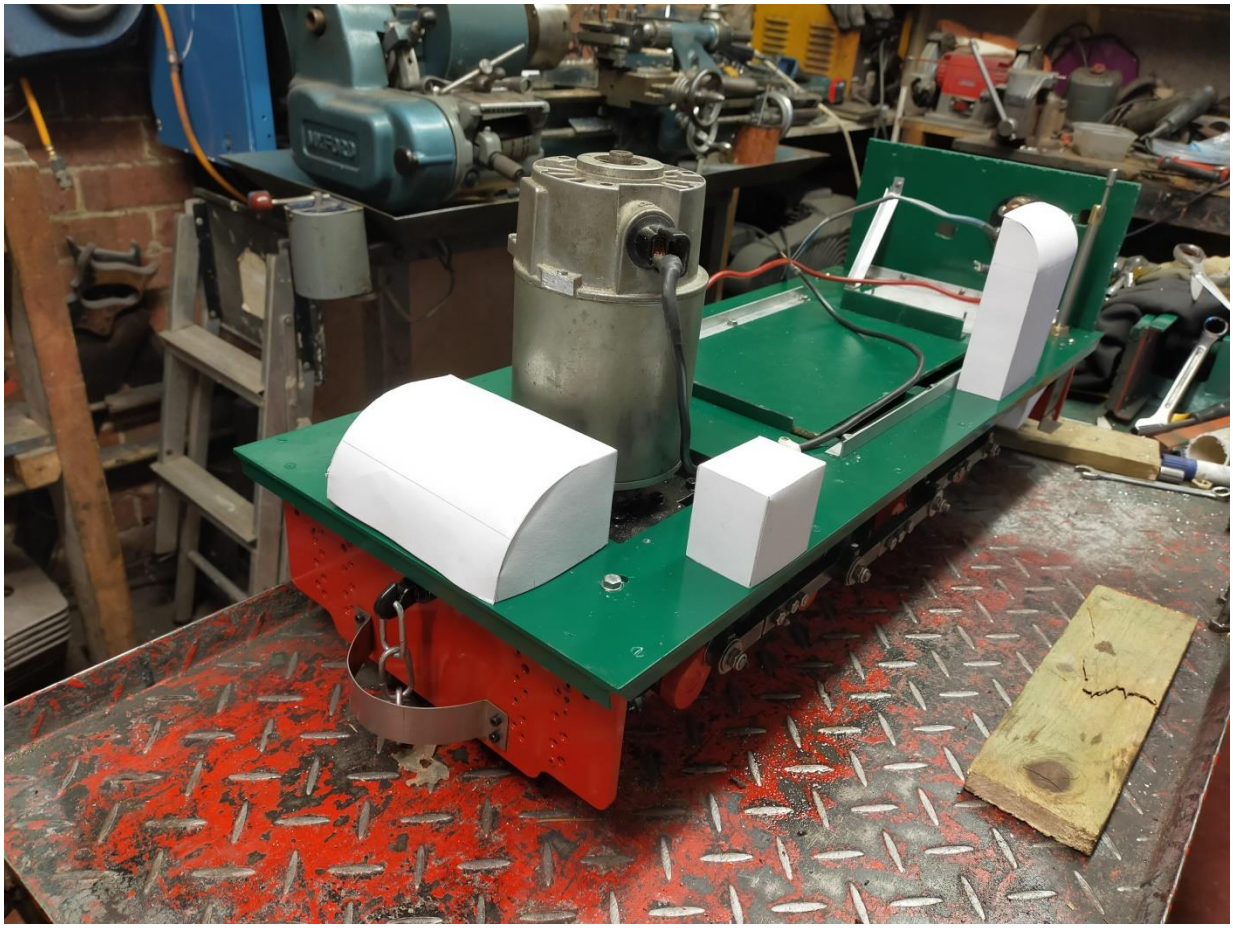
The other problem will be trickier. John does not think the crank driven water pump is working, we had to drop the fire in a hurry when the boiler started to run dry and we could not get the hand pump working fast enough. This is not an area I have worked on as yet so it will be trial and error. Big problem will be testing it. I would rather not resort to compressed air so I need to think of a way of driving the wheels externally – a sort of powered rolling road like they use at bike race meets,

Thursday 26th November 2020

The pictures show the ancillary bits now fitted and the cardboard templates I have created for the various sandboxes etc. I am rather pleased with my brake lever mechanism. The cylinders are old BSA phosphor bronze fork bushes with end caps made from items in the scrap tray. The boxes will need to be made in aluminium. I believe I have found a source of this which will enable me to move to that stage of the project whilst waiting for KAM to cut the body parts – there is a 20 day delivery from placing order so it could well be Christmas before I see them. Not that there is any hurry. I am studying

the pictures to see if there are any other fiddly bits I can add to the chassis. The mountings for the electrics can be seen but they will not be fitted until the last minute – too easily damaged.





Wednesday 25th November 2020

Funny how the small things take the longest time. In two days I have only managed to complete the steps for the crew to get into the cab, The buffer arrangement at the front and the two cylinders that sit under the cab. Still don't know what they are for, possibly vacuum chambers for the brakes – must ask John. One of the cylinders is mounted, the other will be the first job tomorrow. In fairness, a lot of my time has been spent making drawings for the sand boxes, the flat box under the radiator and the box on the LH side of the cab. Each has then been made up in card to test the design. As you might imagine some had to be drawn and made up more than once. Better to waste cardboard than expensive metal sheet. However, I now have a good set of plans, what I need to source is suitable material to make the real thing.

This evening the quote from KAM arrived, not cheap, but less than I expected it to be. There are a couple of things I need to clarify and I need to add the radiator front to the list so the quote will go up a bit but I am very tempted to let them have the job. It will look so much better done properly. Things are progressing nicely.

Monday 23rd November 2020

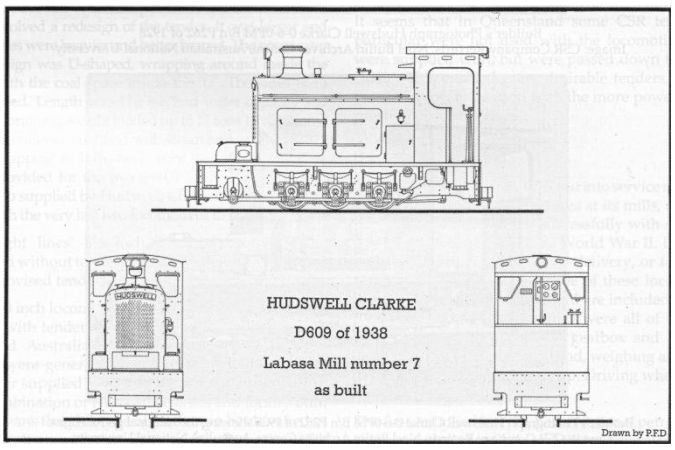
A small amount of progress today. I have cut out the formers that will be used to shape the bonnet roof and one will be used to shape the radiator in due course. The chassis floor pan has been removed, cleaned up and given two coats of primer. Tomorrow it will get a green top coat. I also modified the brackets that locate the battery to lower it slightly to give more clearance. Final job was to replace the connecting rods and thankfully they went straight back on without any need for adjustment. With a battery temporarily connected it all worked fine. One way or another it is likely to be a while before I can start construction of the body. However, there are some ancillary items on the chassis that I need to fabricate. Above the floor plan there is the front buffer arrangement, the small

boxes at the front, the inspection hatch in front of the radiator and the cabinet by left hand side of the cab. Below the floor there are steps for the crew, what I think may be the sand box and a circular tank under the cab. Not sure what that is for. Inside the cab it would be nice to make an instrument binnacle and the brake plinth. Nice picture of the loco in operation in Fiji, not sure I want to paint mine yellow though!

Labasa Mill number 7 an 0-6-0DM supplied by Hudswell Clarke worked from this small out-depot at Wainikoro - c.1957.
Image: Peter Hodge

Sunday 22nd November 2020

I have completed the mockup of the body and it was sufficiently strong to lift off in one piece.

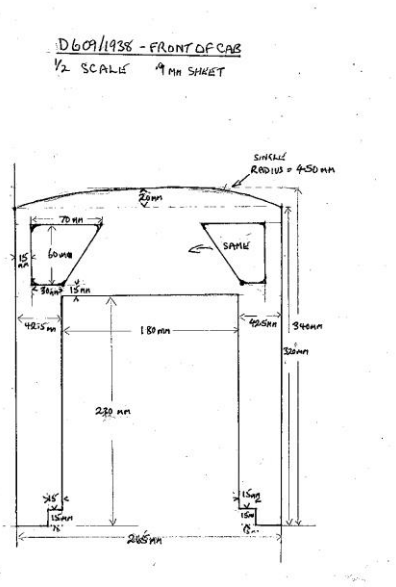


Subsequent to that stage, I received a works drawing of D609, very small scale so not really useful for taking measurements, but it does give front and rear views, as a result of this I will need to revise the cab rear section.

This is how the body looked before I dismantled it to take measurements for the scale drawings.

The drawings have now been produced, took me all afternoon as it's a long time since I did any technical drawing but it was quite enjoyable with the added bonus that I finished a task with clean hands! This is a sample:

From this I was able to work out the amount of steel sheet I will need and have asked KAM for a quote. I also sent them the drawings laser cut all the parts.



Friday 20th November 2020

Steady progress today adding side skirt on one side, then ran put of 3mm nuts so the other side will have to wait. Dismantled my original cab which was based on the Junin layout and remade it in the D609 style which but a little taller. I bought 8m of ½" aluminium angle recently and this is proving very useful for all sorts of tasks. The pieces holding the cab together will eventually be re-used when it's remade in metal. Doesn't look much but it has taken me all day.

The idea is to try and get all the work needed on the chassis floor piece so that it can be sent for powder coating. Second priority is to complete the body design so that final drawings can be produced. These will be sent to KAM for an estimate which I suspect will be eye watering. However, I may have not have a choice as my skill in cutting out neatly even in hardboard if pretty poor.

Thursday 19th November 2020

KAM have made an excellent job of cutting the loco floor and it fitted straight onto the chassis just like the cardboard template I had originally made. I was a bit concerned whether I had made the hole the motor large enough to allow the cables to be threaded through but that was also fine. However, lining up all the existing fixing holes in the support brackets has been a time consuming process but is now done.

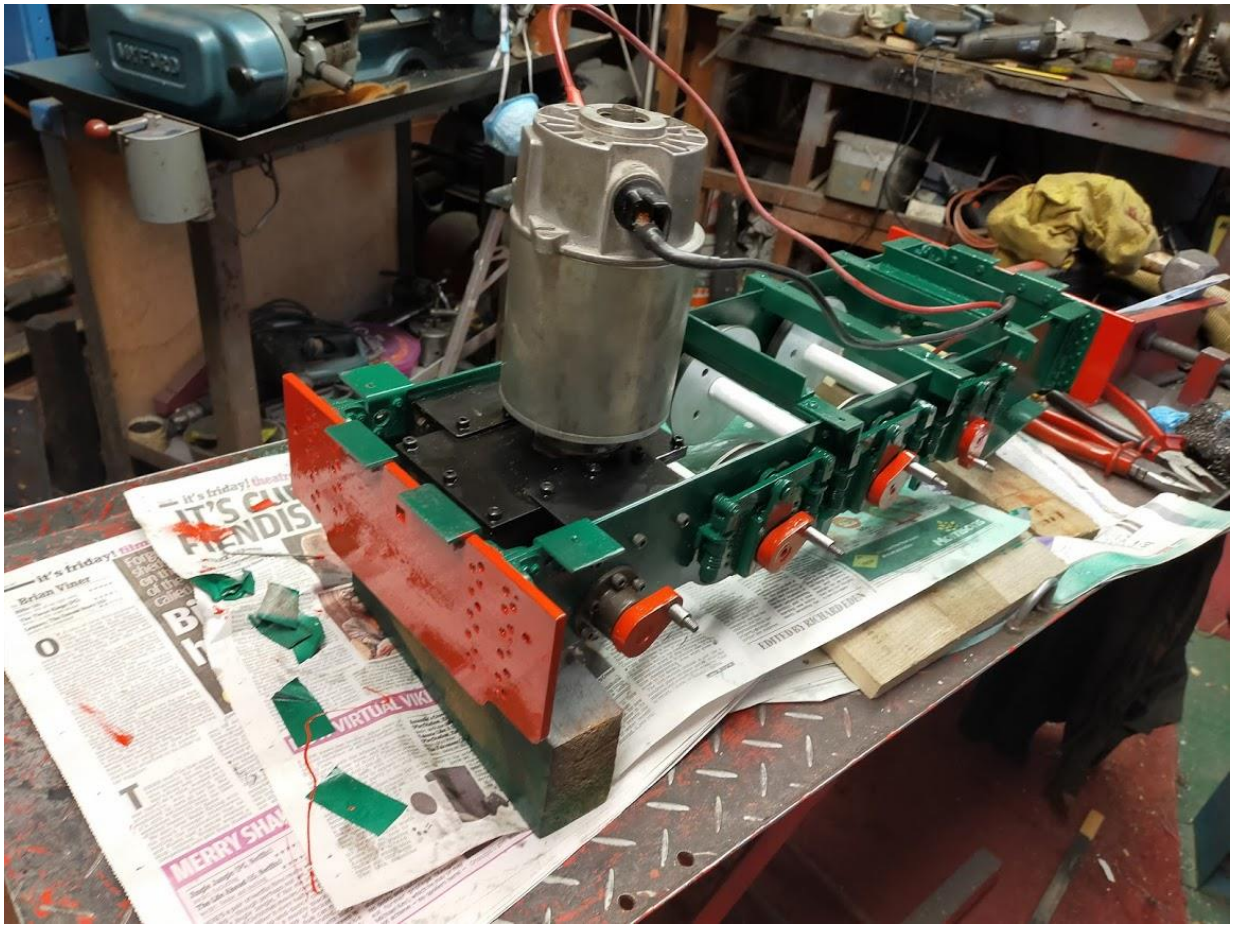
I have added a couple of brackets on the top side, the purpose of which will become clear later and I have added a plate at the rear which will support he switches. At the moment it's a hardboard template but eventually I will make it a metal item. I have also been experimenting with the cab layout as I have now settled on the prototype to be used as the basis for this model. This is to be the Hudswell D609/1938 which was a 2ft gauge diesel loco built for the Colonial Sugar Refining Company Ltd in Fiji. It spent most of its working life at their Labasa plant and was scrapped in 1980. Its not the most exciting diesel loco but it's the only one I have found which has front drive, inside wheels and external springing very similar to that on my model.

Builder's Photograph Hudswell Clarke 0-6-0DM B/n D609 of 1938
Image : Hunslet Archive, Statfold Barn, UK

I can get quite close to this design but the location of the electric motor means that the radiator will be much closer to the front. I have refitted the front buffers but may remove them in favour of the rounded buffer style shown in the picture. This is the only picture I have found so far and I could do with others showing different view. No idea what the other side or the rear looks like and the flap on the top is a bit of a mystery as well.

Tuesday 17th November 2020

I found a nearly full of green paint which was pretty much the colour I had envisaged so the chassis was duly painted on Sunday and left for a day to harden. I also sprayed the suspension components. Today I reassembled everything. Getting the suspension set up was a nightmare. Even though I had ground all the springs to the same length, I simply could not get it lined up properly as designed by Simon. Not sure why as I manged it when I first got the loco though it was all very makeshift and the cross beams were all over the place. I think the problem is the springs are too strong and still not the correct length. In the end I junked the idea of the cross linked arrangement and suspended each axle separately. Possibly making the links rods longer would help – but that will have to wait for another day. Doing it this way I was able to adjust the spring rates and make sure it was level where previously it had been nose down. Final part was getting the motor back in and lined up, a job I was dreading. In fact it turned out easier than expected. I have not yet fitted the connecting rods as I wanted to paint the fly cranks and the buffer beams red first. The Buffer housings have also been painted (black) and will be refitted once the red paint is dry.



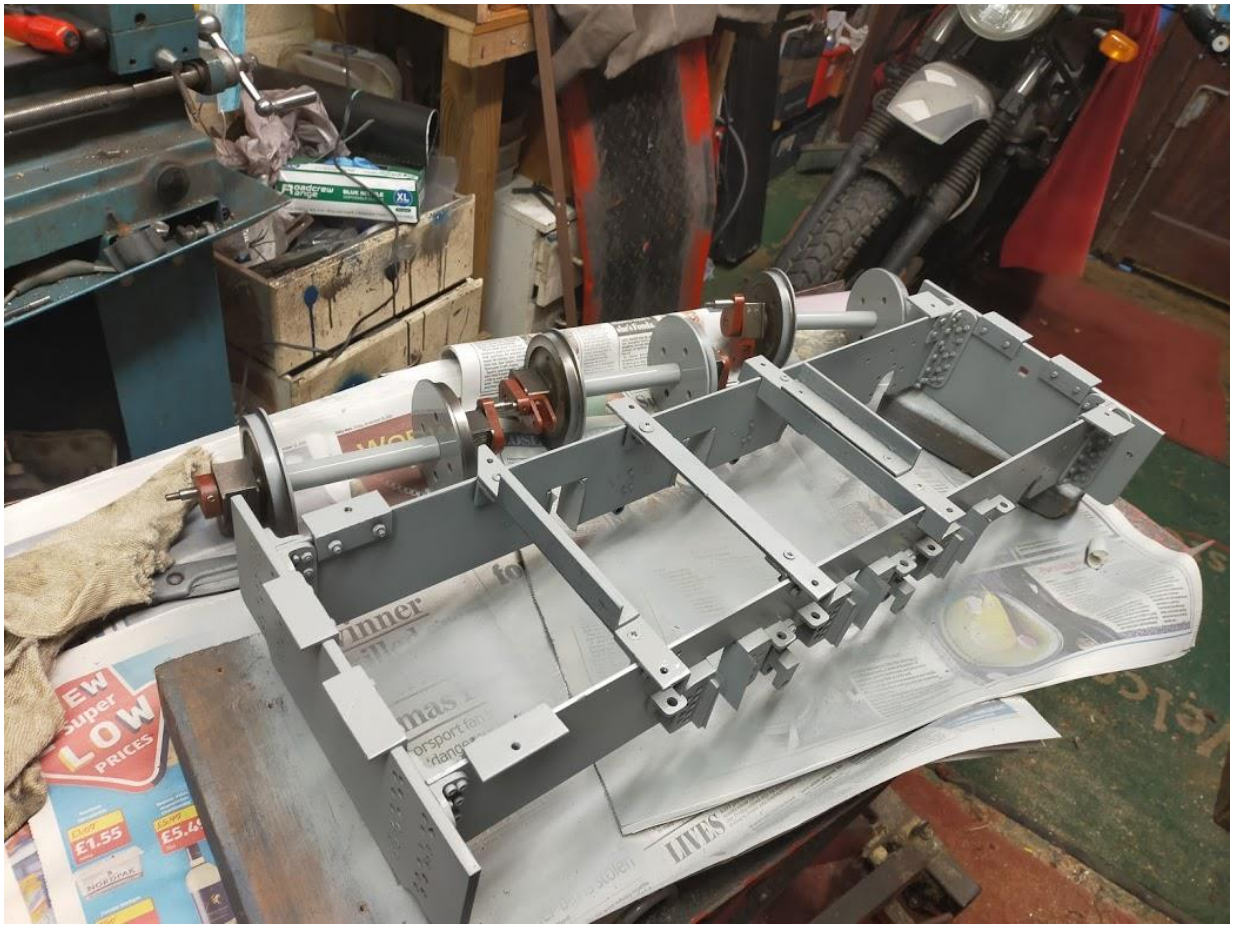
I have just had an email from KAM engineering to say that the loco floor is ready for collection so I shall be on their doorstep first thing tomorrow morning. This will be a seminal moment as once that is in place I can start thinking about the bodywork.

I am now avidly studying pictures of a variety of diesel shunter locos to find something close to the layout of this model. Strangely, apart from Hudswell-Clarke most other manufacturers seem to have opted for a rear jackstaff drive layout which limits my choice considerably. Though having looked at the chassis again, I can see no real reason why it should not be set up the other way round. The only slight problem is the motor would sit in the middle of the drivers cab. A thought anyway.

Saturday 14th November 2020

Another thing I had noticed a while back is that there only a few blots fixing the main side members to the buffer beams. The angle plates have been extensively drilled and in some cases tapped for further bolts though some did not fully line up and I was unsure of the tapping size used. I had already bought a supply of 3mm cap head set screws for the job as being the closest in size intending to re-thread to that size; but I hit a snag. I have no chuck type tap wrench small enough to hold a 3mm tape and tap is not long enough to use any other form of tap wrench. In the end I drilled the holes 3mm and used nuts to secure.

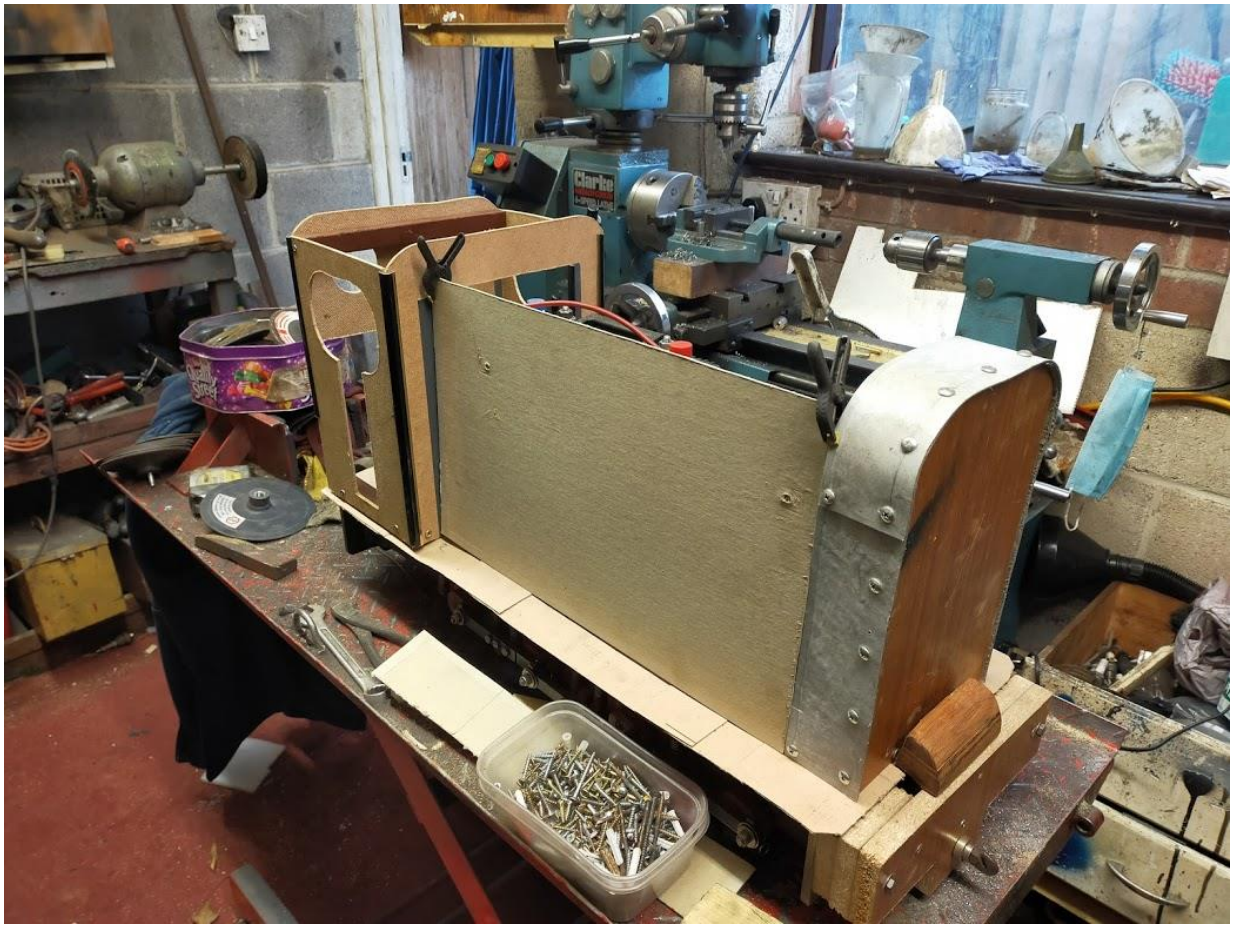
The chassis and the wheels were then cleaned up and sprayed with grey primer. Not sure yet what colour to use but I want the primer to harden of for a couple of days first.



Friday 13th November 2020

I have spent the last couple of days experimenting with body styles and fabricating some of the ideas with hardboard and cardboard. I am basing things on a the Junin picture and the phot below shows some of the progress I have made. It's all very crude at present of course but what I am trying to do is get an idea of the proportions and I think it might just work.

