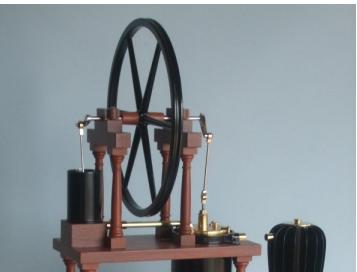


TIVVY BUMPER

The newsletter of the Tiverton & District Model Engineering Society

Spring 2020



Editorial

Welcome to the Spring edition of 'Tivvy Bumper' for 2020.

As usual, we are featuring the last six 'Pictures of the Month' that have appeared on our web site. The first is a picture is the telegraph of SS Freshspring, taken during a club visit earlier last year. The second picture is the club stand at the Culm Valley exhibition, followed by new member Aaron driving his "Sweet Pea", There then follows a detail shot of part of Geoff's hot air engine, shown at a "Bits and Pieces" evening, as was Billy's 2 1/2" gauge coal wagon in the next picture. Finally, taken at the last steam-up before the lock-down, John H is driving his "Polly", previously owned by the late Vic Tuckett.

Remember, all the previous 'Pictures of the Month' are available on the web site. Just follow the link at the bottom of the 'Home' page.

Normally, this edition would include a report on the AGM, which due to the Covid-19 lock-down, has been cancelled.

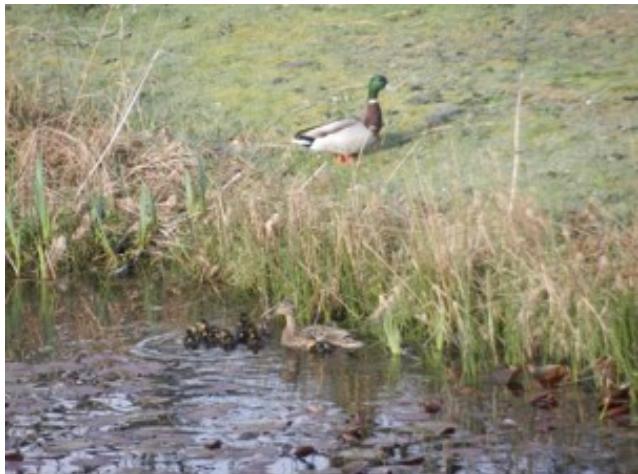
John has had a great response to his lock-down newsletter, so there are lots of people doing things, and happy to share their experiences with the rest of the club members. Unfortunately, they are not submitting anything for inclusion in "Tivvy Bumper", and unless more members start to submit articles, this will be the last edition of the magazine.

I have been producing the magazine in its current form for over 6 years, and for every edition, I struggle to find anything to fill the pages. This edition includes quite a number of articles – but they have all been provided by members of the committee. If you, the members, want this magazine to continue, you MUST provide input to it.

Steve

Chairman's Chatter

I start off Chairman's Chatter with my hope and wishes that all members, their families and friends are all safe and well. It is of course typical that the while the weather is stunning we can't be enjoying ourselves at Worthy Moor. I am still in regular touch with committee members and our neighbours to ensure things are "ticking over" so we quickly get back to running as soon as we are permitted to leave our homes. Something nice, I received a photograph from Bryan and Caroline of some additions to their garden.



Please feel free to call me if you would just like to have a chat.

I am thankful that I have this absorbing hobby along with the garden to keep myself fully occupied.

I took the opportunity to start on giving my workshop a bit of a tidy up, but so far have only got about 50% of the way. It goes without saying that I am now having problems finding things and still need to sort out my metal store. I also want to move things around to make better use of the space.

What am I working on? Storage for my locos using Dexion - about 50% completed ; a pressure test rig, this time about 60% complete; the Winson 1400 (slow progress); improvements to the Simplex which are complete and a new project which has nothing at all to do with Model engineering.

The new project, which I will detail when finished, is a copy of a wind sculpture that I saw at the RHS garden Rosemoor.



The copper "Trumpets" are made by a process called spinning which I know some of you will have knowledge. As I have no experience, gear or skill to make these, I did some digging and purchased these on-line for a reasonable price.



