

## NOVEMBER 2022 NWMES NEWSLETTER.

### Winter Lectures.

For our latest evening lecture, we had our Vice Chairman Keith giving us an idea on how to construct a clock. Not quite as easy as it sounds. As an ex-toolmaker we all expected something special, and we weren't disappointed.



For most of us the idea of cutting the rather ornate chassis/ mainframe would have been a major contract. Not for Keith as he had other ideas. One top tip from Keith was to plan ahead before starting the cutting operation. With the price of brass sheet these days you could be wasting a lot of scrap material, whereas smaller components could be manufactured from offcuts. Another interesting operation was creating a thread on a cone shape. (Excuse my spelling, this cone shape was called a fusee).

To carry on the evening's entertainment Keith gave us a "geography lesson by train". He took us to every corner of the world on his railway travels, and we can all confirm there's nothing wrong with his memory as regards place names. Thanks again Keith.

## **A CHEAPSKATE'S LOCO LIFT (BY BILL WINTER)**

When the boiler was fitted to my Polly Caroline it was going to be too heavy to lift manually, time to bite the bullet and get some mechanical assistance. Plan A was to use a commercial hydraulic lift table. It would need some larger wheels to enable it to negotiate my drive and the fabrication of some sort of steering. Whilst looking for some wheels on Ebay I found a garden trolley with Ackerman steering for not much more than the price of four wheels. Could I adapt the wheels and steering from the trolley to fit the lift table? A further search for scissor lifts, just in case there was a cheaper one and I found a motorcycle lift much cheaper, it was intended to operate on a garage floor so no wheels. After a bit of lateral thinking Plan B was hatched.

Plan B involved mating the motorcycle lift with the garden trolley, not only was it a cheaper option, which appealed to my frugal nature, but it also avoided the fabrication of steering. There would be the additional bonus that the double scissor action would give a higher lift that would raise the loco to the height of my bench, which the original lift table would not have been able to do. I was a bit concerned about stability but as the lift was intended to take a motorcycle which would overhang the base considerably more than my loco, and the fact that I was increasing the footprint by mounting it on the trolley I decided to give it a go.

The job was, as expected, not quite as straightforward as cutting a hole and dropping the lift into the trolley. The trolley axles were braced to a cross members in the centre of the floor and these were in the way. I decided against tampering with the front axle

and the steering and just found another fixing for the brace after fitting the lift. I could have just fitted the rear axle reversed and bolted the braces to the back rail of the base frame leaving the wheels where they were, but I decided to do it the difficult way and move the whole assemble to the rear. I removed the two cross rails by grinding the welds and then refitted them as far back as possible. Not only did this

get the braces out of the way it also put the wheels right under the back of the trolley giving me greater confidence that it would not tip when loading and unloading.

After that it was just a case of cutting a hole in the base of the trolley and dropping the

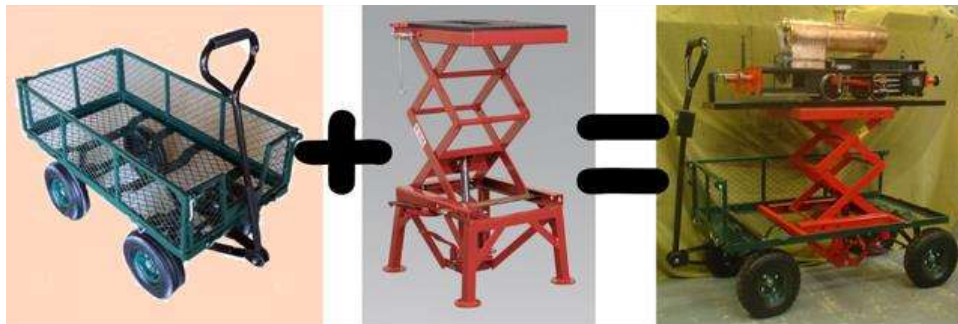
lift into place. In order to improve the ground clearance whilst keeping the lift as low as possible, it would have to go over a threshold in the doorway, I cut the legs of the lift. It also needed a couple of pieces of box section bolting to the lift long enough to bolt to the side rails of the trolley to prevent it falling right through the hole. Job done.

On the first tests the loco wobbled a bit at full extension partly due to the pneumatic tyres and partly flexibility in the cross bearer to which the front steering was attached.

Another piece of box section across the top of the offending bearer reduced the wobble significantly. A bit more air in the tyres added to the improvement. I am not concerned about the rest as the lift will only be at full extension to run the loco onto the bench, it will be lowered before moving it. There is a clamp onto the front axle of the loco to secure it to the track using one of the clamps supplied with the lift. The trolley may require some form of braking to stop it running away when loading the loco but a couple of wedges will suffice as a temporary fix so I will wait and see when the loco is finished. The lift works well and does what I wanted for quite a bit less cash and effort than Plan A.

Some ten years on and a size 10 boot has replaced the wedges, the brakes never got fitted. The fixing clamp for the loco front axle has not proved necessary. It carries two much heavier locos now and is still working well.