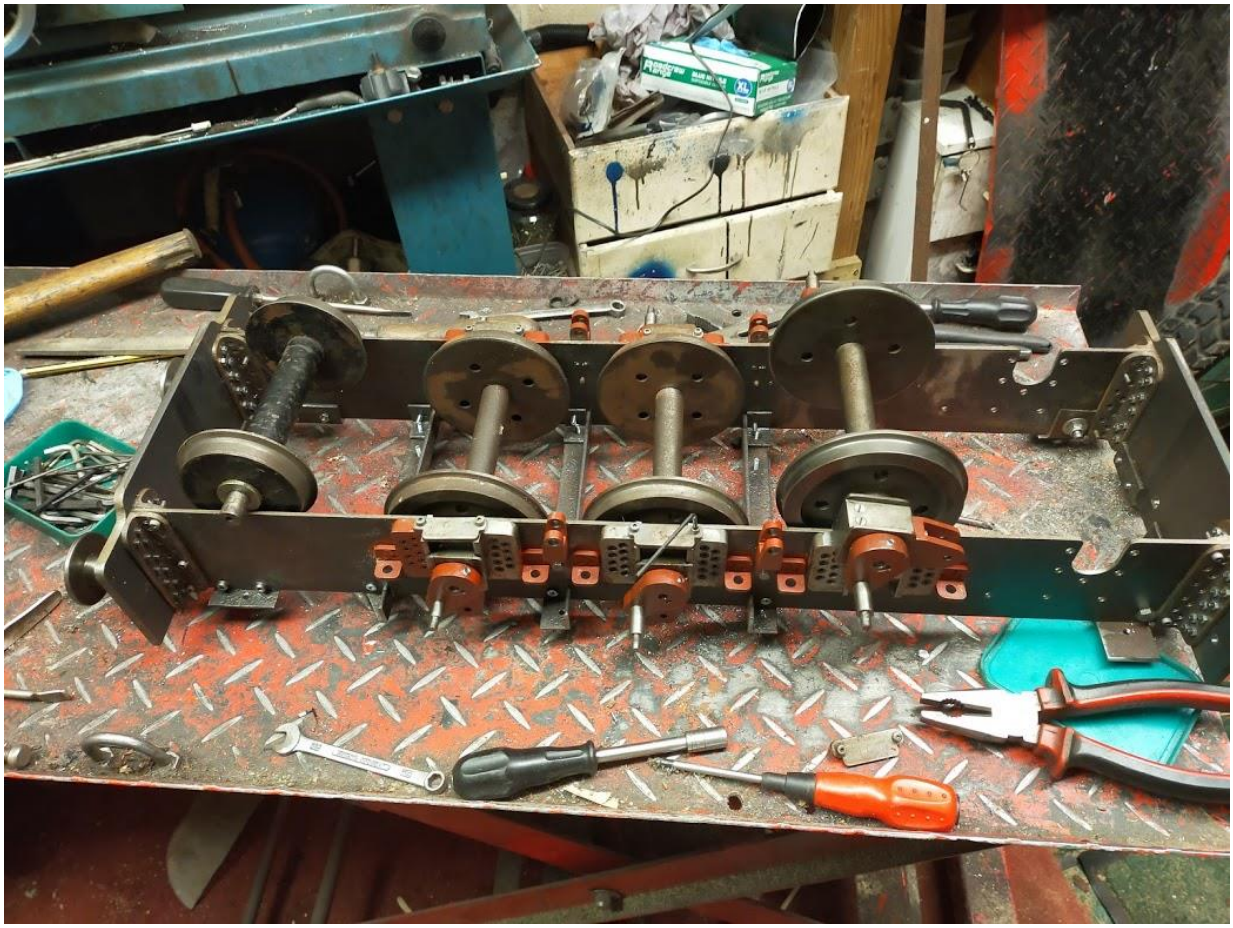
The cab design is quite faithful to Junin. The huge radiator at the front is correct in principle but I have rounded it too much and it needs to be slightly wider and taller than the body itself. The picture from



the front shows the extended and shaped buffer beam plus strange projection at the base of the radiator. Junin has no conventional front buffers (not sure why) so I have removed them. That's as far as I have got for now; I really need to have the floor fitted before I can finalise the dimensions and start fixing things down. At the moment its all a bit floppy. Once I am happy with the shapes, I can use the hardboard as templates to cut them from metal.

Late this afternoon, I changed focus completely and have dismantled a lot of the running gear so that it can be cleaned up and painted. I finally worked out how the motor was secured and it is now removed and put aside. It makes the whole thing lighter and easier to manage. One thing I did notice was that the loco was does not sit level. The front is low and the back is high and ground clearance at the front is marginal. I removed all the suspension components and that helped a bit though it is still a bit tail high. The problem is I think caused mostly by the springs which are of various lengths and not all the same gauge. I should be able to sort this out by grinding down the longer springs. Worst case is I have to by a set of new ones from Kennions. Anyway the issue is put to one side for now.

One thought that has occurred to me is to add another set of wheels under the cab as there seems to be plenty of room. This would make it an 0-6-2 chassis closer to the Junin layout. I will have to consult the experts on this as I suspect there are implications in terms of bend radius to be considered. AS it happens, I do have a spare set of smaller diameter wheels that would do the job. It would be a lot easier to do now whilst the chassis is stripped down.

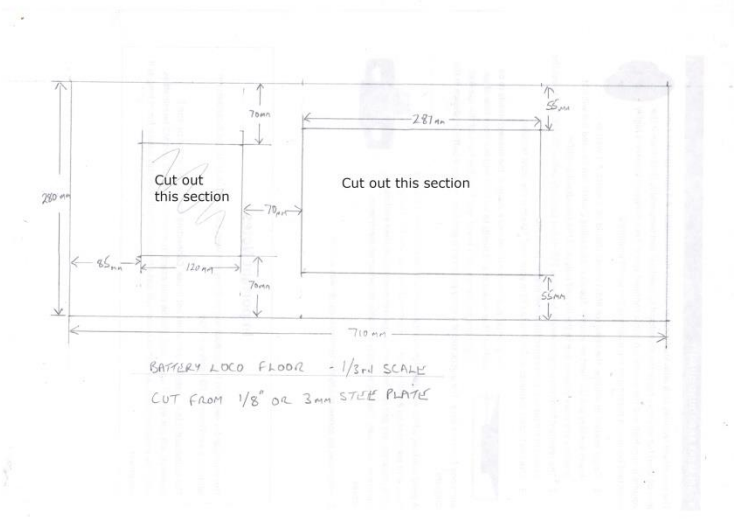


Wednesday 11th November 2020

I have now finished fitting the sleepers to all 11 lengths of track and added a third rail for 3.5” gauge to a couple of lengths. The latter will give me a short stretch for testing a smaller gauge loco, not sure if I will add any more, in any case I can only do that when the track is properly laid as the remaining rails are all odd lengths – no hurry.

The crankpins on the battery loco have all been replaced with silver steel items using 3/8” rod and the connecting rods bored to match. I had to do a bit more fine tuning of the rod lengths and the loco now runs very smoothly with no tight spots. On the electrical I fitted a sound card which was originally bought for a different project. It works but the volume is a bit low as its really intended for 16mm usage. I do have an amplifier which I wired in as well but frankly it made little difference. What did help was a larger speaker which I mounted in a sound box.

Having proven the electrics, they have now all been removed as I need to do some mechanical work on the chassis. This work is related to mounting a body and the first stage was to add brackets that will secure the base platform. I have also made up a cardboard template for this platform and from this was able to create a scale drawing. KAM engineering are going to laser cut this in 3mm plate, should be ready in a couple of weeks.



In terms of body design, I am tending towards basing this of the Hudeswell-Clarke Junin diesel hydraulic loco built in 1930 for use on a mine railway in Chile. It will only be an approximation as Junin was a 2-6-2 loco with quite small driving wheels to cope with the Chilean mountains. My loco is an 0-6-0 with quite large wheels but there are some similarities like the external cranks. It will be fun trying anyway and I am presently experimenting with cardboard body work to get an idea on proportions. This is a picture of Junin I found on the internet, the only one I have seen in colour – I rather like the green livery.

Friday 6th November 2020

Well hallelujah, I finally have a working control for the electric motor on the battery loco at the third attempt. As you can imagine I was extremely careful about installing this one and tested itat ev ery stage but in fact was all quite straightforward. If you click on the picture you will see a short video:

Attention now turns to replacing the mild steel crank pins with large diameter silver steal pins. This also means boring out the holes in the connecting rods to suit.

Wednesday 4th November 2020

Terry did a superb job with the connecting rods and they are now correctly assembled and ready for welding. I am in no hurry for this and intend to make and fit the new crank pins first. Simons design indicates they should be 7/16" diameter and I have a l2" length of this ready to make a start. However, when I bored one of the spare connecting rod ends out to 7/16" I felt it left insufficient metal on the conrod. I have decided to make them 3/8" for now and the silver steel rod is on order.

Wickes finally got some more 25/38mm treated timber in stock so I bought 24m of it on Saturday. Its now all chopped into 250mm lengths and soaking in wood preservative. I have now finished 4 lengths of track and two of them have the 3rd rail to provide a 3.5" gauge option. This will give me 20ft or so to test run a smaller gauge loco, I still have plenty of rail but no plans to extend it further for now. Finishing the other 7 tracks will give me something to do during the full lockdown just imposed by the government.

The third electronic controller arrived yesterday but I have not yet had time or the courage to install it. This time I am going to put a very low amp fuse into the circuit initially and will then use a bulb to limit the current passing into the controller. This should detect and prevent damage should there be a dead short anywhere as happened with the first two. Hopefully 3rd time lucky. The feedback for this item suggests that others have used it successfully and the first failure was undoubtedly my fault.

Tuesday 27th October 2020

I am beginning to think I am fated with these electronic regulators. The replacement I ordered arrived today and flushed with enthusiasm I installed it exactly according to the markings on the motherboard. Needless to say there were no actual instructions with the item but in theory it's straightforward. Double checked that I had the power to the right terminals and polarity correct, everything was spot on. However, when I connected the battery another flash, slight smell of burning and another dead controller. This one is going back for a refund but I did notice something odd when I looked at the advert on eBay. Their picture shows the battery and motor connections reversed to what is marked on the Motherboard – so which is correct.

I met up with Terry D today and he has kindly offered to mill the connecting rods for me. I told him there was no hurry but knowing him it will get done pretty quickly. I also made a start on machining the silver steel crankpins. Not easy stuff to work with and my tipped tool, which I thought would be perfect for the job made an awful job. In the end I used my normal hi-speed steel cutter and that worked better as long as I used plenty of cutting fluid and small bites. I have yet to work out the best way to tackle the pins as they need machining from both ends.

I have also fitted the intervening wooden sleepers to 3 lengths of rail. I have now run out of wood and Wickes still don't have the correct timber in stock. Not that its urgent, I'll keep checking their website.

Sunday 25th October 2020

Not an awful lot to show for quite a lot of work done over the last week. The speed controller arrived on Monday and looked really good. I spent ages finding suitable connectors and wire of sufficient gauge to carry 20amps continuous. In the end I doubled up each wire. I was quite pleased with the end result.

Then it all went pear shaped; there was a big flash when I made the final battery connection. Muggins had mixed up the +ve and –ve leads on the controller. Still not working after I corrected the error so I assume I have fried the electronics. A new one is on order, thank goodness they only cost a tenner. The replacement is a different make which is very similar but includes a voltage indicator to monitor battery status. I have also found a battery isolator switch which will be wired in as well. Things did not get any better as trying the motor showed that the con-rods kept locking up and there was a knocking noise on once side when going forward that was not present when going backwards.

In the end I stripped the whole drive mechanism and checked all the connecting rods and crank pin settings. The crank pins on the LH side which is the lead drive are already pinned to the axles. Fortunately, the connecting rods were all correctly centres and lined up. So the problem had to be on the RH trailing side. Just to be sure I drilled and tapped the connecting rods halves using 5mm set screws so that they will not move. Eventually they are going t be welded once they have been milled. On the RH side I reset the jack stays so that they were level and correctly quartered. Happily the rear two correcting rods were spot on, the issue was with the rod from the motor to the first driving wheel which was about 1/32nd too long. Clearly I did not do the job carefully enough the first time. I was able adjust this and upgrade the securing bolts to 5mm while I was at it. Finally I was able to turn the wheels through 360 degrees by hand without any binding and a quick check with the motor indicated that all was now well in both directions. Before anything had a chance to move again, I pinned the jack stays to the axles.

Just to prove that things go wrong in threes, I had a go at milling the connecting rods so that they join neatly rather than overlap. Not a very successful operation sadly. The mill/drill attachment on my Clark lathe has proved very reliable as a pillar drill but is not so good as a milling device. The problem lies with the milling head which cannot be locked in position securely enough. It tends to both lift and

swing backwards as you cut. At least I tried but I need help with this job so a trip to Melksham is on the cards.

On a more positive note, I have now built 30 metres of 5” gauge track and after a bit of rationalising of the PNP sleepers, I have enough bits to make another 3m length. They still need the intervening wood sleepers screwing down but should not take long, just hard on the knees. Annoyingly, Wickes have been out of stock of the 25x38mm timber for weeks. When I finally get some it still needs chopping into 250mm lengths and soaking in preservative. No further forward on where to lay the track either. I am very fatalistic about things like this; If I have the bits prepared, inspiration will eventually strike. The jury is still out on whether to bother adding the third rail for 3.5” gauge. Everybody tells me that it simply does not work well for ground level tracks, too easy to topple over.

Monday 19th October 2020

Quite lot of time spent but not a huge amount to show for it. I have drilled the oil holes in all the con-rods. On the LH side the cranks are drilled and pinned to the wheels spindles. On the RH side they are still only held by grub screws until I am sure the quartering is correct. Due to the acquisition of another motorbike (see the Daily Blogg) I have not yet run the loco on the track to make sure it turns reasonably freely. I suspect a little ‘easing’ will still be needed. In anticipation of the regulator I ordered the other day arriving I switched attention to mounting the battery on the chassis. I have used angle iron, salvaged from some old garden stakes which have been lying around for years. Quite rusty but cleaned up well enough with the angle grinder and will be fine once painted. Not something that will be seen once a body is mounted anyway. The angle iron strengthens the chassis in the centre sections as well as supporting the battery itself. The latter is mounted in a well so it cannot slide around and is positioned over the wheels to aid grip.

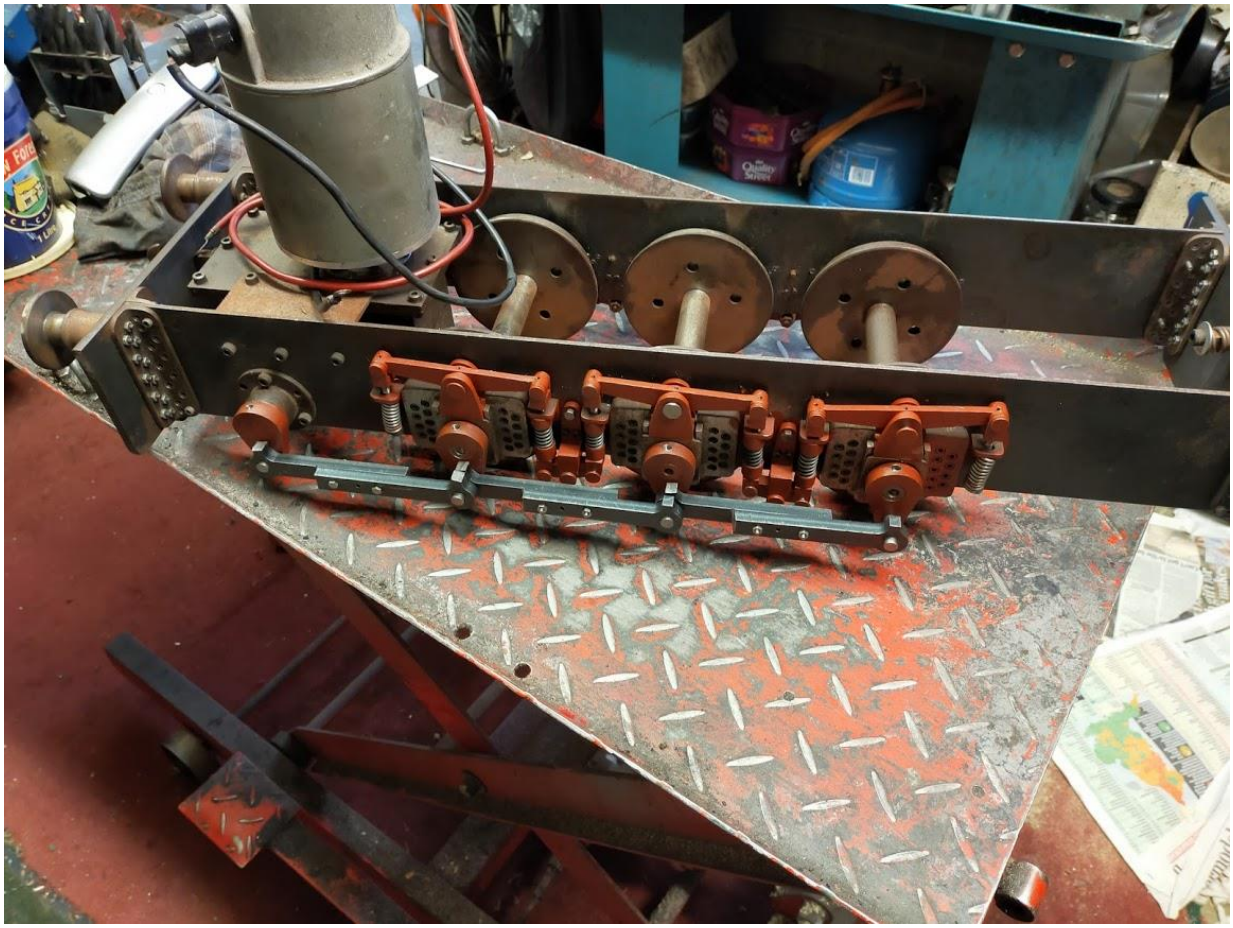
Again it does not look a lot but it took nearly a day to fabricate. The stretchers on the side are hardwood So that it will be easy in the short term to screw on mounting plates for the regulator and controls and at the front to experiment with bodywork. No idea yet what type of body to go for. Next winters project most likely.

A picture of the motor speed controller is below. It includes a reversing switch. The unit on Hercules has a plug-in controller know with horn switch and a safety cutout toggle. At £9.38, this unit has none of those refinements but it should enable some testing to be carried out. According to the advert it's about 4" x 3" x 1.5" thick so easily hidden within the bodywork

Thursday 8th October 2020

I have been very preoccupied with a domestic crisis for nearly a week but today I was determined to get some quality time in the workshop. I have made what I think is excellent progress on the Battery loco project and the connecting rods for both sides are now made. They are still bolted up whilst I got the spacing correct and will need milling to 3/16” and welding in due course but that is not a priority.

The cranks have been drilled, tapped and fitted with grub screws to secure them to the wheel spindle at one end and the crank pin at the other. Currently I am using 5/16” mild steel rod as the crank pins just to get the alignment sorted an make sure that it all rotates freely. Tomorrow I plan to put it on the track and see how it rolls. I imagine that will be a bit more ‘adjustment’ but the design I am using allows for this. All being well I can the start on the proper crank pins which are planned to be 7/16” diameter. The connecting rods will then need to be opened out to 7/16” (or a smidgeon more) to match. I have not yet pinned the cranks to the shafts, the grub screws are sufficient for now and allow for adjustment should I not have got the quartering quite right. Very satisfying.




Quality Street

Tuesday 29th September 2020

Overnight I decided to go for a shorter dual gauge track. So I have ordered enough sleepers to make another 40ft of track and enough shoes to lay the 3rd rail. Better to have a dual purpose 100ft track than a 150ft track I cannot use for one of my locos – bit of a no-brainer really. I can always extend the track if it's a success and in the interim I have access to the WWSME track at Westbury anyway.

I also came up with a cunning plan regarding the connecting rods for the battery loco project. I ordered two sets as it happens and basically I have joined them together in pairs to get the necessary length. Initially they are bolted together side-by-side whilst I get the exact length for each rod. All 3 are slightly different lengths so each fits in a specific location. To make sure I know which goes where, I have stamped them with an R (for right side) and a number starting at one by the motor with 6 at the back. That way I can dismantle them all for machining and know they will go back together correctly. The idea is to mill the overlap to 3/16" on alternate sides. The bolts will ensure they go back correctly and they can then be welded. The first part went quite well as you can see in the picture. The next part is the milling and that is something I am not overly confident about with my equipment. I may ask for help with this. I have not yet bothered about quartering the cranks, this can wait until I have sorted the connecting rods.

Monday 28th September 2020

On the track front things are moving on nicely. By the end of the day I had assembled 6 three metre lengths approx. 60ft. I will need to revisit them all in due course to add the wooden sleepers and attain 100mm spacing. The wood is currently soaking in preservative, it will be a messy jog getting them out of the bucket and dried. I will place a further order with PNP shortly for enough sleepers and shoes to build another 12m of track. I will still have rails left over and at that point I need to decide whether to use it to add the 3.5" gauge track or extend the 5" gauge track by another 50ft. Not an urgent decision and one that will most likely be resolved when I finally decide where to actually lay the track. The picture shows what 60ft

of track looks like and also how uneven my lawn is. This is not necessarily where its going to be laid, I just wanted to see what it looked like. The dog is hoping someone will play football with her.

So quite an encouraging day except that I hit a snag with the electric loco project. Whilst looking at the connecting rods that I had laser cut a while back it struck me that they looked a bit short. Sure enough, when I measured the rods they were 4.25" between centres which is what is on the plans given to me by Simon and must be in the cnc file I gave to KAM. I have not measured the loco precisely yet but it is clear that the rods need to be closer to 5" between centres. Not sure what to do about this yet. It will embarrass Simon no end if I ask him to redo the cnc file to get them recut. This would be the most sensible solution if somewhat expensive. I had two sets cut and I am wondering if I can cut & splice the rods at least as a short term solution. I will discuss this with John Hill when he comes on Wednesday. Oh well worse things happen at sea. The picture below shows just how far out the con rods are:

Saturday 26th September 2020

Other activities have taken priority over the various railway projects along with renewed Covid-19 restrictions which have virtually closed the WWSME normal club activities. The govt introduced the 'rule of 6' in early September which means that normal club activities are in abeyance. You can still use the tracks but you have to pre-book to make sure no more than 6 are on site at any one time. That is a sensible measure to allow track testing but of course does nothing for the associated social activities and the AGM is now cancelled as well.

Anyway I collected the sleepers and suchlike from PNP ages ago and the box has sat in the car until today when I finally made a start on building track. The sleepers and shoes are very well made and it is easy to assemble a track which is guaranteed to be in gauge. Easy yes – quick no as it has taken me most of the afternoon to build two 3m sections. I am getting quicker and the plan is to try and build two sections a day. Not that there is any urgency as I still have not decided where to actually lay the

track. I have also sorted the remaining rails into matched pairs of the same length. I also modified my cunning plan and used the plastic sleepers at 200mm centres so that the track will be ½ plastic and ½ wood sleepers. The picture shows just the plastic sleepers as the wooden ones are cut to length and pickling in preservative for the moment. I have enough sleeper material to build 6 sections giving me 18m of 5" gauge track and enough track for double that. However, one step at a time.

AS a separate exercise I have also dusted of the plans for the 5" gauge electric loco that Simon Bowditch gave me earlier in the year. The connecting rods are in stock having been laser cut ages ago. I have now ordered some steel rod to make the crank pins and some grub screws which I will use to locate various things. The workshop is almost clear of motorcycle projects and all being well from October will be devoted to model engineering activities until the spring.

Monday 24th August 2020

Not a huge amount of activity on the railway front, hence a delayed report. It was my birthday a couple of weeks ago and the kids bought me a driver's cap and my wife bought me a guards whistle both of which much appreciated. There was a saga with the hat. As they wanted it to be a surprise, they tried back door methods to get my head size and my daughter left the delivery address as her home rather ours so it had to be re-posted. When it arrived it was far too big size 7 ¾ whereas I take a 6 7/8. I said nothing and sent it back with a request for a smaller size. Done very quickly but unfortunately it was returned to my daughter so the cat was out of the bag. Already a much travelled hat!

I have cleaned up the rail joiners an will have enough to build a single gauge track, may need some more if/when I add the alternate gauge. I have also decided to cheat slightly with the sleepers and have ordered 100 plastic ones plus 200 shoes from PNP in Stroud. The benefit (besides laziness) is that they come pre-dilled for correct 5" and 3.5" gauges. To do the entire length in plastic sleepers @

100mm centres would be pretty expensive so I am working on using 1 in 3 (300mm centres) with wooden sleepers at 100mm and 200mm centres. They are waiting a fine day for collection as Stroud is quite close and it will give us a trip out in the car.

I have also been helping out with the construction of the 5” gauge ground level track at WWSME in Westbury to observe how it is done. Quite daunting amount of work as you need to dig a trench about 4” deep and perhaps 15” wide reasonably level lined with wooden slats to contain the ballast and keep the grass etc back and allow it to be mown. Then fill with ballast to get a level bed. I have not yet decided exactly where to put the track so no real work done, just a lot of pondering. I ought to get the boys down here and set them the challenge.

Monday 3rd August 2020

Quite a busy time as we had family visiting for the last week in July. However, I managed to get access to the Westbury site for the family on the Tuesday and we took with us the Hercules 5” gauge loco and the 16mm models.

This was the first time I had run the Hercules and the first time I had used my riding trolley since it was built so I was a bit nervous but all went well. I set up the Hercules and took it for a few test lamps to check things out and establish a safe speed settingfor the children and particularly the grandchildren. Within an hour they were all experts and we ran the loco in turns for over 3 hours without the batteries giving any trouble. I did let then have a go with controlling Silver Lady and they loved the steam aspect but in truth they were far more interested in their next turn on Hercules, The picture below has a video linked; if you click it a shows my 9yr old grandson taking his elder brother for a ride. Pity they don’t live closer as we could do this regularly.

Late last week I was told about a stock of rail line sufficient to build about 100ft of dual gauge (5" & 3,5") track near Yeovil. On the Sunday, after the family members had departed, I visited the chap and came away with the rails. The sleepers had all rotted and been scrapped but the rail was in very sound condition and there were a few extra bits which were bent but might prove useful. Most of the fish plates were still attached and these have been removed and should clean up for re-use. No idea if or when I will build a track but rails in this condition and price don't come up very often so it had to be done.

Friday 17th July 2020

I took the Silver Lady (SL) to Westbury to try her out on the their garden railway track. I once again had trouble getting the burner to ignite. On Billy you just hold the flame above the chimney and quickly there is a pop and you can hear the burner roaring. On the SL this seems to take forever and in the end I found I could open the smoke box door at the front which gave better access and a quick ignite. Later Barry Statham suggested holding the flame under the smoke box as that worked on his SL and sure enough it worked on mine. She steamed up quickly and I was able to get her running regularly quite quickly – something I have yet to achieve with Billy. It is still a bit confusing having the two radio control units configured differently. The SL uses only one of the toggles to operate speed and direction. On Billy's one toggle does direction and the other speed. Not sure which I prefer.

I did find one issue, the loco seems to rock as she runs; it was not simply a track issue as other locos were running over the same track quite smoothly. Not dramatic but a little concerning. It was suggested that the wheels may not be in line – entirely possible as I had to set the gauge of the rear wheels when I ran her at home last week. Apparently Roundhouse include a gauge plate with their locos when new but neither of mine have one so another member lent me one.

Back home I checked the gauging and it was only marginally out but now corrected and the wheels are in line. What I did find however, was a lot of really sticky muck on the rear wheel treads almost like worn out rubber tyres. There was some on the front treads as well but nothing like as bad. They are now all cleaned up though it was quite difficult to remove. Now need to take it back to Westbury to see if this has solved the problem. Click on the picture to get the video though it's not easy to see at speed.

Saturday 11th July 2020

The Silver Lady has been sat in her box on the stair well since she was brought home. Just too many other things to attend to until today. The weather was fine and dry so I set out the portable track and unboxed the lady.

She is in really excellent condition – even my wife was impressed. I fitted the radio control batteries, gave her an oil, filled up with water and gas and lit her up. It was a bit difficult to get her going initially but eventually there was a loud pop and she made that roaring noise which means the burner is working. Quite quickly she raised steam so I gingerly moved her to the track. In hindsight it would make more sense to put it on the track before igniting the burner so you are not moving hot engine.

Anyway I quickly hit two snags, the first was that the loco shot of at high speed and derailed at the first corner. This was when I discovered that the radio control handset is wired rather differently to the one that came with Billy. On Billys, one toggle controls forward and reverse, the other he speed. Silver Lady's controller has both functions combined on one toggle left and right for forward and reverse forward/backward to control speed and just to add to the confusion it's the left hand toggle (I am righthanded). Anyway this was quickly sorted.

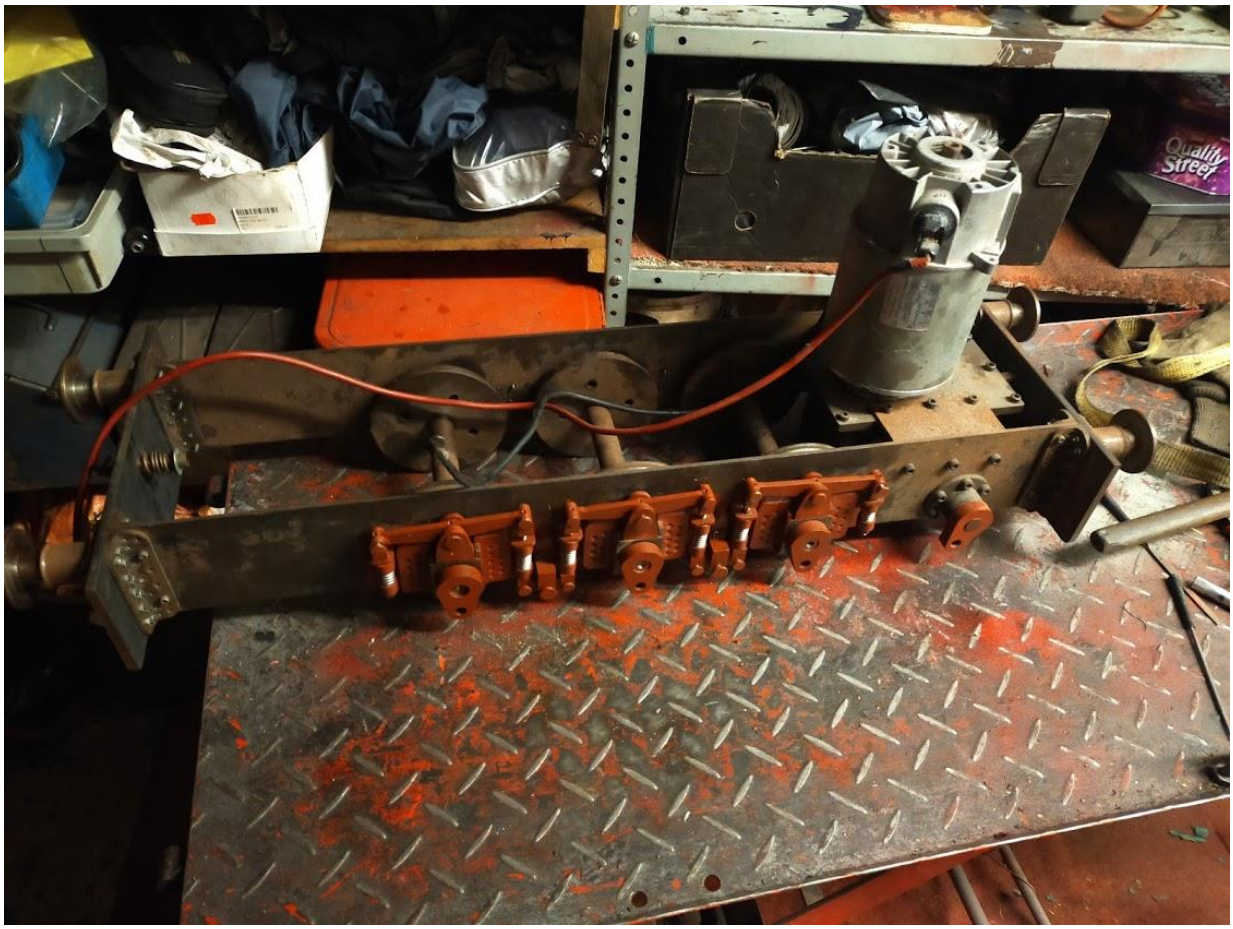
Second problem was the loco tilted heavily to one side. It was difficult to see what was happening so I shut down the burner and let it cool down. Once I could get it on its side the cause was pretty clear. The front and rear wheels were set to different gauge with the rears narrower than the front. I measured the gauge setting on Billy which was about 28.2mm. On the Silver lady the front wheels were 28.2 and the rear was 24mm. No wonder she tilted, the rear wheels were running on the sleepers! Fortunately its easy enough to adjust, once you have found the correct size allen key. There is one in the goody bag that comes with the loco but its far too big for the wheel adjusting set screws. Fortunately I have a box of assorted allen keys and the correct one is now in the goody bag. With the reatr wheels set to the correct gauge the loco ran fine on the straight. Being a much longer (0-6-0) wheelbase than Billy it does not like the 30" curves so you have to drive it slowly round the bends. Not really a problem, just something you need to be aware of. Now that the club has reopened, I am looking forward to trying her out on the big track.

Wednesday 17th June 2020

I collected the Silver Lady loco from Weston Super Mare on Tuesday, combining it with a visit to a friend in Burnham. It looks good and comes ina very elegant box with a cradle so that you roll it straight onto the track without have to touch any of the hot bits. I have been busy with other projects

so not done anything with it yet other than to order 12 AA rechargeable batteries. Eight for the radio control transmitter and 4 for the receiver on the loco. Hopefully by the time they arrive, the rain will have stopped and the garden dried out enough to put up the track.

Today I visited Simon Bowditch in Frome partly to look at a couple of his bikes which I am helping him to sell and partly to look at a 5" gauge electric loco he had offered me. He started building this for his grandson about 17 years ago but work stopped when said grandson got interested in other things and it has sat on the shelf ever since. The main frames, wheels, and gearbox have been constructed and a 12v Sinclair C5 motor is currently fitted. The project is now in my garage to see if I can complete it. The loco is an 0-6-0 diesel loosely based on the Hudswell Junin which was built in 1929 for a Chilean company to haul nitrates from a mine in Atacama to the port. Simon gave me some drawing he did at the time and some photocopies of the loco and similar models he was using for inspiration. It is intended as a project for next winter but I could not resist having a play to see if I could assemble the compensating link suspension, parts for which came with it. Progress to date is shown below, I am waiting for Simon to tell me if I am on the right lines. The other thing I need to do is work out how to complete the model and what materials I will need so its in stock when I start in earnest. The motor is at the front and the battery will be towards the rear.



Monday 8th June 2020

Not a lot to report. The cutting board arrived on Saturday and the amplifier unit I ordered for the sound card arrived today. I am fully occupied with my new lather at present so no time to play with the amplifier yet but it's time will come. No news about the Silver Lady either but that is probably a good thing as I don't really have time to devote to that.

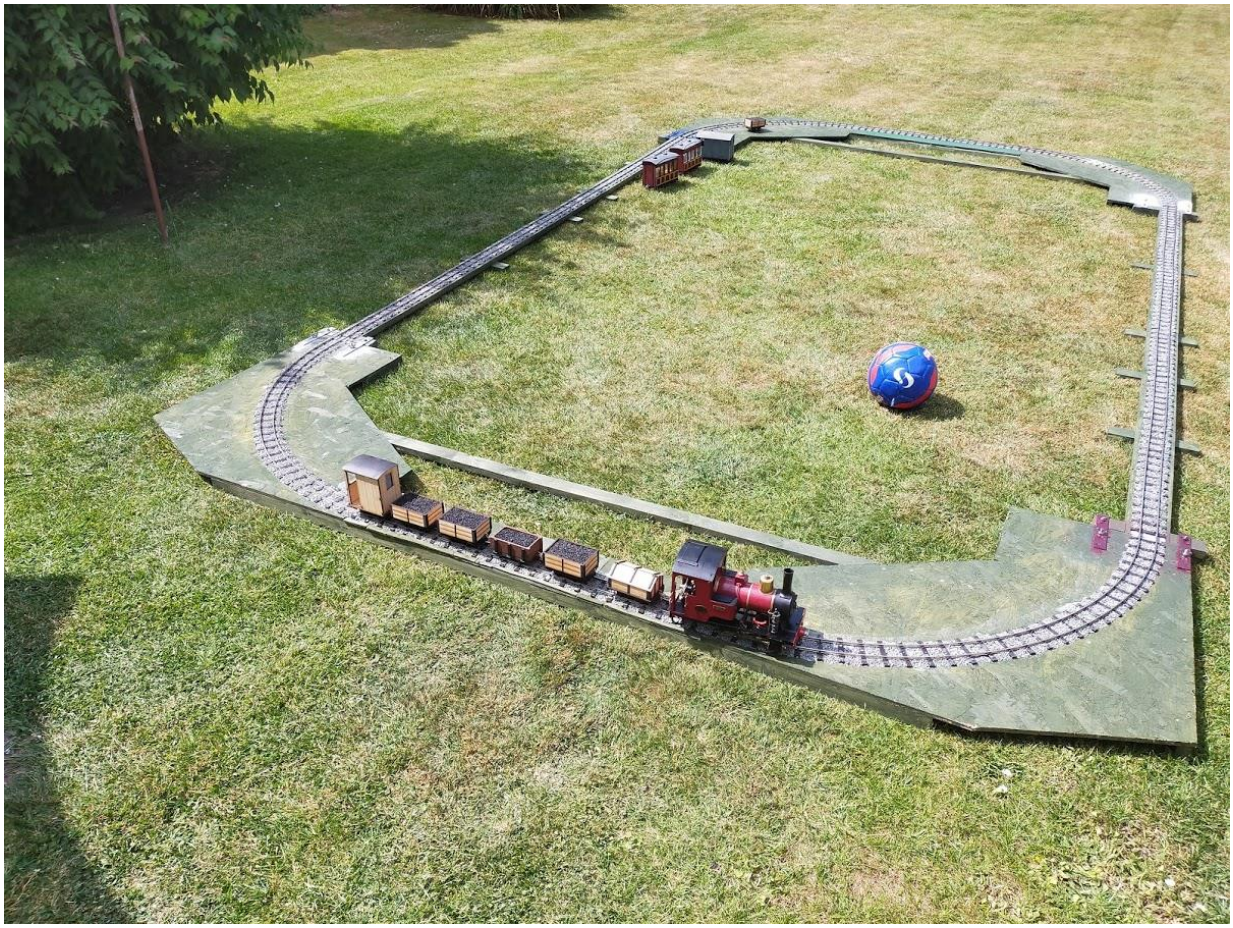
Sunday 31st May 2020

Quite a busy period though not much actual progress. I did order the new Locoremote Maxi which arrived on Tuesday. I have done some experiments connecting it up to the sound card and it does work but so far not terribly reliably. The main problem is the battery power. The Maxi will supposedly run down to 4.8 volts though I found it dropped out when battery power got close to 5v. It works better with a 9v pp9 battery but the motors I currently have are supposedly 3v units though they do appear to be safe to at least 5.2v as I have tested then with a 4 x AA battery pack giving this output. The Mylocosound unit requires 9v and becomes unstable if the PP9 battery drops much below 8.5v. Moreover, the unit seems to run batteries down quite quickly. The instructions recommend using the same battery for both units and this certainly makes the wiring easier. But of course my 3v motors would burn out at that voltage. I have been given guidance on how to run the locoremote unit and the mylocsound unit with separate batteries and it is getting this to work which has created problems. I have put both units on the back burner for now whilst I ponder what batteries to use.

The railcar kit arrived on Saturday. It is basically a card kit totally different to all the previous railway related models I have built. Everything has to be cut out and its clearly going to be long job. Also I don't have the right tools at present to do the job properly. A Hobby knife kit and a cutting board are on order. The Railcarkit is also now on the back burner.

On a more encouraging note, I have reached an agreement in principle with the vendor of the Silver Lady model and am waiting for him to let me know when I can visit. It turns out that he lives in Weston Super Mare which easy driving distance.

Today I put up the 32mm track hand had an afternoon playing with the locos. As you can see, we steamed up Billy as well as running the battery models. My wife was very impressed and has endorsed the idea of getting the Silver Lady which was nice. The dog however was less impressed and had to be shut in the house after trying to attack Billy. Funnily enough she took no notice at all of the battery locos.



Sunday 24th May 2020

All the portable track has been ballasted and the rails cleaned of excess glue and other muck. I have also replaced all the brass countersunk screws used to pin the track with some smaller s/s roundhead screws which tidy it up quite a lot. In fact I suspect that the PAV glue is holding the track in place and the screws are now really only a precaution but better to be safe than sorry. In the post today was the Mylocosound diesel sound card plus a remote control used to operate its various features and to programme alternatives. Have not tried the latter yet but I did rig the card up on the OO layout and it works fine. I put the Diesel railcar on the track to get a better effect. The sound level would be adequate for the OO layaout and possibly a 16mm garden loco but the amplifier already on order will definitely be needed for use on the Hercules. I was so impressed with sound card that I am tempted to buy the steam version for the OO layout. However, I will delay that until the new Hornby wifi controller is shipping to do a comparison as it is supposed to have integrated sound.

In the interim I am considering getting the new version of the Locoremote unit called the Maxi which can also control a sound card to fit in the 16mm railcar I have on order. There would be plenty of room for all the bits.

Thursday 21st May 2020

The 3rd bag of Ballast arrived today and I have now fully ballasted both ends and one long straight. I ran out of time today but all being well I will finish the second long straight tomorrow. I have plenty of ballast and PVA glue so its now down to time and weather – rain is forecast overnight. No delivery date yet for the railcar kit nor for the new sound card I have ordered. The latter is intended for the Hercules. The instructions suggest that an amplifier is needed for ride on locos (the card is really intended for smaller locos) so I have ordered one of these as well.

I did hear back from the guy advertising the Roundhouse Criccieth Castle battey powerd diesel but it has already been sold. However, he still has two steam powered models, the Fowler and a Silver Lady. We are in discussion about the Silver Lady but I am doubtful we will reach an accord as he wants rather more than I am comfortable with for a 9 yr old model – we shall see.

The Westbury club and track are still closed but today I had an offer from Dave Brierley to run the Hercules on his 5" gauge track at Colerne. Not sure I am ready to go visiting yet even if it was permitted under the relaxed lockdown rules. Difficult to keep a 2 metre social distance under these conditions but on the other hand...

Sunday 17th May 2020

The second bag of ballast arrived and I was able to complete the inside of the track but I then decided that it would look better if I put ballast on the outer edges of the sleepers as well. This proved to be the case but then I ran out of ballast and PVA glue. I was able to get the latter at our local Poundland Shop but another 2kg of Ballast will not be here until Thursday making a total of 4kg for the job. With the wisdom of hindsight it would have been a lot cheaper to buy a 5kg bag in the first instance. I did however get to assemble the track (low level) and run the two battery diesels on Sunday afternoon. I have also ordered a diesel railcar kit from a company called Rail-Roadmodels. This is a card rather than wood based kit so a first for me.

Monday 11th May 2020

I needed something to take my mind of the loss of our beloved dog Barney yesterday so I hunted round the sheds and garden and found a reasonable supply of timber. This eventually turned into the pair of trestles shown below. I now have enough trestles to be able to mount both ends of the 32mm track so we have a hi-level option if required. I will need to resume the hunt tomorrow to find something to edge the track with so locos and wagons don't fall off too easily either from overly enthusiastic grandchildren or the wind. In the picture both look lopsided but it's an optical illusion, they are both symmetrical. The second bag of ballast should be with me on Wednesday so I can complete that task.

Saturday 9th May 2020

I ordered a kilo of granite ballast to treat the long straights on of the 32mm track. This worked quite well so I decided to do the curved sections as well but ran out about half way through the first one. Initially I have only ballasted the cntre section of the rails but on reflection, I need to do the sides as well. I ordered another kilo but now I am not sure I will have enough to do the sidea of the whole track. Looks ok so far and the PVA glue seems to have worked well, its quite firm and nothing fill off when I hung up the long straights. I have been looking for another 16mm locomotive, but so far none have taken my fancy at least in the kit build selection. There are some nice ready made battery operated locos from Roundhouse and similar companies but they are an eye watering price new. I looked back at the classifieds in the 16mm Bulletin and have emailed about one loc but heard nothing so presume its sold. The next issue should be out quite soon so maybe there will be something of interest in that. You can just about make out the 6mm s/s wingnuts I recently bought. They will make it easier to assemble/disassemble the layout. Not terribly clear in the photo, but the track is supported by a couple of trestles which came from our old greenhouse. I am contemplating making a couple more so that I have the option to use the track at hi as well as a low level – but not on windy days!

Friday 1st May 2020

I found a suitable piece of thick plastic and shaped it into the outline of a railway lamp. With a 6mm hole through the middle I think it looks the part. The battery and wiring is mostly hidden in a pouch inside the false door and the switch is at the bottom. I would have liked to hide all of this somewhere inside the van body but the design does not provide any easy way to get access. Once I have a guard figure standing on the platform I doubt it will be noticed.

Thursday 30th April 2020

Still no sign of the Mylocosound card but I have bought a couple more Phil Sharples coal wagons which I built over the past few days. I have also fitted an led rear light to the guards van. With 4 identical coal wagons and a matching guards van they will make a nice a nice train. I am hoping I can makea lamp housing to go round the led.

Thursday 16th April 2020

The upgraded Locoremote unit arrived in the post this morning. It is now fitted to the Gordon loco and I managed to fit front and rear lights as well. Not in an ideal position but ok for now. All seems to work ok and I will give it a track test tomorrow.

I heard belatedly from another supplier of MyLocoSound units today and he seems to have more practical experience of fitting this sound card to Ride on locomotives including the use of an amplifier to boost sound. I think he may be the better bet to order from as the other guy was nice enough but had no experience fitting the card to Ride on locos. However, both suppliers are currently out of stock of the sound card.

Wednesday 15th April 2020

I have tidied up the paintwork on the curved sections of the track and painted the outer edges of the straights with the same green fencing paint. The inside between the sleepers is still raw wood and I am pondering on how to make a decent job of this without getting a paint all over the track and the sleepers. A little bit on the outer edges is not a problem. I may have to bite the bullet and remove the track to do the job. One possibility is to use ballast but I don't have sufficient left over from the OO layout and it's probably a bit too fine – a solution will arise if I am patient and there is no hurry.

Chris Rennie emailed to say my locoremote unit is upgraded and in the post so I can now install wi-fi in the Gordon. He has also offered some advice about sound cards for the Hercules. Turns out he has some 5" gauge battery locos as well. I have now been in contact with a supplier of the MyLocoSound unit who was also helpful and will let me know when they are back in stock.

As of today I have retitled the Blogg as it is no longer limited to Steam Railways.

Monday 13th April 2020

The basic construction of the track is now completed and I did a test assembly on the lawn to make sure it all went together ok. As you can see in the picture below it works pretty well and if you click the picture you can see the video.

I solved the problem of connecting the 4 sections of track by fixing two strips of metal at each join. These are permanently bolted to the straights but drop onto 6mm studs on the curved section and then held firmly in place with nuts (wing nuts when I can get to the shop to buy some) for the duration of the session. These hold the track in alignment even on my rather lumpy lawn without needing the fish plates. The joins are not perfect and the wheels click a bit as the pass but not bad enough to cause derailments and certainly no worse than the WWSME portable track. Quite pleased with the result so far. The rather messy paint job at the joins is colour coding so it can only be assembled one way. I will tidy this up when I paint the remaining parts of the base.

On reflection I have decided to stick with a ground level track. I had forgotten how light the rolling stock and even the locos are in this gauge and they were rocking about quite a lot in the wind. Falling of a ground level track would not be an issue but from a raised track might well be.

Sunday 12th April 2020

I managed to finish building the other half circle today. It was a bit quicker as I now had a design to work with. I also included a carrying handle and with this one person can easily lift and carry it. In fact I reckon I could carry both at the same time in extremis. Tomorrow, if the rain holds off I can now start work on the mechanism for joining the four parts together securely but easily separable. I have some thoughts on how to do it but highly likely then end result will be something completely different. In the interim, the end pieces stack quite neatly in the passageway alongside the garage. They would also fit easily in the bike garage at the end of the garden and that may be a better choice depending on where the track is mainly to be used.

I have also been thinking about making it a raised track and a couple of ideas are being considered. The most promising idea came from my wife (she is still speaking to me strangely enough) and involves using our mini scaffolding tower. Something to experiment with anyway

Saturday 11th April 2020

Slow but satisfying progress today slightly hampered by the fact that my left knee objects to all the crawling around I have been doing. The layout is so large it has to be built at ground level. Despite this setback, I have built two of the corner sections and decided I would permanently join then with a 36" straight. I did this as a temporary mod initially as to ensure that the end result would still be manageable by one person. It might be a tad cumbersome in a strong wind but from a weight point of view it was fine. I am still working on a way to positively link the straight sections but in fact they joined up quite easily for a quick trail at the end of the day. One lesson I did learn from yesterday was to paint the woodwork before screwing down the track. I shall have to partially dismantle the straights at some time for painting.