My back certainly creaks these days and an excellent idea from my friend Bill. Thanks.

## **ANOTHER NUGGET AT WEST SHORE.**

Last month I said how nice it was to see something different on our track at Llandudno. This month another good friend turned up not with a loco for a steam test but with two locos. Peter Etchells had his Sweet Pea- NATASHA, and his wonderfully quirky vertical boilered “coffee pot”. This is a free-lance design by Peter himself. The Stuart Turner marine engine was constructed by Peter’s father, so when it came to deciding how he could use this machine to its maximum potential, the railway locomotive beat the steam launch.





Having lit the boiler, this is the quickest loco to get up steam that I've ever seen. Once the blower was on the pressure gauge was on the red line in no time. With no axle pump, Peter has devised an electric boiler feed pump which feeds water into the boiler when the water gets low, and automatically cuts off when it reaches its operating level. A great idea for anyone constructing a test boiler (Mr. Dickinson). Maybe Peter could let us know how the motor control operates the pump for upper and lower water level pump operation for the boiler. I haven't seen many steam locos that you can leave unattended and go off for a cup of tea. This one you can!!







Having seen these two “LITTLE” gems, Peter has threatened to bring his monster (I think that’s how he described this loco) to our track soon. I can’t wait to see it.

Always nice to see you, Peter.

## **MY TEST BOILER BY Brian Dickinson.**

My recent search for a test boiler ended up without a result, so after having a look around the internet i turned up a MAP drawing for marine boilers by the Late Martin Evans (was he Welsh i ask?).

In the past i had made a start on a steamboat, but as ever it was destined to go nowhere and ended up languishing on a shelf in the workshop in a frame awaiting skinning format, before being turned into firewood at some inglorious bonfire or barbecue!



Going back to the boiler, I have all the parts to make one to the drawings so with a bit of effort i should end up with a nice unit, and if I decide to make a steamboat again, I will have the boiler. To make sure i get the build correct and current standards, I contacted our boiler inspector to seek advice and his reply was to make sure i get enough fillet on the joints for the solder to penetrate. It will take me a while to make the boiler, fitting it in around other things so you may see a few entries In Harold's excellent monthly scribe covering the build.

#### Design:

The design is simple with 85mm bore tube 150mm long 16g - 38mm flue with cross tubes 15g, end plates 12g, water gauge bushes, safety valve bush, pressure gauge bush, steam exit bush and one bush on the side for water entry. Keith Appleton has some excellent videos on YouTube and inspiration can be gleaned from them as to how to get water into the boiler.

Gas firing will be the heat source and at some stage i will make all the parts for this.

Cutting metal,

I had machined the tube ends before I thought to take pictures, however the plugs that I made to support the ends of the tube are shown in the picture.



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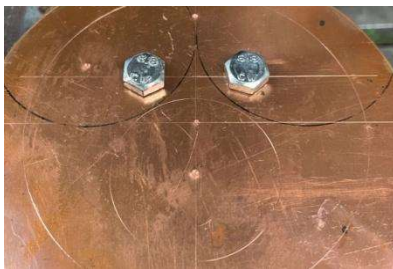
I had machined the tube ends before I thought to take pictures, however the plugs that I made to support the ends of the tube are shown in the picture.

You can just see witness marks in the tube ends where I pressed the plates into for machining. When I had finished turning I heated the tube and the plates fell out.

The end plates for the boiler were marked out and cut out using the hand grinder and then cleaned up with a sanding disk. As these are to be flanged, I did not see the point in machining them round.

You can see where the heat created during grinding them out has run to.

The only mark used is a small centre punch in the middle of one disk, where all the holes are coordinated from.

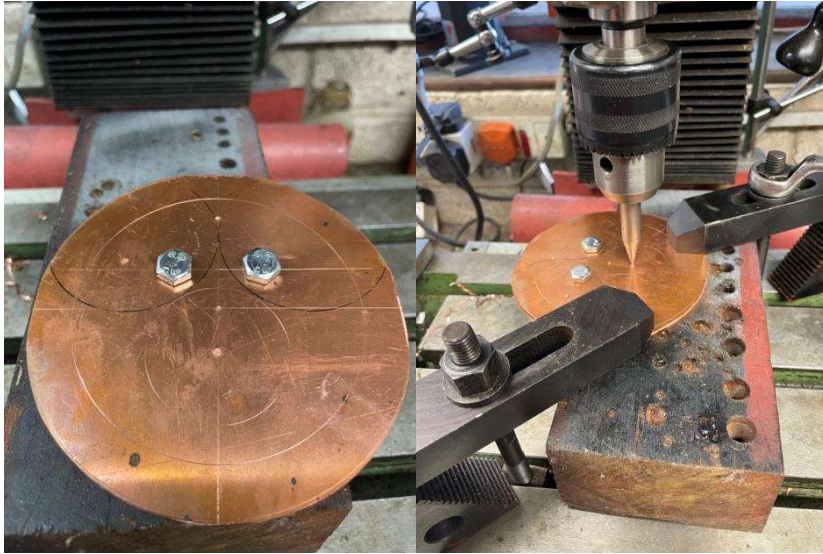


All the holes were marked out, on one plate only and then I drilled two holes that will be used for the 1/4" stays that go the length of the boiler, these holes were used to fix the end plates together for drilling.