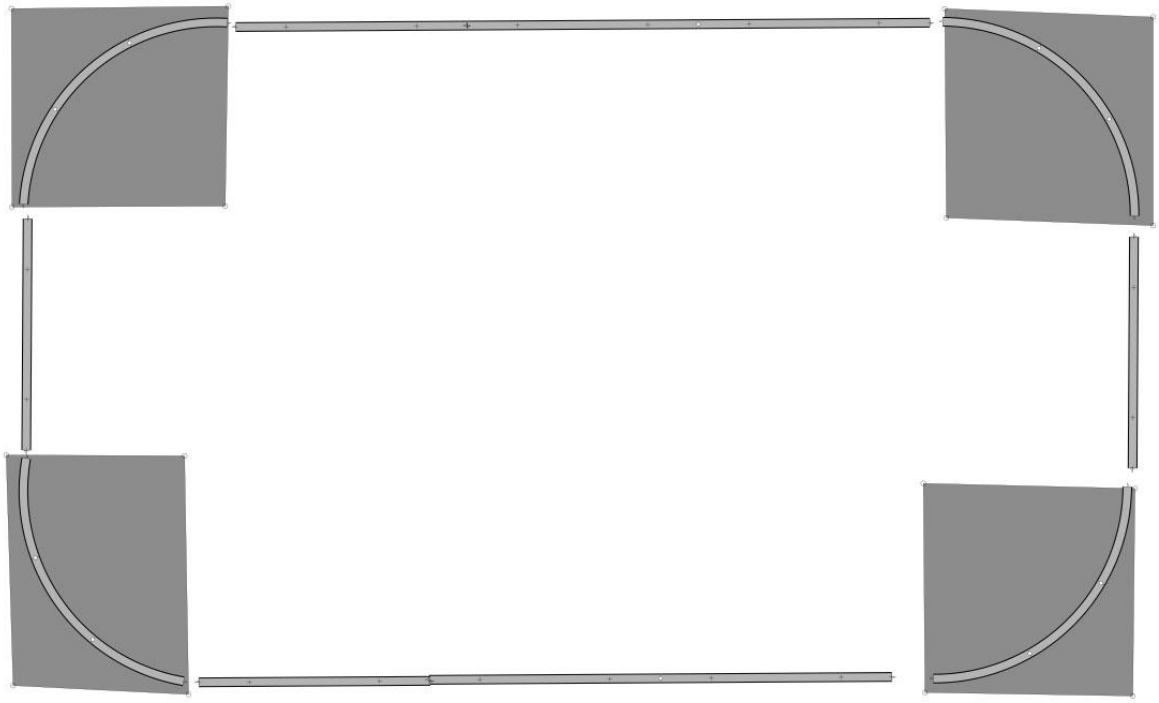
My knee problem has also made me consider whether it would be better to raise the track somehow.

Friday 10th April 2020 – Good Friday

We should have had my son and his family down for Easter but the lockdown had stopped all that sort of activity. I decided I would make a start on building the 32mm garden railway today as it was nice and sunny, ideal for working outside. First task was to dismantle some old frmaes that were built years ago for the Bristol Bike show at Shepton Mallet. We no longer do that sort of thing so they were taking up valuable space in the garage and more to the point a valuable source of well seasoned timber.

This is really only going to be a glorified train set layout with one oval loop. Four boards will each hold a quarter circle of track. These will be joined on the short leg of the oval by a single 36 staright and on

the long leg by three 36” straights joined together . No idea yet exactly how I am going to join them up securely but I am pretty confident a method will emerge in time.



Well the first day has gone quite well. Both long straights are now fabricated and the track laid. Though the track itself is weatherproof, the timber frame will warp and rot if left outside all winter and being nearly 10ft long they are not easy to store in the house. WE have a covered passageway alongside the garage so I found some old ladder hooks which are ideal foro hanging the track safely and well out of the way.

I have marked out two of the corner sections but will need to use the jigsaw to cut them out. AS its Good Friday and the neighbours are having BBQ I have left this job till tomorrow.

A few days ago I ordered a second Locoremote wi-fi controller for the Gordon. They have just released a new version of the software. With the old software, you could not execute a command until the previous one had completed which was a bit tedious especially if you had inadvertently selected the wrong command. Trying to do delicate marshalling was near impossible. However, the new software now responds instantly and is a vast improvement. I have sent the old unit back for a software upgrade. They have also introduced a new Locoremote module which is able to control a sound card and looks very interesting. It is only currently available for the higher power controller (6v plus) and both my engines are 3v. motors so not of immediate interest for my 16mm models However, the sound card they are using is a separate product from an Australian company with a lot more features for not much more money than the card I just installed in Hercules. It think it may be possible to integrate this card into Hercules and I am awaiting a response from LocoSound about this.

Monday 6th April 2020

The twin horns turned up today and have now been fitted. They both work ok and the hi-tone one is really loud. You have to toggle the switch to activate them one way for low tone and the other way for hi-tone. Not sure they produce a really authentic twin tone sound even if you flick between them really quickly but they were cheap enough and maybe I'll find something better in due course. I also glued the dummy horn I turned up to the top of the cab; looks pretty good. Still need to fit a name plate but first I have to think of a suitable name. One other small job I plan is to paint the radiator grill black.

Thursday 2nd April 2020

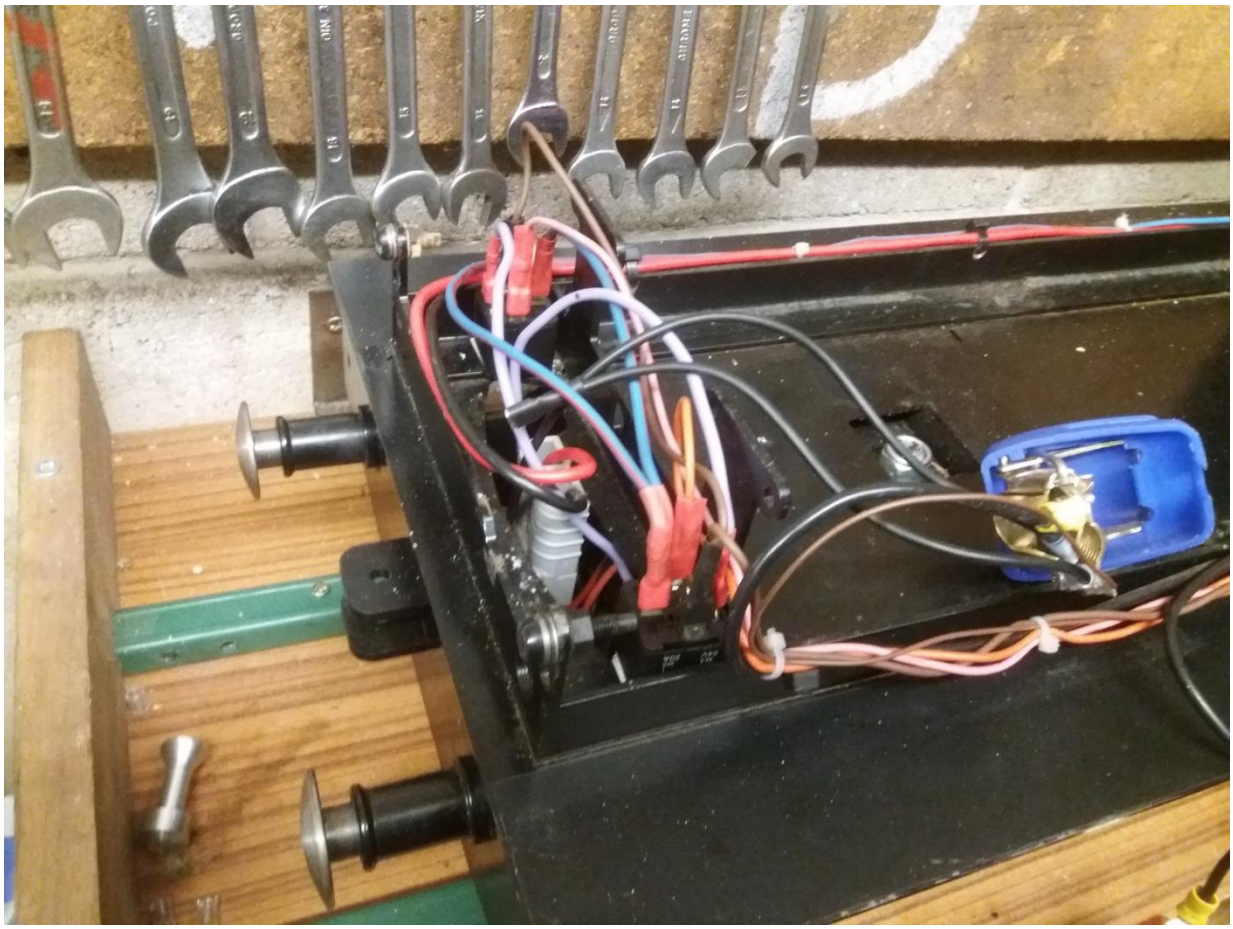
This morning I put the loco on blocks so that I could run the motors, then fitted the batteries and turned on the master power switch. Much to my relief the sound card immediately started working though I had rather expected that it would only come to life when the controller was switched on. Mostly this would be fine but there might be times when I don't want the sound operating so I have now wired in a simple on-off switch which fit neatly alongside the card. You can access this through one of the side windows. I also had an email confirming that Hermes have finally collected the parcel with the horns so they should be here by Monday all being well.

Wednesday 1st April 2020

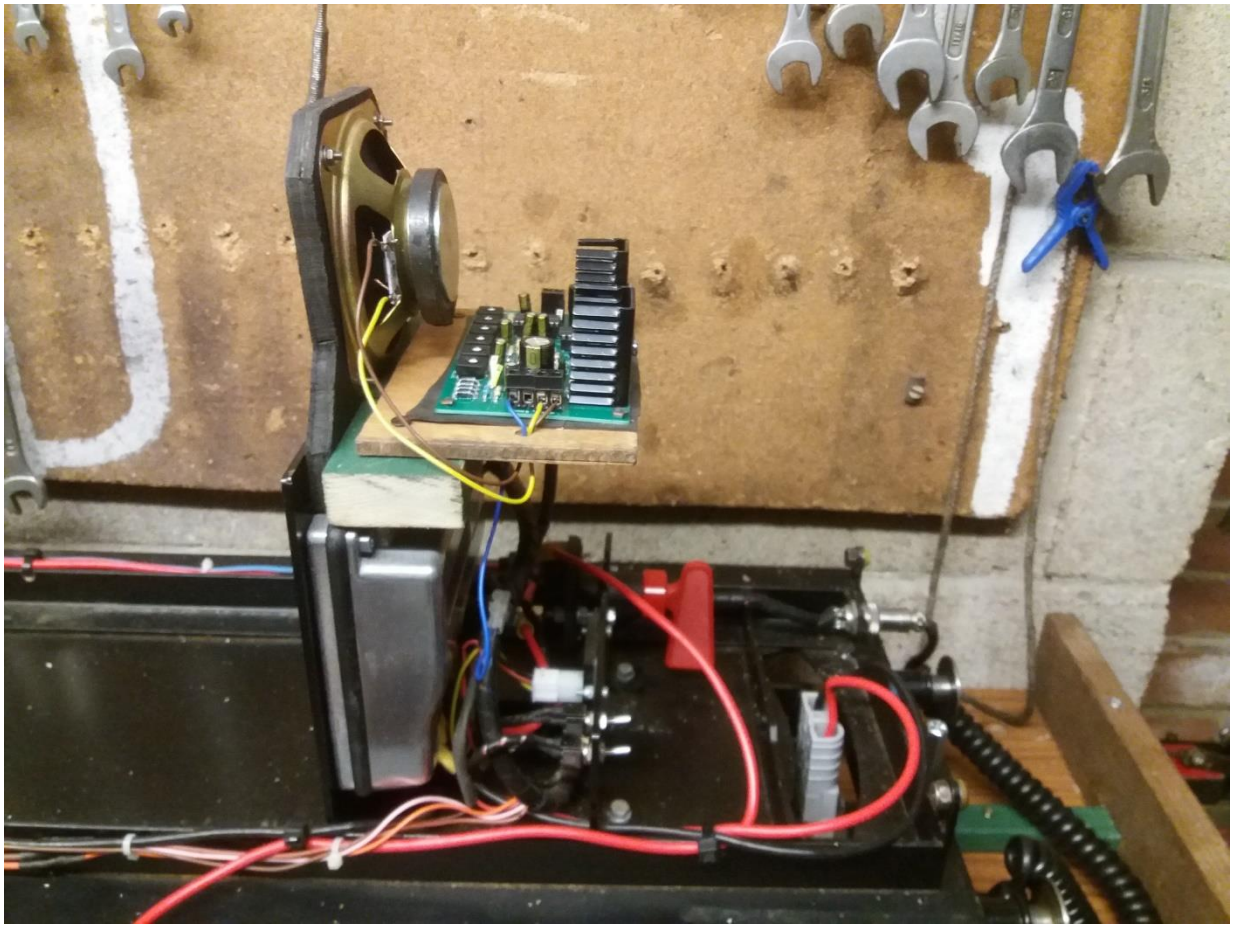
I have been playing with Hercules to personalise it (Him?) a little. I felt he was a bit of a plain jane so my first mod was to put black and yellow chevrons on the front. Not brave enough to paint them on just yet so I used black and yellow insulating tape. Close up you can easily tell but from a distance it looks fine. On top of the cab you can just about make out a horn that I turned up from a piece of alloy rod. It's just resting on the roof for now as I plan to paint it before fixing permanently.

Next mod was to secure the body more positively. When it first arrived I thought it was missing the securing bolts as there were holes in the body front and rear which seemed to line up with holes in the chassis but no obvious fixings. However, when I checked with Paul at RoR it turned out that the holes were to allow light from leds which they used to fit but have since dropped. Though I can see the sense in allowing the body to be quickly removable I was unhappy about the degree of movement but I came up with what I think was quite a neat idea which best of all cost nothing. In the chassis holes I fitted plastic number plate bolts padded out with washers until the body just slides on easily but with virtually no fore & aft movement. With this done nearly all the sideways movement went away as well; so job done. Next job was to wire up for the horns. These operate through relays which arrived a few days ago. The switch to operate the horns is built into the control box and the necessary wiring is

tucked neatly under the controller. Based on information provided by Paul, I extended the built in wiring to the front of the loco as that seems to only place with enough room. I managed to find matching coloured wire so everything is now in place apart from the horns themselves which are waiting on Hermes to deliver. I did hit one snag which took me a while to sort out. Though wired exactly per the diagram supplied by Paul, nothing worked initially. In desperation I temporarily fitted a 12v relay and it all worked fine. I was about to fire off a snotty email to the supplier of my relays when I had a thought. These relays are fitted with diodes to reduce voltage spikes that could damage the Idrive controller. Sure enough when I swapped over the wires to the relay it all worked ok. Now all I need is the actual horns. The wiring looks a little like a rat's nest at present but will be fine once the horns are in place. The brackets to support the horns are a standard feature of the design. You can also see my number plate bolts in the picture.



Today the Sound Card I ordered on Sunday arrived, excellent service given the current state of chaos caused by the Covid-19 virus lockdown. This required a lot of thought on where to locate it but I finally came up with a solution as shown in the picture. All the wiring is done and tomorrow I will give a test – fingers crossed it will be ok. I knew that if I tested it tonight and it did not work I would not get a wink of sleep worrying about what I had done wrong.



Saturday 28th March 2020

The Hercules arrived today much to my surprise, didn't expect it on a Saturday. It was packed in a huge crate but the delivery driver had a pallet truck so he was able to wheel it straight into the garage.

Fortunately the crate is built up in sections so it was easy to dismantle to get at the loco. The section are also hinged so you can pack it away for reuse. No wonder it cost an arm and leg for the shipping. However, with the Covid-19 lockdown I couldn't have driven up to collect anyway.

Anyway, the loco is now unpacked and sitting on its new bench. I have ordered a set of horns from RonR but they seem a long time coming. I have also tracked downa sound card suitablke for the loco which I shall order on Monday. Right now Ihave plenty of time to get on with jobs like these. But goodness knows when I will be able to try it on the Westbury track.

This is what it looks like with the Body removed. Not a lot to see, the motors are underneath one for each axle set.

Saturday 21st March 2020

Don't seem to have updated the blog for a while though there have been some developments. I now have a full circle of 32mm track and 8 lengths of 36 flexi track currently as straights. I have set up some of it in the lounge and entertained the dogs by running the locos. The new Gordon is proving very powerful and happily pulls all the wagons without any wheel slip. I guess this is down to the metal wheels and 4 wheel drive. It is still manual but I have decided to convert it to wi-fi control. However, I am holding back on ordering another unit until they have released the upgraded software. This was due to be ready for the Peterborough Garden Railway Show on 4th April. However, along with practically everything else the show has been deferred due to the Covid-19 virus situation. I must email the guy and ask him when he will now release it. The weather is set fair for a few days so I may be able to set up the full 32mm track on the patio.

We are now in self-isolation which means that John Hill cannot now come up to stay for a couple of days and help me get Titch sorted out. In the interim, I have bought a 5" gauge Ride on Railways Hercules battery operated locomotive. Not sure I have mentioned this previously, but I saw one in use at the WWSME track a couple of months ago and was very taken. They are quite big – 34" overall and powerful enough to haul 8-10 people. It has four 24v motors powered by two 12v car batteries. You can get the full detail at http://www.rideonrailways.co.uk/fivegauge/page15.html. They are also very heavy, more than one person can lift comfortably . This is true of pretty much all 5" gauge locomotives I have discovered and why I have gone off the idea of buying a 5" gauge steam loco. However, the Hercules actually breaks down into 5 separate chunks none of which weighs more than 12kg. Plus of course getting a battery operated loco up and running is a lot quicker and easier than a steam loco.

Perhaps not so satisfying in the longer term but I still have Titch to work on and it seems likely that if I get another steam loco it will be a 3.5” gauge (as John Hill suggested long ago).

They are quite sought after and don’t often come up for sale but I was tipped off about this one by a friend in the WWSME. I agonised for a while but decided why not, if I don’t like it, I can sell it pretty easily without losing much if anything. This one is about 4yrs old but has had little use and has been given a clean bill of health by ROR who also gave SRS a glowing testimony. I bought it yesterday from Station Road Steam in Lincolnshire. Given the current lock down, I am not able to drive up to view and collect so it will be delivered by courier. Not sure when that will be but in reality its not urgent as the club is closed for the foreseeable future anyway. There are also a couple of mods I would like to do like fitting twin tone horns and a regulator operated sound card. Researching these right now.

I the interim I have give serious thought to how to store the loco. Being quite big and heavy it needs somewhere easy to access and robust and ideally allowing it to be worked on in situ. So today I have rearranged the workshop and built a very sturdy bench about 3’ 6” long and 15” wide. It has room for the MZ spares cupboard underneath with Titch in its box on top plus another shelf alongside for some other boxes. Quite pleased with the result as it has not really taken up any extra room in the garage and has freed up a couple of other shelves. Best of all the materials were all ‘in stock’ so it cost nothing apart from some of my time.

The green strips on top are aluminium and set 5” apart to provide a safe location for the wheels without the risk of corrosion. Not obvious, but the Himalayan Still fits pretty much whare it did before I installed the new bench and I can get another bike alongside it. Result but looking at the picture, I think it will be wise to add buffers at each end to prevent it rolling off.

Sunday 1st March 2020

Shortly I will have some SM32 track so I can run my 16mm gauge locos and wagons at home. Not a lot, two half circles which are being purchased from the WWSME and four 36” flexitrack straights ordered from Track-Shack which together will make up an oval. They will fit indoors if the weather is bad – more likely I will set it up on the patio so I can keep the dogs shut away from it. Our terrier is mad about trains and often comes up to watch the OO and N gauge layout in operation. The track is not intended to be installed permanently, just built when needed. Maybe in the longer term I will build a garden railway but not just yet. The dogs and the maintenance considerations are a concern.

I have also bought a set of 1200ma Lipo batteries. These are twic eth size of my existing batteries, still a notional 3.7v output but twice the capacity so should last a lot longer. They will probably only fit on Gordon as space is a bit limited on the Hudson but the former is quite a lot heavier so would likely run out quicker anyway.

Monday 24th February 2020

Just realised I have not updated the blogg for two weeks even though quite a lot has been done. I have now built the second battery powered loco ‘Gordon’ though it is manual rather than wi-fi control for the moment. It has been tested on the Westbury track and runs fine. Rather pleased with the twin air horns which I turned up from a piece of brass rod . In fact so pleased I made one for the Hudson as well. I am still working out the best way to fit lights and a wi-fi unit.

I have also overdosed on Phil Sharples wagon kits and now have a total of 6 which will make a nice train. Think I have enough for now. I want to fit a red rear light to the guards van but am still pondering on the best way to install the switch, battery and wiring.

What I still don't have is any 32mm track at home to test out my rolling stock but a chance discussion at club last Friday may produce some. Fingers crossed.

Other news is not so encouraging. I had a third attempt at steaming Titch last Saturday and it was if anything an even more miserable failure than the first two attempts. Despite everything I did I could not get the fire to burn strongly and the boiler pressure barely rose above 10psi. Very disappointed and a bit discouraged. Not sure what to do next. I am tempted simply to put it back together as a display only item for now and look into buying something which is actually running. I was offered a 5" gauge Simplex loco by a friend in the motorcycle club (who is also a member of the WWMES) for an affordable sum. It has a recent boiler certificate done at club and was said to be ok by the tester when I spoke to him about it. The drawback is that Simon reckons it is too heavy for one person to manhandle and he is a lot younger than me. Perhaps I should follow John's advice and stick to 3.5" gauge models. I may have mentioned it before but I was very taken by a battery powered diesel loco called a Hercules seen running at the track a couple of months ago. Even new they are a lot cheaper than steam locos and though also 5" gauge break down 5 chunks each weighing less than 12kg. Problem is even my eldest son says I would quickly get bored with something that did not require constant attention – he may be right.

Monday 10th February 2020

Last Saturday I took the Hudson to the club running day to meet up with David Adams. He also has built a Hudson, or rather his son has built it with some help from Dad plus a couple of trucks. They have used the

Locoremote as well but the slim version that does not provide lights. He was able to get this under the bonnet so overall much neater so far as wiring is concerned. On balance I think this might be a better option and I will most like buy the slim unit next time and figure out another way to provide lights. In the interim I have ordered a couple of coal trucks from Phil Sharples which arrived a few days ago, These are now built and I am just waiting for the PVA glue on the coal to dry – takes ages. I have also ordered another battery powered locomotive called a Gordon from Houston Gate. Still waiting for it to be delivered. Click **here** to see the Hudson running. I now have a driver for the Hudson which I have painted very similarly to Jake the Peg.

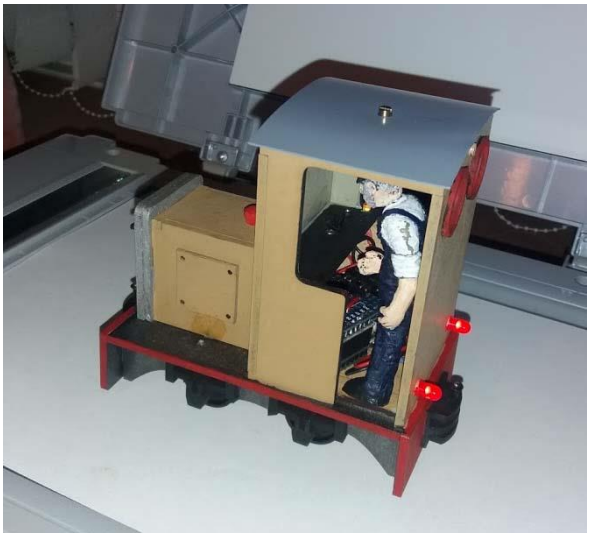
While at club David kindly let me watch as he put his Titch into steam. It was up to pressure and ready to go within 10-15 minute. I could not see that he did anything at all different to what I have been doing. I think there is nothing for it but to take the engine to club and let the experts show me how to do it. Several have said they will help. I just hope it is me and not something wrong with the loco.

I also took Billie along for a run and managed to get it up and running without issue. I did have problems with the Guards van which kept derailing but that apart it all went fine. The guards van does not like some of the points on the indoor track, next time I will try it outside.

Sunday 26th January 2020

I took the Hudson and the open truck to club on Friday morning to give the system a track test. It aroused quite a lot of interest as it seems I may be in the front ranks of those trying out the wifi control system. Anyway it all worked pretty well and in some ways is easier than testing at home as the club is so remote that phone can only see the locoremote signal so logs in automatically. We established that the signal was strong enough to reach across the widest part of the club circuit. In fact the only slight problem was the phone going into battery save mode too quickly and dropping the signal. This is potentially serious as the loco keeps running the last instruction received so is effectively out of control until the phone reconnects. However, it is easily resolved by disabling the display save function during future testing. Some doubts were expressed about the plastic wheels and the lack of packing weights but in fact we got no wheel slip not even when pulling quite a heavy wagon loaded with my Go-Pro camera. Interestingly, the performance was the same with or without the wagon suggesting the motor has a lot of reserve power and could possible cope with a higher voltage battery. If you click on the picture above, you can see a short video of the loco reversing at end of the testing. Next time I will set up the Go-Pro correctly and take some side shots.

The picture below shows the model now that it is painted. Not too happy with the results but the choice of colours for the main body was rather limited. Since I had 'borrowed' the paints from a friend and his main hobby is building aircraft and military models. So most of the choices reflected shades of camouflage. I should varnish it to make the model more robust for outdoor



running but I think I will wait a bit and see if I can find some other paint choices. The driver is Jake the Peg my one legged driver bought especially for Billie where the cab is so cramped there is no room for the second leg. Now need another figure for the Hudson.

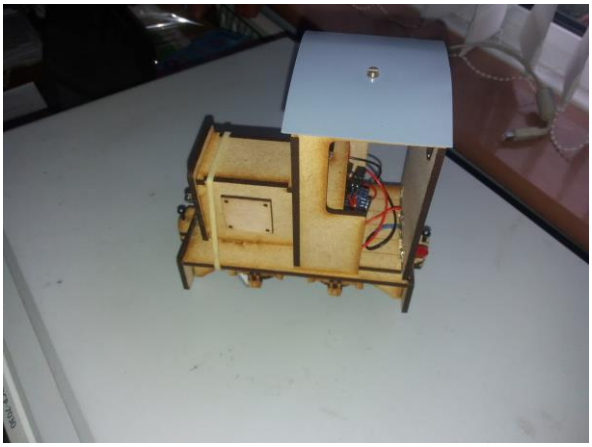
The bug has bitten hard and I have just ordered another battery operated loco kit called Gordon from Houston Gate. This one is a little larger and has metal wheels, all driven, plus a motor that can run up to 6v. This should give a higher top speed and potentially greater load capability when pulling wagons. I have been talking to Chris at Locoremote about this – his website mentions a 6v version of the wifi unit but he was a bit coy when I asked him about it. In any event he is working on an upgrade to the wifi unit so I won't order another unit until this is available. Sorting out my box of electronic bits & pieces the other day I found a 4xAA holder (which would give 6v) and a chunky variable resistor so will probably experiment with this initially.

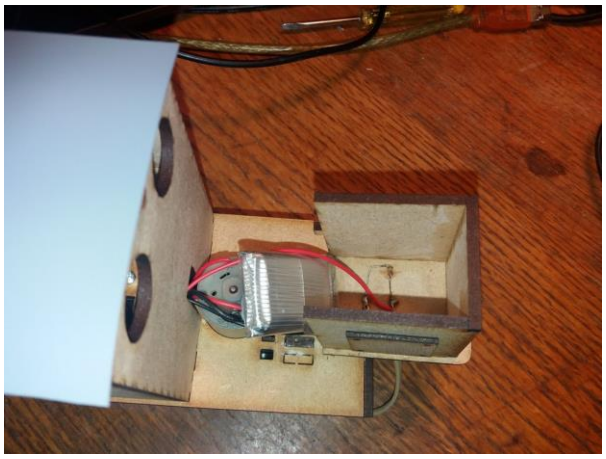
Thursday 23rd January 2020

For over a week now I have been laid low with some sort of bug. Even my wife thinks it's more than man-flu. It seems to come and go. You wake up in the morning thinking things are much better but usually by lunchtime I have relapsed. It's not life threatening or anything serious (I hope) but it does leave you struggling to keep warm and with no energy to do anything more strenuous than pottering around the house and browsing the internet. Which brings me to the point of this post.

The bits all arrived very quickly so I have been able to keep myself from going stir crazy. I was impressed with the quality of all the items. The Hudson loco kit from Phil Sharples is well thought out and well made. All the bits are laser cut from wood or mdf, sounds horrendous but works well. The locoremote unit itself is also well made and small enough to fit in the cab of the loco; it even came with all the necessary connectors cables which I was not expecting. Anyway, it is now all assembled and all works well – just what it said on the tin. Funnily enough the longest time was spent trying to figure out how to install the led lights which now all work – these are not part of the original design so no provision was made for them. I have also modified the Hudson design in a couple of respects. Firstly I need to be able to remove the cab back if attention as needed to the leds whereas the design assumes that this and the roof are glued in place. The picture shows the support bar which links front and back of the cab and provides a fixing point for the roof. The other mod is a bit more primitive at present. The bonnet needs to be removable to change the battery. Right now it clips in place reasonable firmly but this will slacken over time. The pragmatic short term solution is a rubber band. The led on the dashboard is along with the switch are also my own mods so I can leave the battery in place until it needs changing and there is visual evidence it is switched on. The display on the phone includes voltage levels and remaining battery life – I did say it was well thought out. Discussion with Chris about the operation of the unit have been encouraging and he has offered me a free software upgrade in due course which will incorporate some worthwhile improvements. He is still working on a satisfactory way to include sound which as far as I can see is the only missing feature.

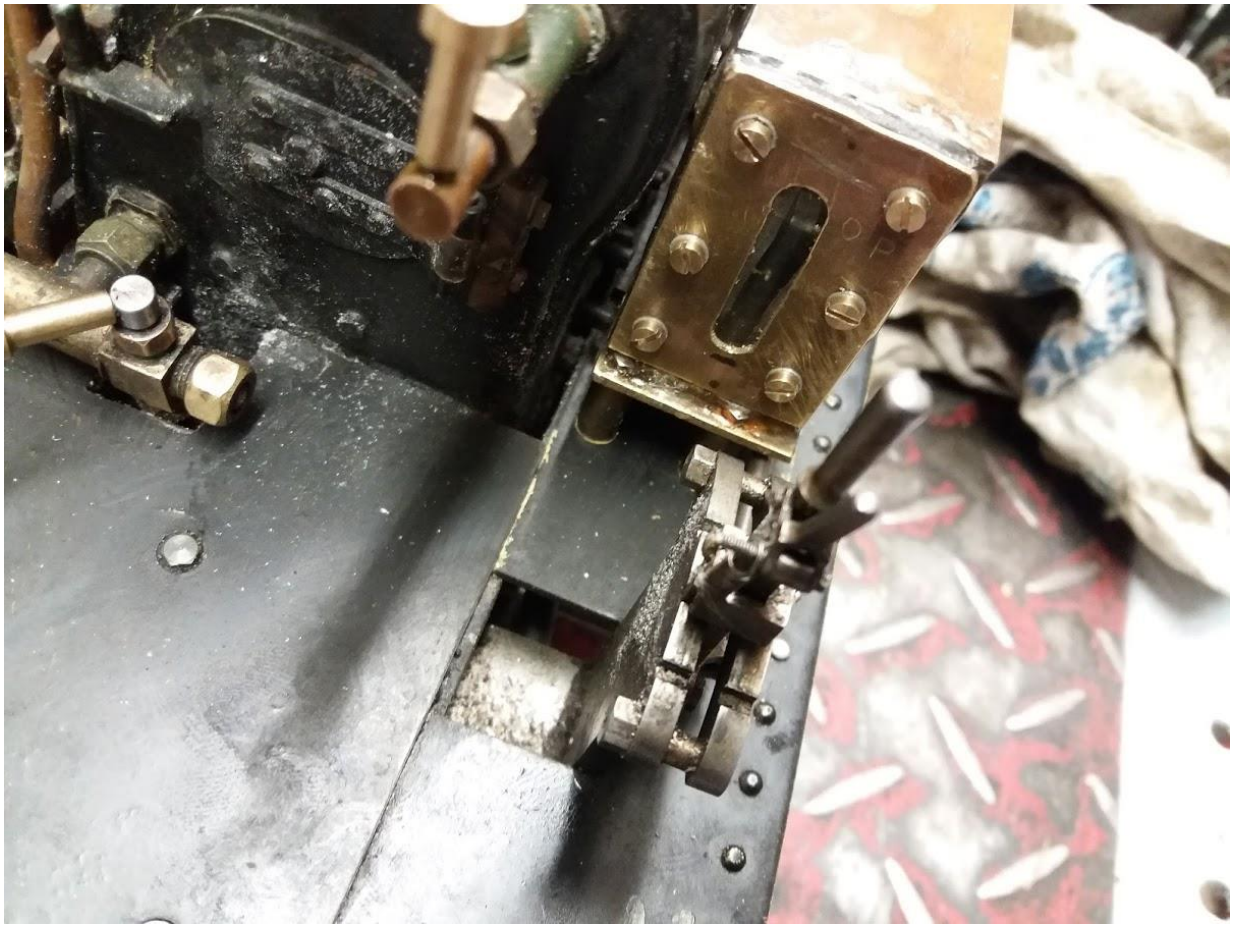
The unit has been tested, but only running on the carpet as I don't have a 32mm rail track at home. Hopefully I will be well enough to take it to Westbury on Friday to give it a proper track test. Assuming all goes well the next step is add the remaining detailing and paint the model; that may present the biggest challenge as I have no idea what colour scheme to use. The scheme Phil Sharples used does not appeal and differs anyway from the few pictures I have found of the loco on the internet. Not to mention actually finding some suitable type/colour paint. I suspect I will need to visit a model shop.



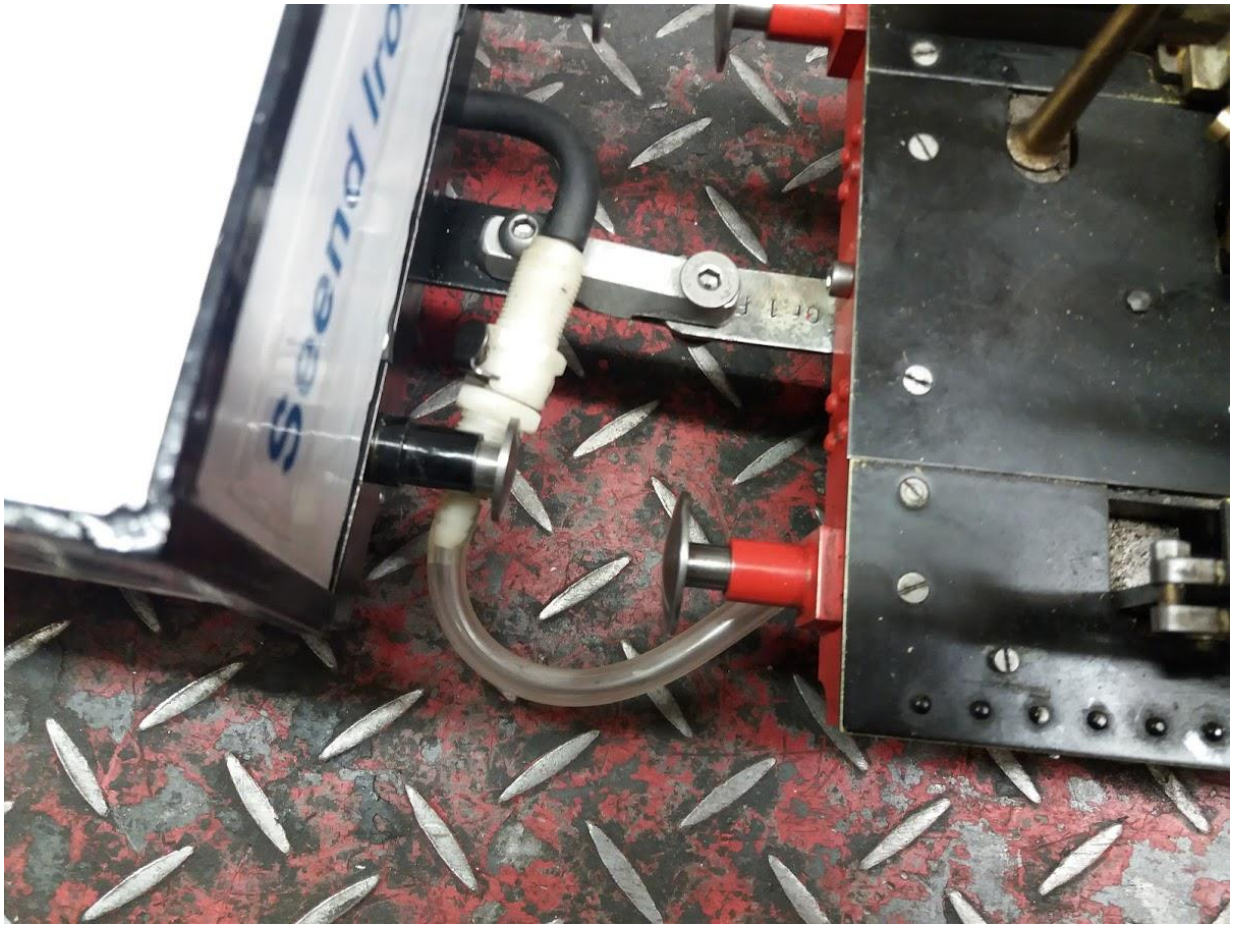


Thursday 16th January 2020

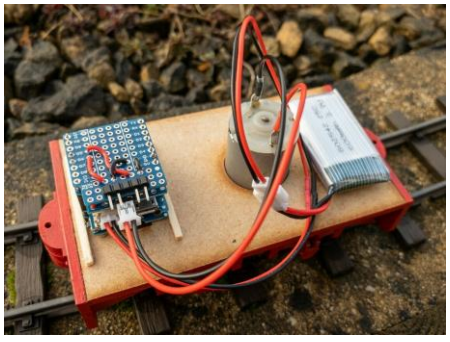
The brass screws for the water tank arrived this morning and the window is now secure. After some fiddling I have got the tank back on the loco and the water pipes connected. Thought it turned out quite well in the end and if it ever develops a leak again it will be easy enough to unscrew and make up a new gasket.



While I was working on this area I made up the connector to the wagon. I could not get water to run through initially but when I checked the anti-drain valve I found the ball bearing was very rusty and jammed solid so clearly not a s/s item. I suspect it had been attacked by the citric acid which I wash the tank out with after steaming. I have dispensed with my valve as the quick release connector I have now fitted includes an anti-drain valve. Not yet tried filling everything with water; that can wait until I have got over a miserable cold I am currently nursing. I was hoping to go the Westbury Club meeting this morning but decided it was not fair to pass on my germs to others. It's the running day tomorrow and I hope to feel well enough to go to that as I want to watch David Adams steam his Titch to discover what I am doing wrong.



As is the way of things when you are not well, I have kept myself occupied by surfing the net and have found an interesting new 16mm gauge project to investigate. You can buy kits to build battery powered locos, mostly derivatives of diesel powered shunters. They are quite cheap and I have pondered about them previously. What tipped the balance was the discovery of a remote control module, also quite cheap, that will fit inside these locos. They are not radio controlled, instead they act as wi-fi routers which you can connect to with your mobile phone or tablet. The system provides forward and reverse selection, speed control and led light control. No sound control at present, but I have been in contact with the guy selling these kits and he seems very enthusiastic and is trying out ways to provide sound as well. I have ordered the electronics kit, a set of LIPO batteries (the sort they use in drones) and kit to make a Hudson shunter.



Should be fun and opens up a number of possibilities if it all works as anticipated. Clearly it is not compatible with 16mm live steam locos in its present form but who knows.

Monday 13th January 2020

Is it really 3 weeks since I updated this blog – time flies. With a succession of visitors over Christmas and beyond New Year, There was not much opportunity to work on Titch or the wagon until last week. I had another go at steaming Titch which was a bit more successful. I got the pressure up to 50psi and was able to prove that the regulator now works. On the rolling road, I had the wheels wizzing round both forward and in reverse. However, I could not keep the fire drawing properly even with the blower working and once the pressure dropped to around 25psi all motion stopped. Very quickly the fire went out and nothing I could do to revive it. I noticed there was quite a lot of water under the loco and realised tha the plastic window on the RH water tank had come unglued, araldite was not really up to the job it seems. So the water tank had to be removed for repair. This time it is glued and held on by an outer brass plate fixed by 6 8BA screws. At least it will be when the proper brass screws arrived. I only had steel screws in stock and they are not suitable as a long term repair as they will rust through.

On the wagon front things progressed much better and it is now reinforced at the top with brass strip and has been painted. The only thing I noticed whilst taking the picture was that one of the springs is not really strong enough now that the frame is carrying the extra weight. Easy enough to beef this up and I may do all the springs as load will increase again once its full of water and coal. Quite pleased with the way it has turned out – pity it does not have an engine to tow it.

Monday 23rd December 2019

On the wagon front things are going well. I have given the body another water test and there was just one tiny leak which I have now soldered up. A plug for the filler hole has been made and the bodywork rubbed down for painting. I need to get some etch primer – probably won't be able to do that until after Christmas but no hurry. I have also decided on the name to appear on the sides –'Seend Iron

Works'. Wiltshire is not well known for coal or iron mining – lots of gravel pits and of course the Cement works at Westbury. However, Seend a small village about 5 miles away did have an iron works with 5 smelters and tramways initially to the K&A canal, later to the railway when they built the Devizes link. It opened commercially around 1855 and continued for about 40 years. The ore was very high quality but the coal for smelting had to be brought in which made it marginal for profitability, combined with poor management. The mine did re-open a couple of times in the 20th Century – around the time of WW1 and WW2. No idea of the design of their wagons, records are very skimpy on this venture but they certainly exported the ore to various locations in Wales and of course they had the tramway which looks bigger than narrow gauge. Anyway, I thought it would add a nice local touch to my project and I doubt anyway can prove me wrong.

So far as Titch is concerned things are not going so well. I admit that I have been putting off a second steaming test but this morning I finally knuckled down. Sadly I just could not get the fire to burn properly. No sure what I did wrong, John Hill managed to get it up to pressure fairly easily when he did the initial steam test. I thought I had followed the same procedure but it just would not pick up even with the encouragement of my gas torch. Most I could get it up to was about 25psi which was barely enough to get the pistons moving. In the end I abandoned my attempts and let the loco cool down. Later I drained the water and cleared the firebox. An amazing amount of unburnt coal, charcoal and even bit unburnt bits of the firelighter came out so maybe I just put too much in and clogged the grate.

I was worried about the reluctance of the engine to run so I put my adapter back in and applied compressed air. The regulator worked fine and it ran in both forward and reverse so at least that all seems ok.

Thursday 19th December 2019

The central reinforcing bar has been fabricated along with the couplings and can be seen fitted to the frame in the picture below. The couplings are set at the same height as the couplings on the locomotive.

Wednesday 18th December 2019

On Sunday I reworked the brakes on the trolley and they are now much more robust. The lever is now at the front instead of behind my bottom. It all seems to work quite well though I am not totally happy with the actual brake shoes. I thought these were some sort of composite material, but they are actually steel. They are also parallel rather than tapered to conform to the 4 degree slope of the wheels. If the next test on the track is not satisfactory, I will try gently shaping them with the needle files. First though I will investigate bonding on a lining material which would have a better level of friction and be easier to shape. The footrest brackets are now supported by a piece of timber and no longer flex.

On Monday I painted the frame and left it overnight to harden so on Tuesday I was able to fit the axle boxes, the wheels, the dummy spring holders and the actual springs. This all took a lot longer than I expected as I hit a couple of snags. Firstly one set of wheels were very tight when assembled into the frame. I thought at first it was my replacement axle being slightly too long but in fact it was the same with both axles so the problem lay elsewhere. In the end it turned out to be the hole in one of the axle boxes being too snug; once opened up to the same size as the others, all was well. The other snag was the wheels rubbing on the lock nuts on the axle box retaining plates. These were only a belts and braces item as the holes in the horns were tapped anyway. I carefully sawed off the excess length of thread and all was well. Pretty pleased with this and just had to show it off to Mrs F.

Incidentally the box the wagon frame is sitting on contains a Roundhouse ‘Billie’ 16mm model steam locomotive I bought last week. More about that later.

The remaining item on the frame is the couplings and the more I thought about this the more I became concerned about the stress which the chassis will endure when in use. It has to cope with being pulled by the locomotive and in turn to pull a hefty riding trolley with an even heftier driver. I plan to reinforce it by putting a piece of angle iron down the centre to which the couplings will be attached. Thus the angle iron will take all the stress, not the frame. It will not be visible once the body is in place. May not be necessary but it will give me peace of mind.

Saturday 14th December 2019

Despite my best attempts at soldering, when I filled the water compartment of the tender, there were several places where water was leaking out. I marked these up and after draining the water, re-seoldered these points. Took me two more goes before water finally dropped dripping out. I was getting close to buying some Petseal as used to seal motorcycle petrol tanks. I felt that the tank looked a little bare so I have ordered some ¼” angle for the corners and half round strip for the top edges.

The frame is now fully fabricated and today I tidied it up by trimming the excess threads on the fixing screws. All it now needs is painting then I can add the wheels, axle boxes and springs.

I was never totally happy with one of the axle assemblies, I had to use bearing fit as the wheels were a slack fit on the axles. This worked remarkably well in respect of holding the wheels firm but they were not running true. So today I made a new axle and spent a long time making sure the wheels fitted perfectly without any adhesive. Well worth doing as now they both run true. One thing worthy of note was that the bearing fit had made a really tight joint and I had to get it really hot to separate wheels from axle.

On Friday I took the riders cart to Westbury to try it out on the track. Results were mixed, It runs well and the footrests are in a good position. However, I do need to beef up the footrest support bracket and as suspected, the brake is rubbish. The former will be fairly easy to fix, the latter needs more thought.

Wednesday 11th December 2019

The bits did arrive on Tuesday and I have made a start on fabricating the dummy springs. It's very slow work, as there is a lot of milling and I have needed to be creative in the way of holding the workpiece on the table. However, I am over half way there, two made and the third started. The picture shows them in position but they both a little more fettling. The actual springs will fit inside the dummies with a plunger that bear on the axle box. Not shown in this photo.

Monday 9th December 2019

Well I won't say it was easy but the wagon body is now together and mostly soldered up. Those paying attention will remember that I silver soldered the fixing screws onto the wagon base plate and the heat distorted it. Subsequently I screwed it to the frame and applied a lot of heat which seemed to get rid of most but not all the distortion. Luckily the remainder of the body was very rigid once assembled and I was able to use it to straighten the remaining kinks in the floor by using G cramps to hold it square whilst I soldered. Had to do it in small sections as I only had a couple of large enough clamps but it seems to have worked. I will know better tomorrow when it has all cooled down. There are still the top corners to solder and I need to check the water tank for leaks but it is nice to have the bulk of this task behind me.

GLR Kennions have confirmed the bits I ordered are in the post so I may be able to start the dummy springs tomorrow.

Sunday 8th December 2019

Today I stripped down the wheels assemblies to measure the bearings. In my haste to put the wheels in the frame, I had not got round to checking the overall height of each one nor the height of the wheel spindle holes. Just as well I checked as there was quite a bit of variance which would not have helped the wagon to ride smoothly. However, I was able to file them down to the correct size as matched pairs. I also made up and soldered in place some caps for the two bearings that I had initially drilled from the wrong side.

I have also worked out a way of positively supporting the spring boxes. I am going to make my own dummy springs very similar in outline at least to castings shown in the LBSC plans. The material needed for this has been ordered. If it works, the cost will be only £3.50 compared with £6.50 each for the cast springs. They will be a bit fiddly to make but in truth the castings would have needed a lot of machining anyway. Quite a satisfying day.

Attention now needs to turn to the actual body of the wagon. In theory this should just clip together using the mortice & tenon joiners already laser cut. We shall see.