The Outer diameter circle will be used for location on the formers when I get to that stage, it has the effect to makes the disks look bigger than needed, however when the plates are formed 2mm each side will be lost to the flanging, to bring the plates up to the right diameter to fit inside the boiler

tube. We do not need a tight fit as a gap is needed to help with the solder running into the joints and making a good fillet. Capillary action will also help. Since Cadmium was removed from silver solder, it needs more encouragement to flow so when I do the soldering the assembly will be end on so gravity helps.

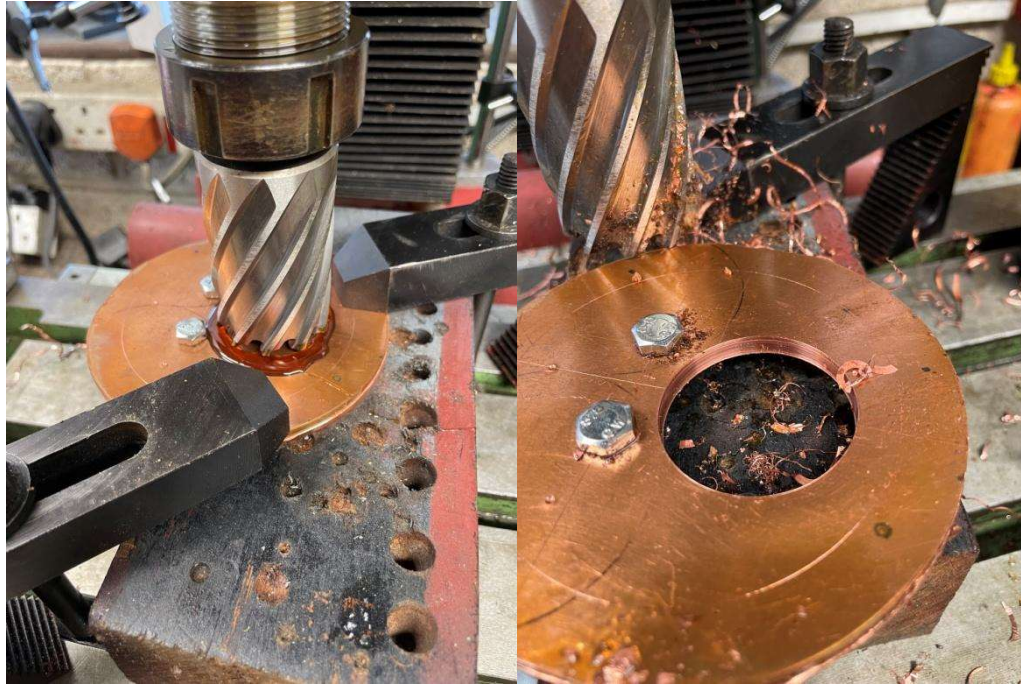
Now that the plates are fixed together, I sat them on a block of hardwood and clamped them down on the milling table.



Using a centre finding point the centre punch for the main flue was located, the whole assembly then clamped down for drilling.

I have hole saws, but these are unpredictable as to the hole they produce, so instead I opted for a rota broach. These are excellent at cutting holes. They cut at an angle on the face and break out, leaving a nice washer. Nice thick cutting fluid and about 250rpm, which sounds high, but they just cut, with no chatter.





As I am cutting through two layers, as soon as the first layer is cut, I withdraw the cutter and remove the washer to stop it jamming in the cutter.

More lubrication added and the second cut is complete. As you can see, a nice clean cut with little cleaning up the holes. Great tool the rota broach.

And the flue tube is a good fit. A bit too good, but I have yet to put the chamfers on the holes for the solder.

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Thanks Brian.

Quite recently I've been rather lucky having plenty of articles to include in my monthly comments. With winter well and truly here, activities on our track at West Shore will be rather limited unless you're very brave. This will mean I will be limited in what I can report. Knowing our membership, I know you'll be inundating me with appropriate articles to keep this wheel turning. I can't wait to see them all!! So far, I've had some lovely comments from members about what I've written in the past but is there anything that "YOU" would like to see. I will regard all comments as constructive rather than insulting.

## **WINTER LECTURES – Part2.**

At the next evening winter lecture on 6<sup>th</sup> December 19:00 at Craig y Don community centre, Tony Graham will be giving us a talk on building locomotive boilers in the smaller gauges. (0 gauge and gauge 1). For members who aren't aware of it, Tony is quite a prolific "boiler smith" in these gauges.

The January 2023 lecture will be on the second Tuesday of the month – 10<sup>th</sup> January 2023. This has been changed from our usual first Tuesday, because some members would have been away with their families over the New Year.

Final word. Looking forward to meeting all of my friends at our annual dinner on Friday evening. One member and his wife will be missing for personal reasons. Pob lwc.

All for now,

Harold.