Thursday 5th December 2019

Been another busy week and things have moved forward on the steam related projects, mostly on the tender. The chassis has now been welded up to make it more rigid. The warped base plate has been secured to the frame and heated up a few times and it is now pretty much flat, hopefully enough to be able to engage the side plates. With luck these will hold everything square whilst I solder it up. All 4

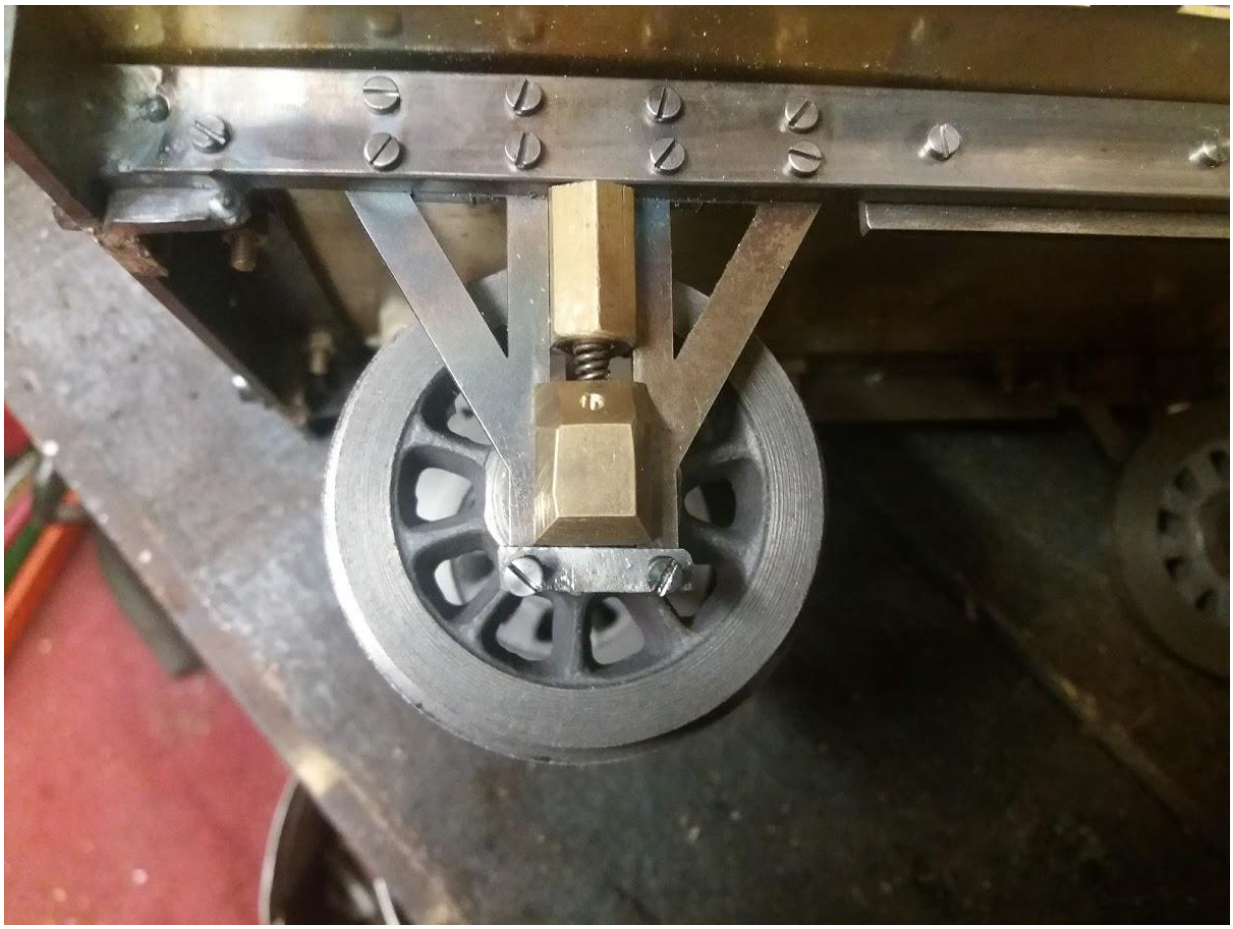
sprung buffers are now completed though they were removed during the welding process to avoid damage.

Perhaps the most satisfying achievement was setting up the milling head on my lathe for the first time and milling the slots in the axle boxes. I made these from a piece of 1/2” square brass rather than use the gunmetal strip bought for this purpose. Brass is not an ideal bearing material but it was much closer to the finished size and a lot easier to work with. In fact I was surprised how quick and easy it was once I had everything set up. I milled it as one strip then cut it into four pieces.

The magic ingredient was the horizontal compound table you can see in the picture. This gives a much higher working platform as well as giving two dimensional adjustment to line things up properly. Next stage was to drill the hole for the axle and an oilway in each bearing. Again the table proved invaluable for this and I have worked out how to make it even better.

The next stage was to make up the support strips at the bottom of the W irons that stop the bearings from dropping out. Yet another tedious job but once done I was finally able to fit the wheels to the frame. This is where I hit the next snag. The axle boxes are sprung and the plans show something called thimbles to support the coil springs. However, it is by no means clear and the plan assumes a dummy cast metal spring mirroring the leaf springs that would have been used on real wagons. You can buy such castings and David Adams kindly provided details of the ones he used though I have yet to purchase them. The issue is that these differ considerably in design from the ones pictured in the LBSC plans and do not provide a housing for the coil spring thimbles. If you look at the picture you will see I have come up with a temporary solution which does mean my wagon is now sprung but it is not viable for real use. The hexagon bar is only held by friction and spring pressure and would come loose as soon as the wagon was used on a track. I am still agonising over a better solution which is both

secure and easy to assemble. I have several designs that satisfy the former criterion but none which satisfy the second.



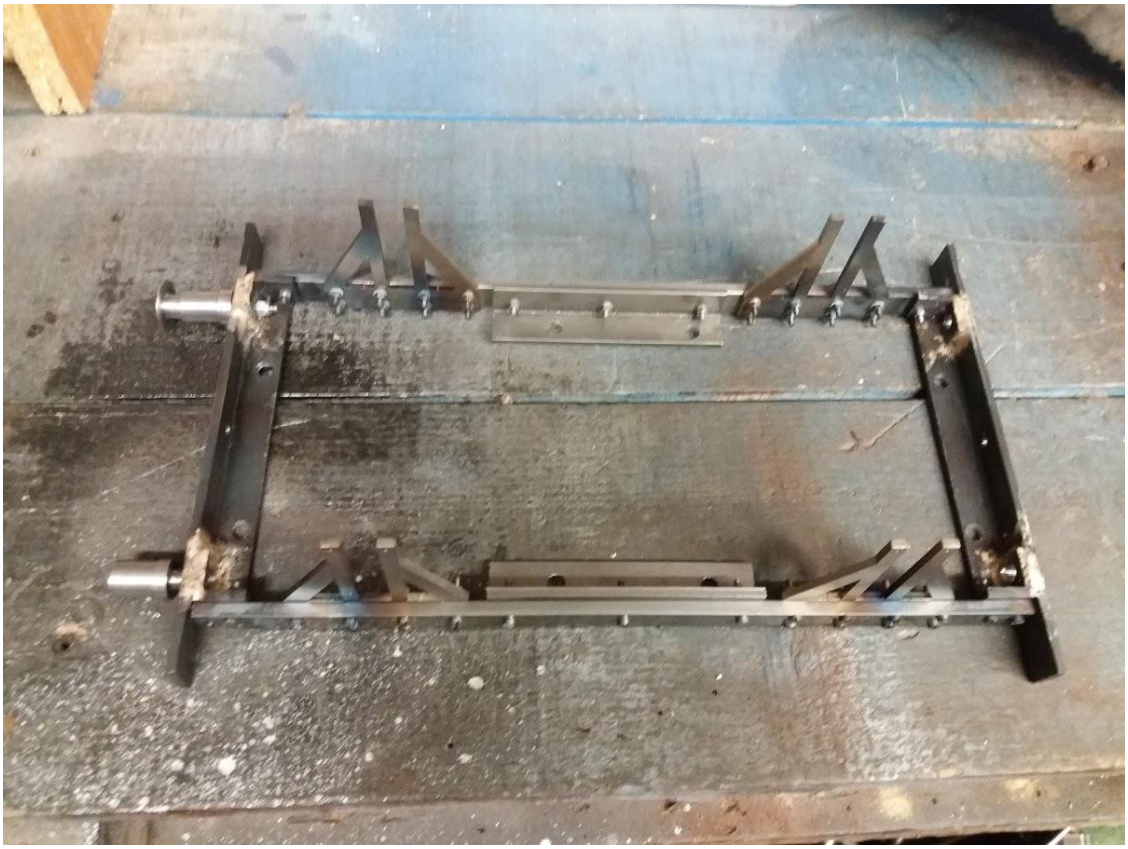
In between times I have revisited my riding trolley and devised a way to fit footrests that can be unbolted for easy transportation. I am getting closer to steaming Titch, deferred due to the very unpleasant weather. I now have a couple of jars of charcoal soaking in paraffin to act as fire lighters. No more excuses really but it will not be tomorrow as I am helping at the WWSME open day.

Tuesday 26th November 2019

Making good progress with the coal wagon/tender. The attrition rate on drills and taps has slowed down thank goodness and I found a few more smaller drills in the model railway room which helped. The basic frame has been constructed and the W frames which support the wheel bearings are fitted. The latter stage was relatively easy as the W frames were already laser cut and included guide holes for the fixing screws. I had been hoping to use my newly acquired Pillar drill but frankly it is not up to the job. Probably ok if you are using larger drills say 5mm and above but useless for things below this as there is so much play in the shaft and the chuck does not run true. I have asked Aldi to arrange a return as it is no use to me for model making – pity.

As you might expect I made a few mistakes along the way but thankfully I have recovered from most of them. The frame is mostly held together by nuts and bolts and will need to be welded or brazed to make it truly rigid. This might not have been so essential, but one of my mistakes was to silver solder the fixing bolts to the base plate of the body to ensure there were no leaks. Well I achieved the latter objective but the heat has distorted the brass base plate. I am hoping that bolting it to the frame will sort this out which is why it needs to be very rigid.

This afternoon I moved on to making the sprung buffers. I was not too happy with the dimensions given in the plans (looked a bit flimsy to me) and did not really understand how it all worked so I have designed my own and made the first one and yes it does work. So now all I have to do is replicate it 3 more times. One thing for sure, model engineering takes up a lot of time. I could have stripped and rebuilt at least two MZ engines in the time I have spent on getting this far with the wagon. Pictures below show progress made:



Sunday 24th November 2019

Its not what you know but who you know is a saying that is a frequently quoted. Very true in my case as talking over the problems with the regulator at the Model Engineering Club on Friday I was offered some of the correct flux for silver soldering s/s. In fact Terry dropped it of on Friday evening whilst walking his dog as he lives nearby. On Saturday the bits were soldered and the regulator reassembled. I also drilled and tapped the regulator body so I could positively lock the two parts together, Previously they had been soft soldered which I had to melt to get the valve apart. Once completed, the assembly was inserted into the boiler and to my relief everything lined up pretty well. So Titch is now ready for another attempt at a steam test. Date yet to be finalised.

Today I turned my attention to the tender wagon and am part way through building the lower framework. At the moment everything is bolted together as per the plans and is very firm but my intention is to braze the actual chassis; I do tend to over engineer things. For the moment it is helpful to be able to dismantle parts to add various other components. Managed to break a couple of drills and my 8BA tap already and I suspect a few more will get sacrificed before the project is complete. Not yet used to handling things as small as 1mm or 2mm. Tomorrow will see me at the DIY shop stocking up though this will likely be after a trip to the dentist as I have raging toothache at the moment.

Thursday 21st November 2019

A lot of activity over the last week, mostly positive. I assemble the wheels on the axles with some Loctite bearing fit and left it for 24hours. They are now very firmly fixed and run true on the track. As they will be carrying very little load, I think I may have got away with it. If they don't work in practise then I am no worse off and can still make up new axles.

The steam test at Exeter went well until we came to check the loco in action – it flatly refused to run. The good news was that there were no leaks and even the whistle now worked properly which was a relief. Eventually we realised that the regulator shaft was no longer connected to the whatever was at the other end so no steam was getting to the cylinders. We partially dismantle the assembly but in the end I brought it hoem to continue the investigations. Disappointing but not entirely surprising and there were some postives. I bought a few more useful tools from John and he gave me some charcoal and a tub of Welsh Steam coal so I could fire the loco at home once the regulator was sorted. On the way home I called on another friend called Ern who has kindly given me the makings of a riding trolley.

Back home I eventually managed to dismantle the whole regulator assembly and discovered that the rod had come away from the valve because the silver soldering had failed. Both parts are stainless steel and it appears that special flux is needed to silver solder s/s. The suspicion is that ordinary flux had been used as there was no penetration of the joint and only a very small area of contact. The components are shown in the picture. In some ways this problem was an opportunity as the regulator arm (bottom item in picture), was only screwed onto the shaft and locked with nuts either side. If the valve seized (which it is prone to do) the arm comes loose on the shaft which could be embarrassing. I have now filed a square on shaft plus a short threaded section so the regulator arm is positively located. This will present some difficulties at reassembly which I will cover later. The issue I am wrestling with at the moment is securing the valve to the shaft. Discussions with several

knowledgeable people have yet to agree on the ideal solution. My preference is to silver solder but using the correct flux but getting hold of that is another matter.

The issue with reassembly is alignment of several elements. The hole in the top left piece must be vertical for the steam entry pipe. The long brass tube on the right will only locate in the boiler backhead in one position as the fixing holes are not symmetrical and it must finish up firmly against its gasket. Plus the shaft must finish up so that the squares allow the regulator arm to be in the right position. Frankly I have no idea how this can be achieved as yet.

On a lighter note, the laser cut parts for the tender wagon arrived this morning and look good, though right now I am far from confident it will ever be needed for this locomotive. Also the riders' trolley is nearly finished with working brakes, connecting link and a seat. The wheels are 5" gauge which may look odd behind a 3.5" gauge locomotive but they should make it a more stable and who knows, maybe I will get a 5" loco at some point. I realise looking at the picture that I will also need to provide stirrups or a footboard to put my feet on.

Saturday 16th November 2019

I borrowed a couple of carbide tipped tools from Terry Dand these certainly cope with the hard outer shell of the wheel castings and all four are now done. However, I think a good part of the improvement was down to reducing the turning speed of the lathe. Changing speeds has always been a mystery to me ever since I bought the lathe over 15 years ago – I could never see how it could be done. Eventually after much studying of the manual and on the internet I realised that it had been delivered with the belts in the wrong locations and with motor adjusted to cope with this incorrect assembly. Now both faults have been corrected and changing speeds will be a simple task for the future. It is now set to 250rpm which is much slower than before and more suitable for my work – result.

That was the good news, the not so good news is that I have made the spindles but not very well. Despite carefully measuring the diameter (or so I thought) in every case I have removed too much metal and the wheels are a slack fit on the spindles. I really don't know what went wrong, after the first attempt I was extremely careful but the second was just as bad as were the 3rd and 4th. One spindle should be ok with bearing fit but the other needs to be remade and I will need to order more steel rod. Fortunately, its cheap enough and I daresay the old spindle(s) will come in useful for other jobs. The only good news is that I did get the lengths ok and when offered up to the track the wheels fitted perfectly. Practise needed I guess.

Tuesday 12th November 2019

Titch is now back in her box (JP regards it as of the female gender when I asked him) as there is not much more I can do until it has been given (and hopefully passed) its steam test. I am due to go down to Exeter to get this done next Monday 18th November. I did however, do one other job which was to refit the whistle and the floor of the cab (which provided the mounting for the whistle). This required a certain amount of fiddling and filing because of the changes I made to the water gauge assembly but nothing drastic.

With time on my hands I decided the time was right to begin the coal wagon. Having studied the plans, a number of things will have to wait until the bits arrive from Modelengineeringlaser. However, I have all the bits needed for the wheels and axles so that's where I have started. The wheels are cast iron and require machining, something I have not worked with before so I did some research on the internet. This was very fruitful as there are issues over machining cast Iron, most of which I have subsequently encountered. These fall into two categories. The first one is mounting the wheels in the lathe as they are somewhat irregular and would probably best be done in a 4-jaw chuck; which I don't have at present. Eventually I found that by using the reverse jaws I could hold the wheel and get it to spin reasonably accurately. However, these jaws overhang the work (I'll take a picture some time to show what I mean) so that getting the cutting tool in position without damaging it or the lathe is not easy but I did manage to overcome it eventually

The second problem is the extremely hard outer coating of the caste iron which blunts tools very quickly and makes the lathe judder. The first wheel took me nearly a whole day to finish though part of that was making a mandrel to hold the wheel for final finishing to size. This part is easy as Cast iron works nicely once you get through the outer crust. The lesson I learned meant that the second

wheel only took an afternoon but it is hard dirty work. The mess it makes on the lathe is unbelievable, the dust gets everywhere including in my hair and up my nose. I am going to tackle the axle next and put of the second pair of wheel until I have acquired some better turning tools. Carbide tipped tools seem to be the way to go so they are now on my wishlist. Anyway a picture of my first two wheels shown together with the wheels in their 'raw' state.

Saturday 9th November 2019

Quite a lot of progress in the last few days. I got the clack valves back from John on Thursday. In the interim I have replaced all of the low pressure water pipes that connect the water tanks together and to the pumps (one hnad pump and one mechanical pump). The original pipes plastic pipes had hardened and would no stay in position reliably. While I was at it I made a t-piece to fit in the tube linking the two tanks which enables. The third tube runs to the back of the loco as a connection to the water wagon which I plan to build. Making the t-piece was easy getting it connected and in place without kinks was a nightmare. Anyway the clacks are no refitted which allows the tanks to be put back and all the plumbing to be connected up. Two other jobs were tackled, the first was to make a check valve for the tender connection pipe so that the water would not drain out of the loco tanks. I also had to drill a hole in the side plate for the pipe to run outside the frame. It would have been right against the firebox if it was run inside. The other pipe beneath my check valve is the outlet for the water gauge blowdown valve.

The second job was to reposition the bypass valve relief connection. This allows excess water from the mechanical pump to be pushed back into the tank once the boiler is full. The original connection came out the side of the valve and fouled the side of the loco kinking the pipe. I have blanked this off and put a new connection in the top of the valve. I must say that making and repairing brass fittings and silver soldering is great fun. Very time consuming though; whole days go by with just one tiny fitting to show for the effort.

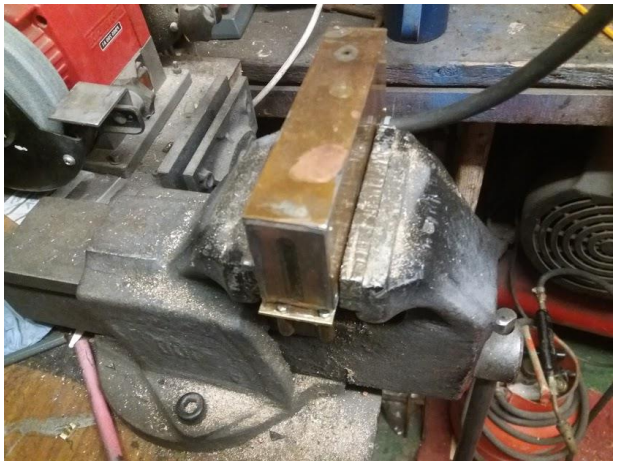
The water tanks have now been filled and the hand pump worked well quickly filling the boiler to a working level. No immediate leaks and when I topped up with compressed air there was no bubbling noise suggesting the clacks were leaking. So looking hopeful and I have left it filled to see if the levels remain correct overnight.

I went to the WWSME meeting on Friday and was presented with a large sack of anthracite (pea size) by a kind chap called Bill. I was also able to find issue 3019 of Model Engineer in the club library which contains the plans and instructions for building a coal wagon to be used as a tender for Titch. I have now ordered mot of the parts required for this project but they will not be delivered for 2-3 weeks. I was pleasantly surprised to see a friend from our local VMCC section turn up. I knew he was a model steam railway enthusiast but had not realised he was also a long standing member of the WWSME. He has invited me to his house next week when he and a few friends are going to run some stem locos. In the afternoon I went to West Ashton (just down the road from me) and bought the gas torch and associated bits shown in the picture below. The propane cylinder is a whopping 19kg and seems to be quite full so will probably last me a long time. My collection of tools is lowly growing but noy yet complete. A 4 jaw chuck and a pillar drill are still on the short term wishlist and doubtless other things will pad it out.

Tuesday 5th November 2019

Bonfire night and I can hear fireworks crackling and banging as I type. Fortunately our dogs seem fairly relaxed about the noises. The water tank has now been repaired as shown. I used a piece of clear acrylic sheet which is very tough and flexible with araldite as the adhesive. It's currently full of water to make sure its leakproof. Bit dubious about whether the water level will actually be visible when the

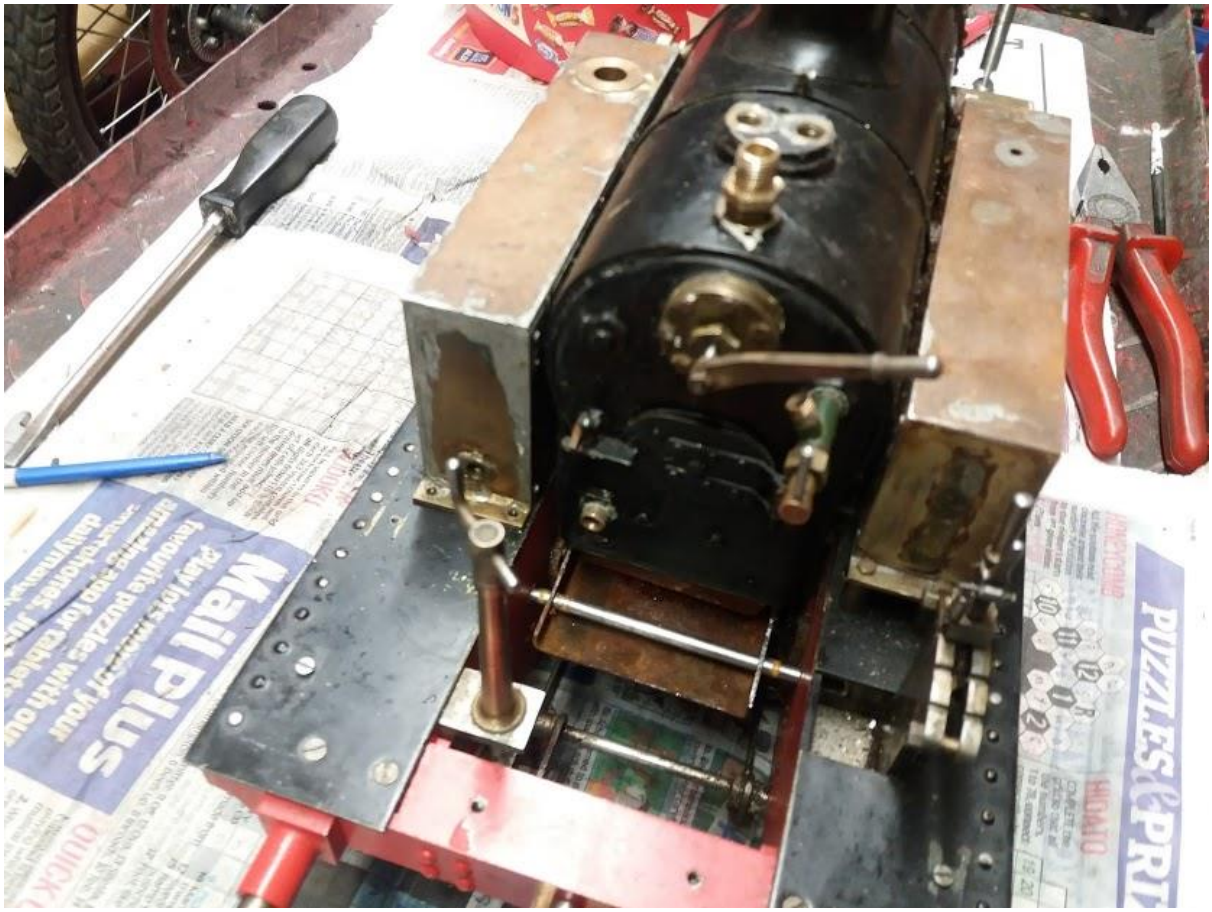
tank is in situ. Last night I filled the boiler with a citric acid solution to clean out any limescale. What came out is shown in the second picture. It was clear water when it went in but came out this pretty blue colour. Anyway, it is still very clear and no bits so I assume all is well. Boiler now washed out with fresh water. Not much else I can do with Titch until I get the clack valves as these have to be inserted before any other rebuilding can be attempted.



Monday 4th November 2019

Lots of time spent but in some ways the project is going backwards rather than forwards at least as far as Titch is concerned. The new water gauge and its fittings have been pressure tested and are now leak free. Air was still leaking out but more slowly so I decided it was time to put water in the tanks and test out the pump and the associated plumbing etc. Mixed results. The pump does work albeit slowly. Running under compressed air with water in the boiler showed up even more leaks. The first was an own goal, I had drilled a fixing hole for the new water gauge a bit to close to the main channel. This was easily fixed and is now leak free. Second source of leaks were the two clack valves. These are supposed to prevent boiler pressure feeding back into the water tanks via the pumps. Judging by the bubbling noise they were clearly not doing their job. Third source was the whistle valve. I had already tried cleaning the clack valves in situ but obviously not successfully and they need expert attention.

To get the clack valves out meant removing both water tanks, not an easy job as the fixing screws are well hidden. Likewise, the whistle valve is part of the turret manifold so virtually everything else had to be removed. The parts are now on their way to Exeter for refurbishment by John Hill. One of the other things that puzzled me was the apparent lack of water in the RH tank. This is fed by a pipe from the LH tank and my first thought was the connection pipe was blocked or damaged in some way. However, more detailed investigation showed that the problem was totally different. The RH tank has a large window at the cab end sealed by a thin piece of clear acetate sheet. This had come unglued so the water was simply leaking away. I imagine the window was provided as a visual indictor that the tank was filling properly. This is quite sensible and I shall replace the window as part of the repair. You can just about see it by the forward/reverse lever though I had never noticed it until today.

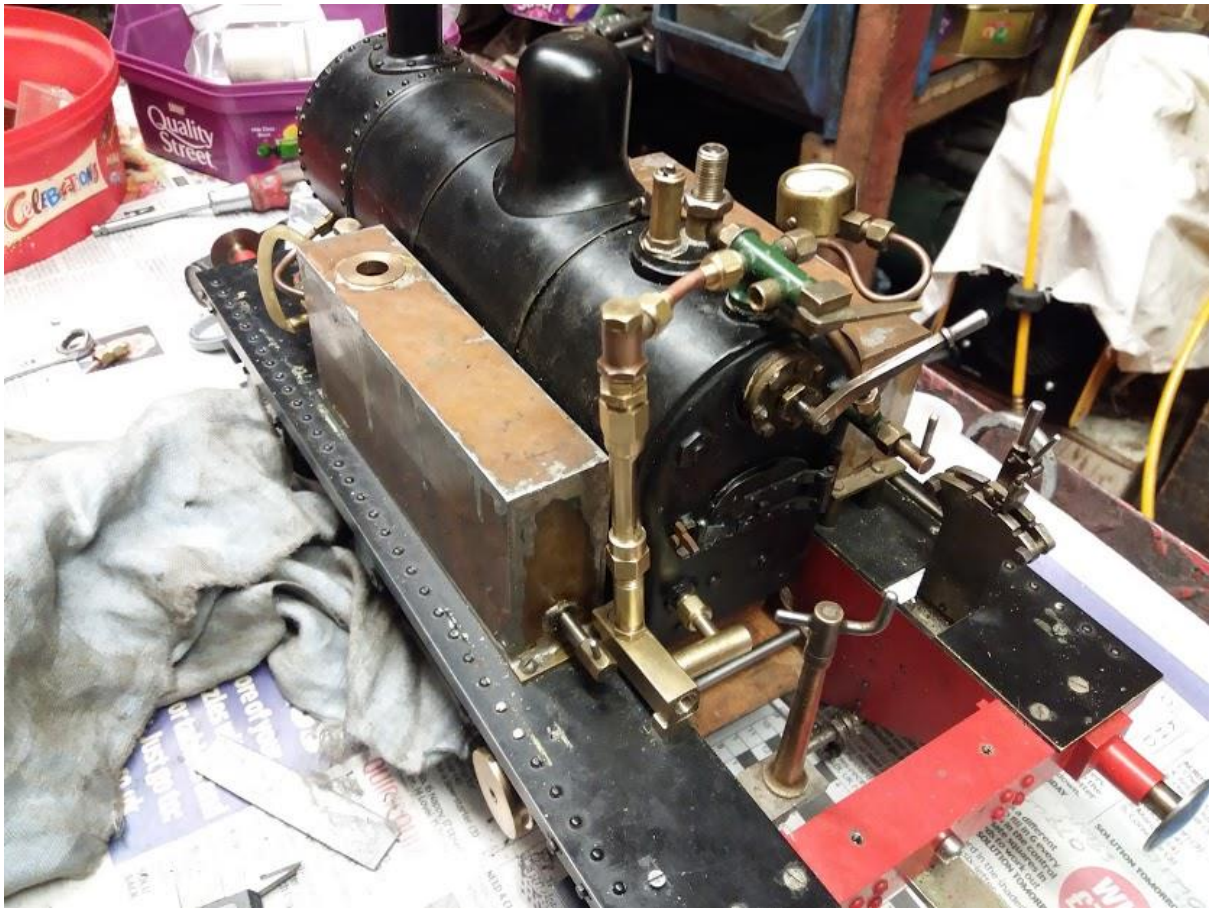


Last Friday I went to Westbury for their regular meeting and also to see David Adams who was running his Titch model in steam. It goes amazing well and ran for over an hour without issue. He very kindly answered lot of my questions both about Titch and steam locomotives in general. He has since sent me quite a lot more information including the plans for building the Coal Wagon based tender. Something like this is going to be essential for serious running on my Titch as it has no coal bunker and a tiny water capacity. Even with the additional water in his 'tender' David had to refill with water a couple of times during his session.

I also picked up useful information on gas torches and soldering and best of all, someone is bringing down some kit for me to look at next Friday. In the interim, Mike Davis has loaned me his gas torch and Propane cylinder. With this I was able to put into practise all the theory and successfully solder up the water gauge.

Thursday 31st October 2019

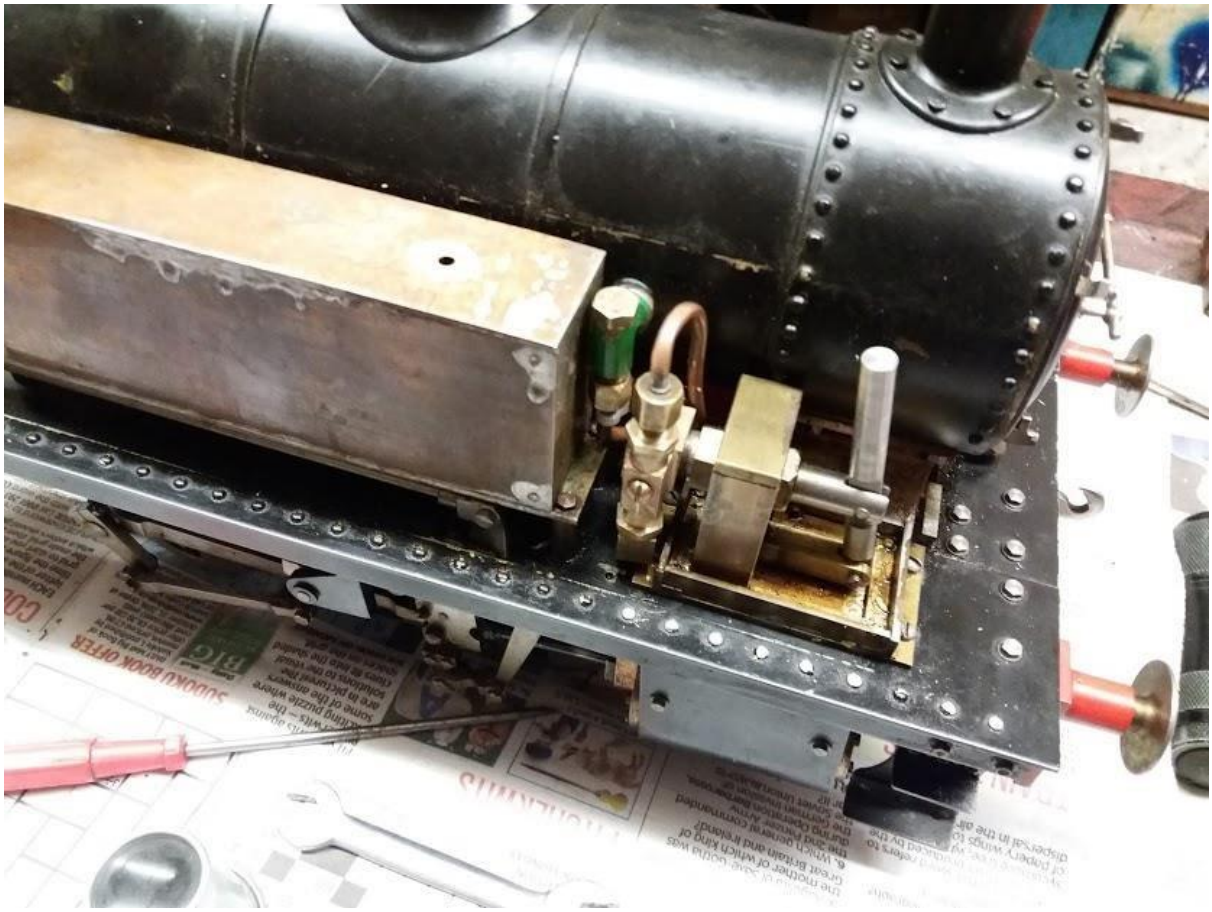
I have spent a lot of time in the workshop and finally come up with what I think is a better design for the water gauge. It is tucked in more neatly and though it looks the same, it is has a one piece shroud for the glass tube to provide additional rigidity. Also because with hindsight I was afraid the top section of the original design could blow off under steam pressure. Not shown in the picture is the gauge blowdown valve which will screws into the circular tube below the fire door.



All I need to do now is solder up the fittings. Which brings me back to making a decision on what gas torch to buy. I consulted Mick Marchant, a friend at the dive club who taught fabrication and welding at the local college. He was not able to offer any advice on what particular model to buy but he has offered to give me a lesson and lend me his soldering kit. A similar offer was made my Mike Davis from the VMCC who was a plumber. So a bit spoilt for choice. It is the WWSME meeting tomorrow and I will see if anyone there has any advice to offer. In other respects I am now pretty well sorted as all the tools I ordered have now turned up so the one I borrowed have been returned.

Tuesday 29th October 2019

On the positive side John Hill has done a splendid job of re-engineering the hand pump and it arrived back yesterday. Fitted straight on and seems excellent but it I cannot test it yet as I don't want to put water in the tanks or boiler until I have sorted all the leaks.

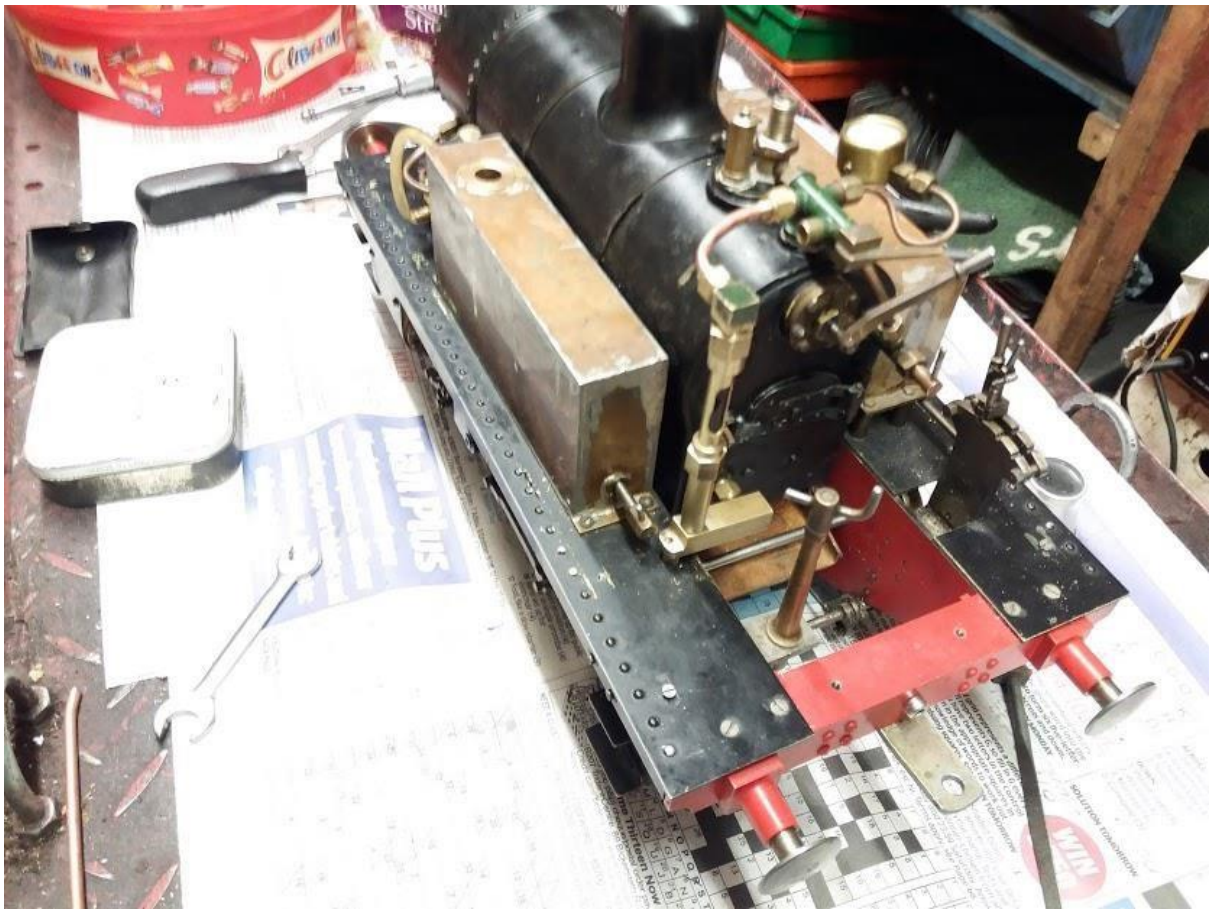


On that front I seem to be going backwards as much as forwards. I thought I had sorted out the clack valves (these stop boiler pressure pushing water back through the pumps) but they are still leaking a bit. John wants me to take them off and send them to him for refurbishment but I am reluctant to do so. I am hoping that they will operate better in the presence of water. Otherwise it means taking of both water tanks and all the plumbing underneath which will likely create even worse leaks. Some of the leaks will go away I can connect things up permanently and use thread sealant. The water gauge is still the primary concern.

Having studied the plans I can see why I am struggling as the design JP used is wholly his own invention. It may well have worked when built but is not a design which lends itself to subsequent maintenance. The major problem is that the top inlet to the water gauge was intended to be via lug which also provided support. This lug is not present and he top of the water gauge is connected via copper pipes to the manifold at the top and to a union at the bottom of the boiler. To overcome this flexible mounting the gauge glass is sheathed in tube which has a slit to allow viewing of the water level. Getting it all to seal and have the slit facing the driver is a lottery. I also found that the original design and all the examples I have studied use 5/16" or even larger connections which gives sufficient room to fit O rings. JP made his fittings 1/4" even though he used the standard 5/32nd diameter glass. O rings to seal this combination don't exist.

In the end I have sadly abandoned his design in favour of my own and have spent the last two days making the various parts. The picture below shows the current end result. It is only loosely assembled for two reasons, Firstly some pars need to be silver soldered and I have yet to buy a suitable blow torch. Secondly, now its in place I feel its ugly and intrusive and I have some thoughts on an improved version. The bottom is now very rigidly mounted. The top is still only supported by its copper tube. The mark two version may change that.

Having to do it over is not an issue, I have thoroughly enjoyed making the various parts and learned a huge amount about model engineering and lathe work in particular. Feeling quite pleased with myself and before I finally solder it all together, I must take a picture of all the individual parts. One thing I need more practise on is bending coper pipes as you can see. The picture also shows the improved access to the ash tray with the whistle out of the way.



Wednesday 23rd October 2019

The problems seem to be growing rather than diminishing though I have had some successes. Dealing with the latter first, I believe I have finally sorted out the valve timing which went adrift when the eccentric link rod came loose. I had some success by setting is close to how the other side was set up but in the end, I spent a lot of time studying videos on Youtube about Walshearts valve timing. Armed with this knowledge I got it set correctly. When I checked the other side it was close but not quite correct so it too has been adjusted. The engine now runs much more smoothly when test with compressed air.

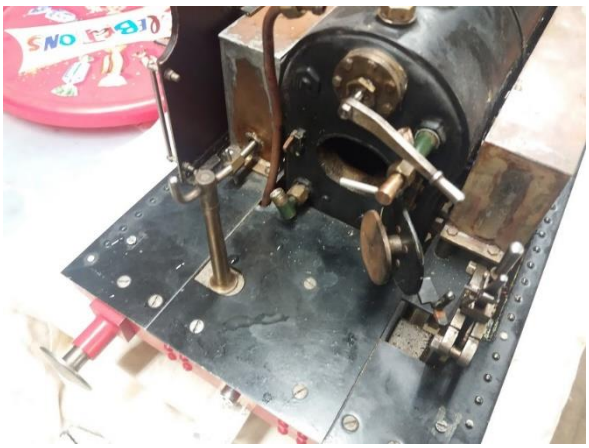
However, keeping air in the boiler is still a problem and bit by bit I have identified the leakage points and got rid of most of them. As far as I can tell, the main remaining leakage is from the water gauge. After consulting John Hill I dismantled this device and cannot see how with its present design it is possible to make it leak proof and visible. If tightened fully the sight glass is facing the boiler head not the driver. John was not overly complimentary about it's design when I was with him on Monday. I am currently thinking about the problem and will do some research on the web. Would be nice if I could buy one ready-made which would fit but somehow I think this unlikely.

A more trivial problem is the whistle which is a huge tube under the cab floor. This had a lug soldered to the top for a securing screw but the solder has given way so the whole assembly is flopping about. I

have now removed the cab floor and to get the whistle out. This significantly improved access to the ash box so I may well reposition the whistle. Ando so it goes on.

Monday 21st October 2019

Well the good news is that as of today after a lot of hard work by John Hill Titch has a boiler test certificate. To make the necessary connections and to gain access to various parts of the boiler that needed to be inspected during the testing, poor old Titch had to be partially dismantled and remains that way for now. Though the boiler itself is free of leaks not so some of the ancillary fittings. Some of these need to be redesigned both to overcome the leaks and to make them more robust for any future testing. John is kindly going to re-engineer the hand pump connections. The initial problem was that a soldered joint had failed but repairing it would have been almost impossible hence a JH



redesign.

We also found that not only could we not currently get water into the boiler by pump, there was no obvious way of getting it out short of disconnecting some of the pipework and tipping the loco on its side. I am going to tackle making a blowdown valve for the boiler though right now I am not entirely sure how.

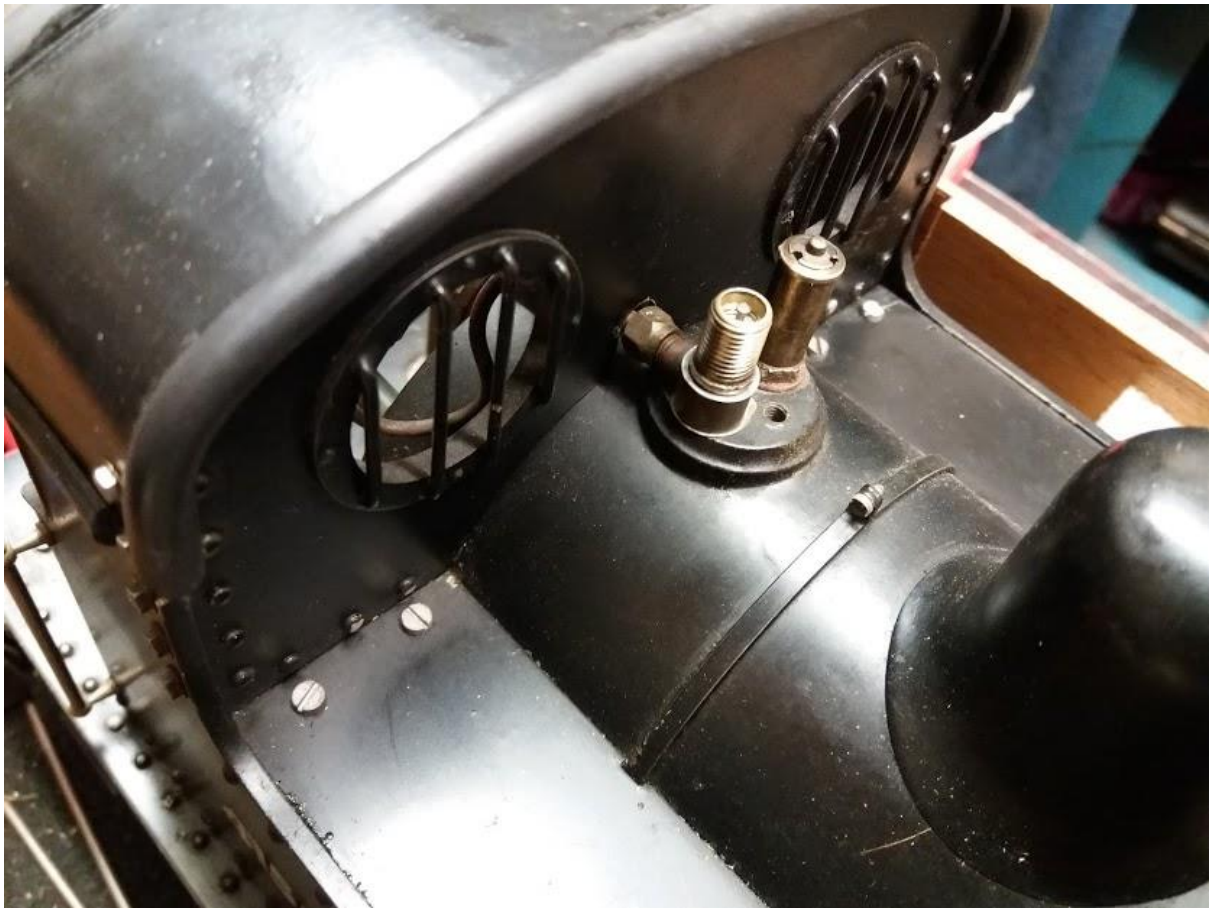
Overall it was a long tiring day for both of us but I now have a much better idea of how it all works. Just hope I can remember how to put it all back together – the photos I took should help. John also gave me a useful stock of materials and sold me at a bargain price a quality set of BA taps & dies in a nice wooden box. So my model engineering toolkit is gradually expanding. I suspect that getting Titch fully operational is going to be a much longer job than either of us was hoping or expecting. Not that it matters to me; the more problems to be overcome the more I will learn.

Friday 18th October 2019

One of the things suggested when I was at the WWSME last week was to run the loco on compressed air and this seems an admirable idea. Having studied the model I concluded that the easiest way to provide such a connection was to fabricate an adapter with a Schrader airline connector on one end and a ¼" 40tpi thread on the other to screw into one of the pair of pressure relief valve apertures. In fact I was lucky as in my spares box I found an adapter that already had the Schrader connector and a plain 1/4" shaft. But of course I don't yet have any Model Engineer thread taps & dies so it was looking as though it would have to wait until I went down to Exeter. But as luck would have it, I was talking to

chap at WWSME today and it turned out he lives very near me, has the necessary die and was willing to lend it. Indeed, he dropped it off this afternoon.

Of course that was too easy. His die was a 13/16" type so first I had to make an insert for my die holder. However, the compressor adapter is now made and has been briefly tested. It successfully puts air into the boiler, sufficient to blow the anyway so at least one thing works. The pressure drops quite quickly so I need to douse the boiler assembly and all its connections with soapy water to find out where its leaking. Most likely its dry seals and loose connectors. But for me it is a giant step forward. Tomorrow we start chasing leaks.



Saturday 12th October 2019

I have now rescheduled my visit to Exeter but it will not be until Monday 21st October unfortunately. However, I have not been idle in the interim and have spent much time studying the plans and getting to understand the operation of steam locomotives in general and titch in particular. I finally solved one thing that was puzzling me – how to get water from the tanks into the boiler. The plans showed a hand operated pump in the LH water tank but nothing like it was present on Titch – until finally I found it hidden under a cover at the very front of the RH tank. However, the lever is very short and would be difficult to operate against steam pressure so I have made a neat removeable extension lever. While I was in fabrication mode, I also made a shovel, a fire iron to stir the grate and a tool to clean the boiler tubes from ash and coal residue.

Looking at the loco I felt it was a bit naked at the rear end so I have also fabricated a short rear section of cab shown in the picture below. It needs to be painted once I have soldered the joints but overall I am pretty happy with how this turned out. It was made from an old brass letterbox found in my scrap bin.

I went to the regular Friday WWSME meeting and met with some more of the members. Took a bit of time to get them talking to me but when I produced the Titch the ice melted and we got on very well. They were able to explain a few of the things that had puzzled me and suggested that I could run the engine using compressed air. So now I am trying to work out how to connect an air line – something that will likely need new fittings to be made or adapted. The various fittings on the boiler mostly (probably all) using Model engineer threads at 40tpi. Needless to say I have nothing in my toolkit anywhere close to these sizes so I have been scouring the internet and seeking advice on what to buy and from whom. I have found a few useful Youtube clips and that identified the need for yet another tool – a tail stock die holder. As these things are pretty simple I set too and made myself one from shown in the picture below. This one will take 1" dies, seems like I need to make another for 13/16" dies as well.

Tuesday 8th October 2019

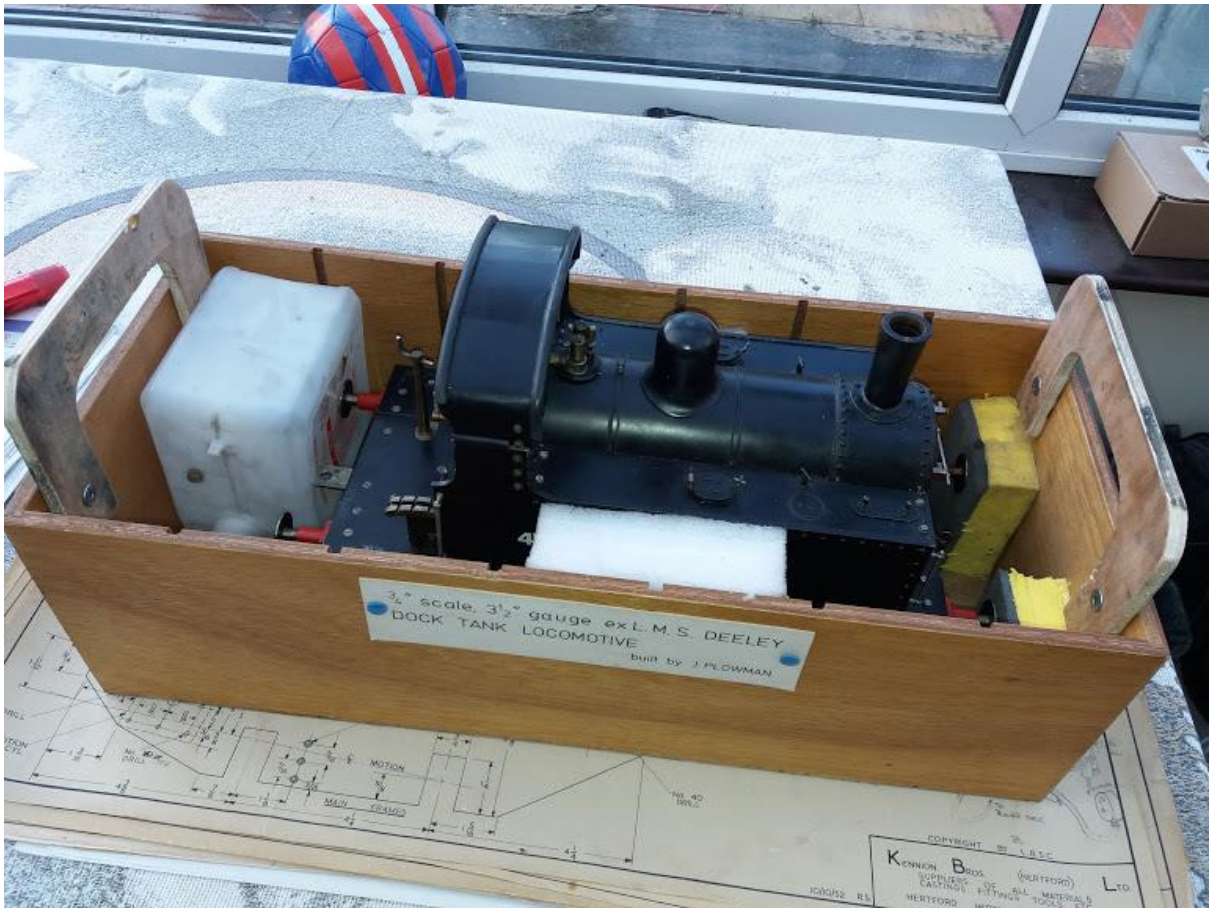
Sadly my trip to Exeter has been deferred as John Hill is not well. We are hoping he will be recovered sufficiently for me to go down with 'Titch' next week.

In the interim I have been making a couple of modifications to facilitate actual running once it has been tested. The rear of the cab has now been removed as well and a short roof fabricated to make it look a little less stark. Quite pleased with the way this turned out especially considering it's made from a piece of galvanised sheet from an old garage door. I have also removed the rear towing hook and

replaced it with an uglier but more substantial towing eye based on the style I saw at Westbury on Saturday. I may well also fabricate a new smaller rear panel for the cab based on David Adams design.

I found an old wooden box in the loft which will be ideal as a carrying box for Titch now that I have added carrying handles and some packing material.

Today I spent a time studying the plans and trying to make more sense of the design and construction. I think I had a bit of a breakthrough as I finally managed to locate the hand pump used to prime the tank at startup. I knew there had to be one but JP had located it in the other pannier tank under a neat cover I had not noticed before. I even found the superheater (and found out what it does). Still some things I am struggling with – thank goodness for Google and the internet..



Saturday 5th October 2019

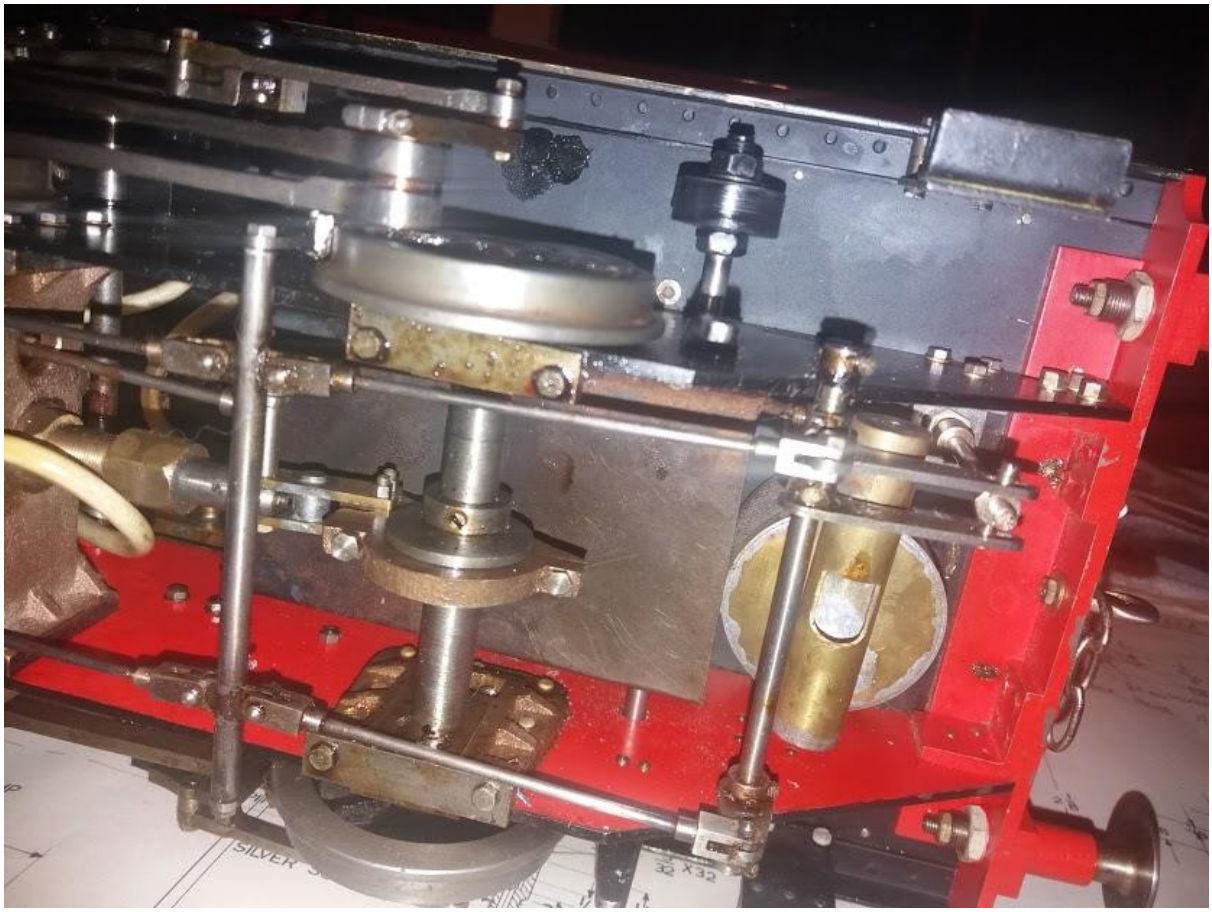
Today I visited the West Wiltshire Society of Model Engineers(WWSME for short) at their premises on the White Horse Country Park just outside Westbury. What an impressive setup with a circa 900ft 3.5/5" raised track as well as smaller gauge tracks. a large clubroom plus workshops and storage sheds. They were very welcoming and spent a lot of time telling me about the club and its facilities. They even offered to do the boiler test on Titch for me. Turns out that we had a number of friends in common so I felt really at home and intend to Join. Even better, someone else turned up while we were talking and proceeded to steam up his Titch. The picture says it all; if you click on it you will load a video as well.

Wednesday 2nd October 2019

The 6201 bearings arrived today, a pack of ten costing a whole £8 including delivery. At that price I am not sure I would want to them in any demanding role but they are perfect for my rolling road which is now finished. As shown below it seems to work fine.

Saturday 28th September 2019

I am still examining the loco and studying the plans to aid my understanding. One thing I noticed earlier was the very fiddly way the ash tray was secured. In fact the method used does not agree with the drawing nor normal practise. I have now made and fitted a long pin with a large know so that the tray can be dumped easily in an emergency.

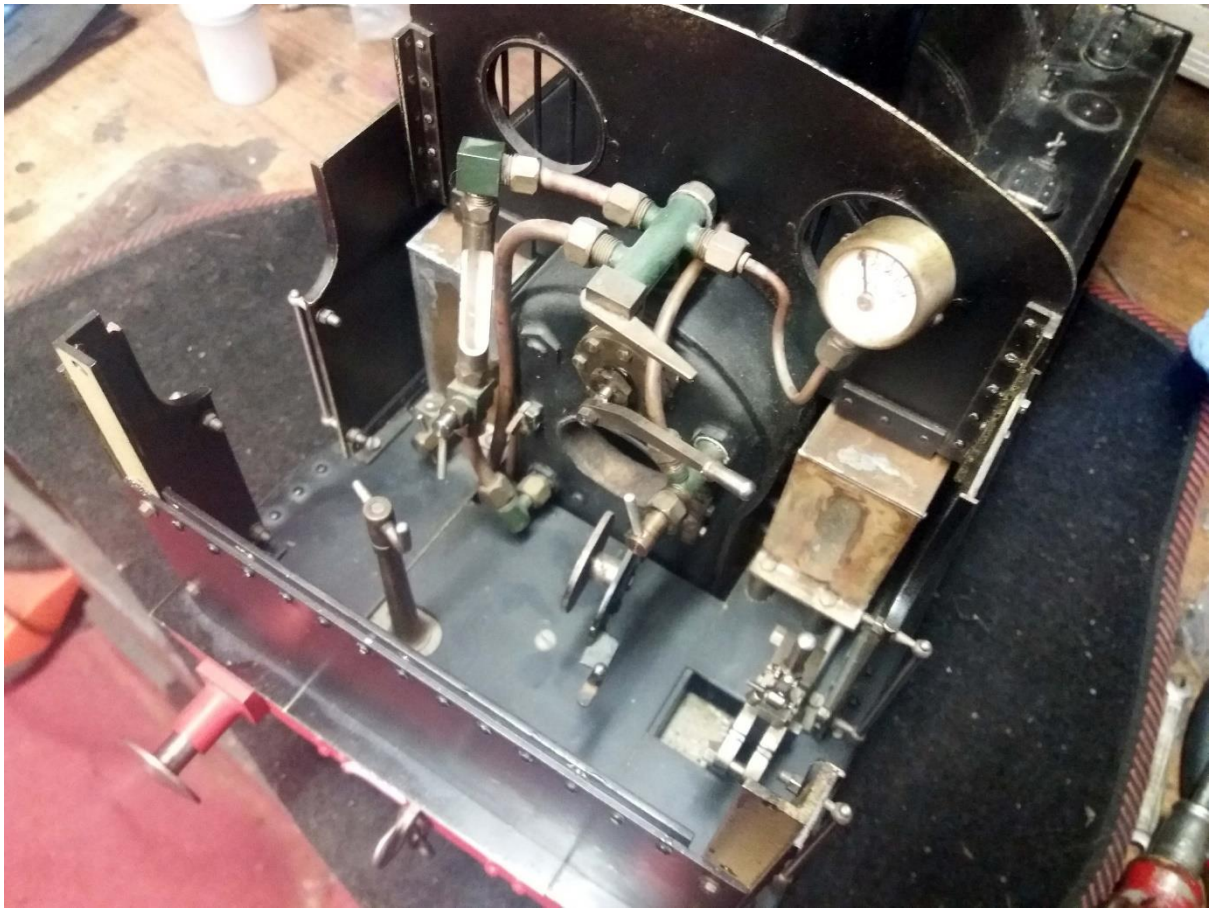


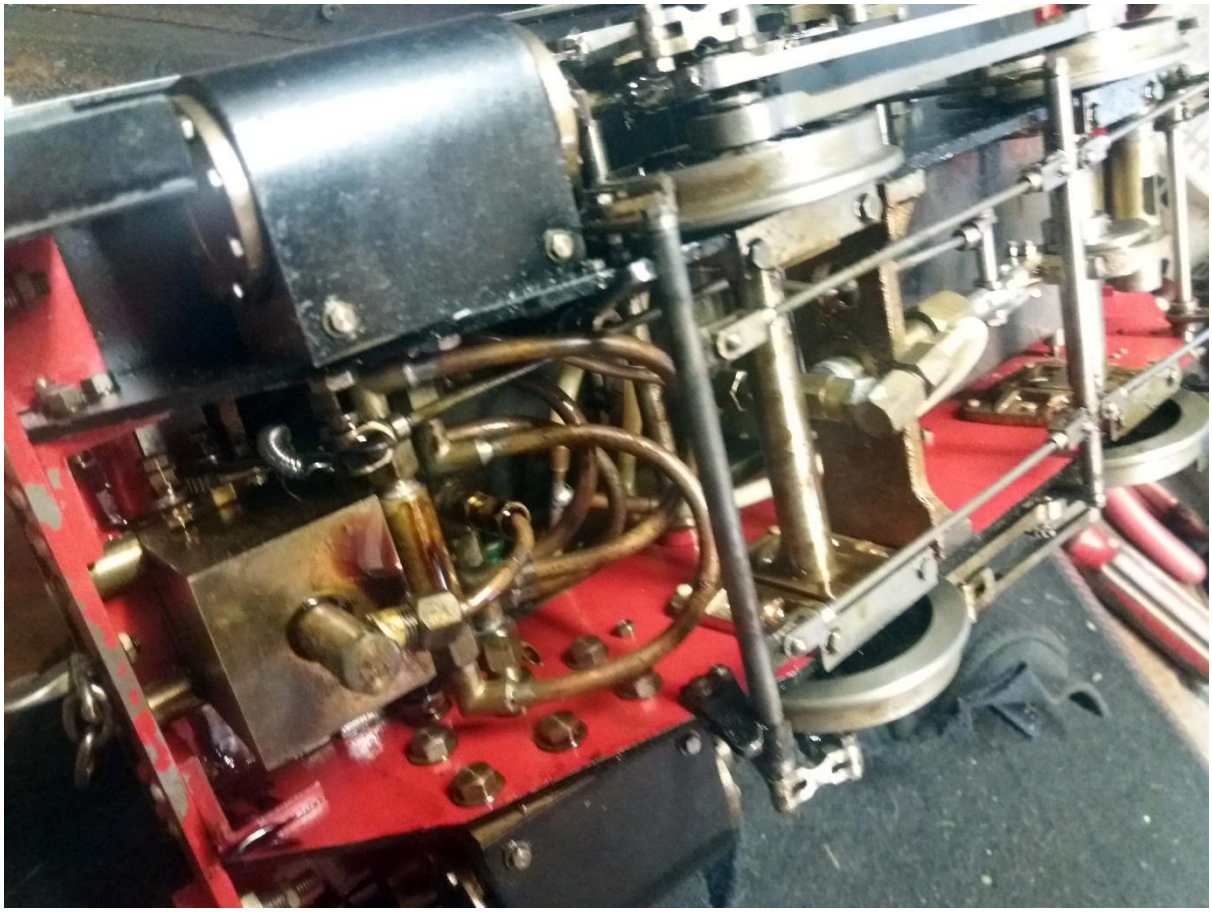
In fact since the picture was taken I have made a much nicer know out of a piece of brass I found in the scrap bin. The other thing I have made (or at least started) is a rolling test track so that the engine can be run on the bench. I am waiting for the rest of the bearings to be delivered to finish the track but you can get the idea from the picture below.

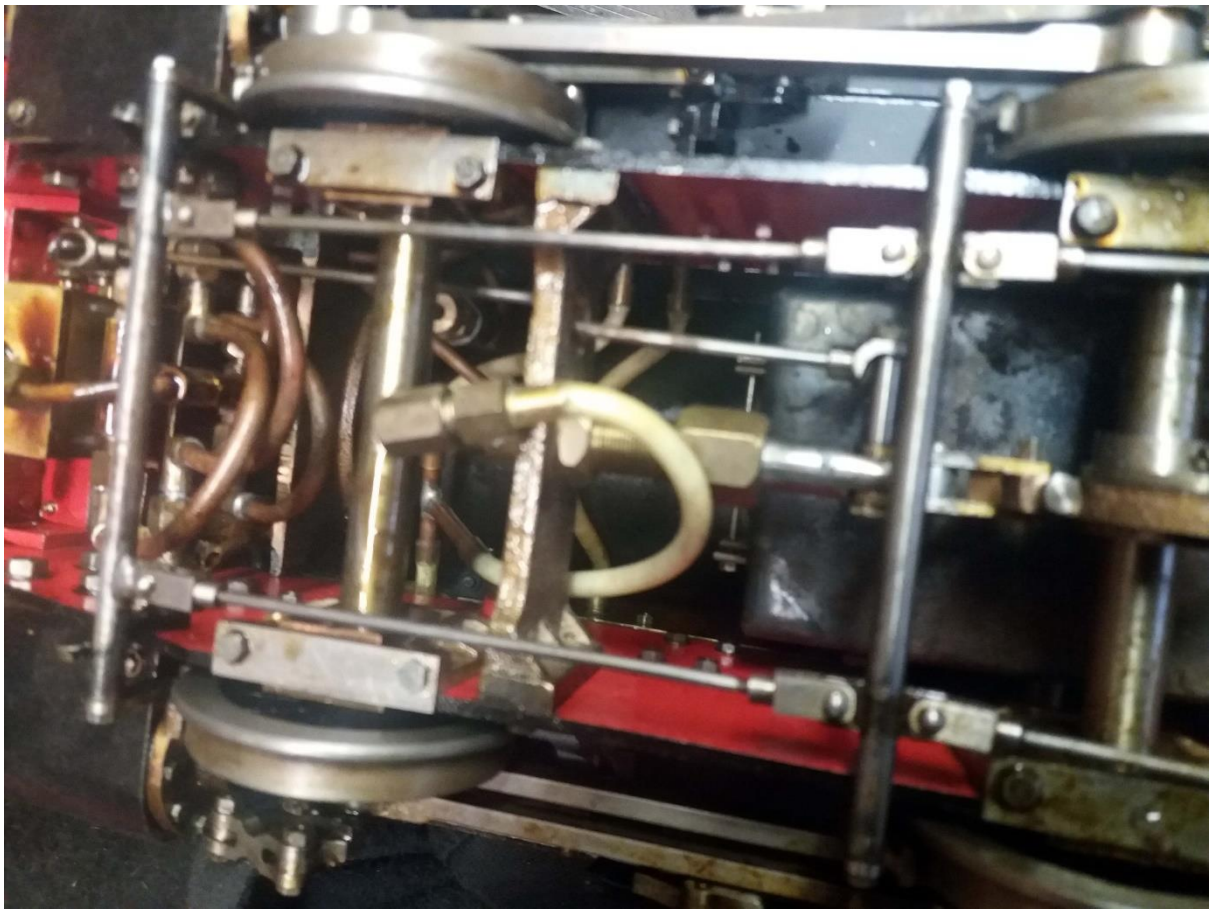
May need some fine tuning to get a perfect fit for the loco.

Monday 23rd September 2019

Today I took the loco into the workshop and gave everything a good dose of WD40 as the working parts were covered in grease which has solidified over time. I also removed the cab roof and rear panel which gives a clearer view of the controls. As shown in the picture below. I can identify most of them but a couple I am unsure about so I have sent the pictures to John Hill for him to talk me through it. I also took pictures of the underside and again I can recognise the functions of most of the parts but again there are things I don't understand. However, that is the whole point of taking on this project. For now it is back on its display stand.







Sunday 22nd September 2019

First task in the project was to give the garage a really good clean and tidy up. It had become a real tip over the last few months. Took me most of the day but a worthwhile job and the lathe is now looking good too. I was hoping to find some small BA spanners in my toolboxes but came up with nothing useful. I tried my ¼" drive metric sockets but the smallest is 4mm. this did fit some of the nuts on the loco but was too large for the ones holding the roof of the cab which I need to remove to be able to study the controls. I did some research on the internet and found a source of BA spanners and sockets but it is difficult to know what sizes I need. BA is numbered from 0 (which is vey close to 6mm) to something in the region of 25 which is so tiny you are likely to only find it used in watches and similar instruments. I can measure the nuts on the loco but could not find any information about the relationship of thread size to nut size. Just to add to the confusion, it seems that for some time BA fasteners have been made using metric hexagon bar so it could be that any spanners I ordered might not fit anyway! As Titch was built in the 1960's it pretty certain that original BA sized hexagons were used

I rang John Hill who did not know of any source for this sort of info but he did make one suggestion which was to try and make my own BA sockets using allen headed screws. I searched through my nut/bolt collection and found that a 4mm allen screw uses a 3mm key size which was spot on for the 10BA nuts holding the roof. So I made myself the tool shown. However, I failed to find any smaller allen screws so I still have to identify and procure further spanners. However, my model engineering career has now started!

Background – 21st September 2019

As anyone who has looked elsewhere on my website will know about 3years ago I developed an interest in model railways and since then (mostly during the winter) I have built a couple of of 00 layouts and an n gauge layout details of which can be found here.

The era that interests me most are the steam locomotives of the GWR but I realise that I know vey little about how steam locos actually work and this is a gap in my knowledge that I have long wanted to remedy. Through my motorcycling activities I have formed a deep friendship with John Hill who is an expert model engineer who has built and runs several steam locos. We often talk about them and I am lucky enough to have been invited to aa number of the lunch time meetings of his Steam Intinerents group where discussion about things like clack valves, injectors and regulators goes right over my head; much as I try to understand. Somehow I have until now not set aside enough time to really get to grips with the subject. Anyway a couple of weeks ago john invited me to come down to Yeovil where he was planning to run one of his locos. John lives in Exeter which is 90 miles away whereas Yeovil is about 45 and since I needed to meet up with john to collect some bike bits and return some literature, it seemed a good opportunity. The Westland club members are a friendly bunch and made we very welcome and I had a most enjoyable day. The full title is the Westland & Yeovil Model Engineering Society; details can be found at http://www.wydmes.org.uk/. I came away quite enthused about the idea of owning a model steam engine though not with any clear idea of how to go about it.

A few days later, John rang to say that he had been talking to a long standing friend in the model engineering world and out of the blue the friend had said he was thinking of disposing of one of his

steam locos and did he know anyone who might me interested. To cut long story short I am now the proud possessor of a 3.5” gauge model of the docks tank engine shown below;

I must record my thanks to John Plowman (JP henceforth) a lovely gentleman for entrusting me with his superb model.

JP originally built the loco in the early 1960’s and the story of it building was published in the Model Engineer in 1964. It won a prize at the first show he entered and when you look at the build quality you can see why. All the more credit because it was his first attempt and he did not own a lathe when he started! The build took 20 months which with hindsight is an incredibly short time. His current project a 5” gauge 4-4-0 GWR County Class has taken 27 years – but he does have many other interests. The loco design was based on drawings by Curly Lawrence (LBSC) for an entry level model with the name ‘Titch’. However, JP decided to modify the design to emulate the LMS dock tank. The first picture below is what a standard Titch would look like and the one below that is a real life 0-4-0; not 45135 but one of the same family. Though the loco has been used it has for many years been displayed item so it will need a boiler test and no doubt some servicing before it can be run in steam again. This presents me with an ideal learning opportunity aided by the fact that JP has also given me the original plans (full of his annotations) and copies of the notes he made about the build process. The blogg will now record the trials and tribulations about getting 45135 back on the track.


41537