I will make everything else myself and have started on the stand.



Adrian

Treasurer's Trivia

Thank you to all members who have renewed their subscriptions already – either by electronic payment direct into our bank account or by posting me a cheque (please note, the name of the Club MUST be in full as banks are tightening up on security. Please make cheques payable to Tiverton & District Model Engineering Society Ltd. A reminder politely from me that they need to be paid by 30 June if your membership is to continue. The Bank details and my address were e-mailed or posted out by Secretary Chris recently. Subs are held at last years figure so £32 or £5 for juniors. I am posting membership cards out once a week when I go shopping. A reminded too that as we have renewed our Northern Federation Insurance you can, as long as you have renewed your membership, apply for a certificate that extends the club's £2 million of Public Liability Insurance for your own use as long as no financial gain is to the member. (Ok to raise funds for a charity for example).

The accounts have been e-mailed out already and I am happy to answer any queries. We will, of course formally ratify them whenever we can hold an AGM.

Chris S.

Secretary's Scribbling

As Secretary, I sometimes have a doubt in my mind as to whether the emails I despatch are actually getting through to members. So when I sent out the emergency magazine, I asked everybody to acknowledge receipt of it, and also requested an automatic 'read receipt'. I got 4 automatic receipts, 33 replies, and nothing from the rest. I have to say it is a little worrying that several members may not be getting emails (or is that they just forgot to reply?).

Enough moaning. The lockdown due to Covid 19 has caused a lot of problems for the club. There were plans afoot to update the loo facilities using the space generated by moving the mowing equipment to the new shed, and plans to improve the passenger loading facility. Now our focus, when we return to something approaching normality, will have to be on returning WM to its customary state of tidiness – grass mowing and weeding the gravel paths being the highest priority (After having a STEAM UP of course!). On a personal note, my garage is already bunged up with stuff and I have a donated ex railway station seat to be refurbished for WM when I can get the replacement oak seat slats from my brother.

The committee have explored the possibility of holding a virtual committee meeting using ZOOM or SKYPE, however there does not appear to be much to debate until there is an easing of the lockdown in sight, so we are managing by email and the odd telephone call – remember them? It's when you actually talk to someone!

I will issue an updated members details list shortly, but in the meantime contact me if you need to get the information.

Chris C.

Boring Cylinders

One of the trickiest jobs when building a steam engine is boring the cylinders. The requirements are fairly simple, but sometimes hard to achieve. The bores must be a) perfectly circular, b) parallel, c) the same size (within limits), and d) have a good surface finish.

When LBSC used to describe building engines, he would often recommend putting the cylinder casting in the lathe 4-jaw chuck and use a boring bar in the tool-post to bore to size.

That works reasonably well for smaller gauges (2 1/2" and 3 1/2"), but unless your lathe is in top condition, the bore is unlikely to end up parallel. For the larger gauges, the sheer weight of the casting makes it quite difficult.

So the method most often used is to bolt the casting to the lathe cross-slide (having faced off the bolting surface) and then use a boring bar between centres. This will almost always produce the desired effect, but does introduce its own challenges.

One of the main ones is how to move the tool in the boring bar by small amounts, and then get the bores the same size.

When I bored my 'Pansy' cylinders, I used two boring bars. I used the first one to enlarge the bore until it was close to size, and the second one to produce the final cut.



The second bar was then left untouched and only used for the final cut - ensuring the two cylinders were the same size. (Actually, as I am building 3 engines, it meant all 6 were the same size!).

Now as many of you know, I used to belong to the Andover society, and one of my friends there is in the process of building a 7 1/4" gauge GWR Prairie. He started it on January 1st, 2000, and has just got round to boring the cylinders. (He takes as long as me to do things).

He came up with a most ingenious method of adjusting the size of the bore, while using a between centres boring bar.

He put a dummy centre in a boring head in the headstock end of the lathe, and put the boring bar between this dummy centre and the tailstock centre.



Then by offsetting the boring head (which of course, has graduated feed), the boring bar 'wobbled', but the cutting tool continued to turn a perfect circle which could be adjusted within fine limits using the boring head.

Steve

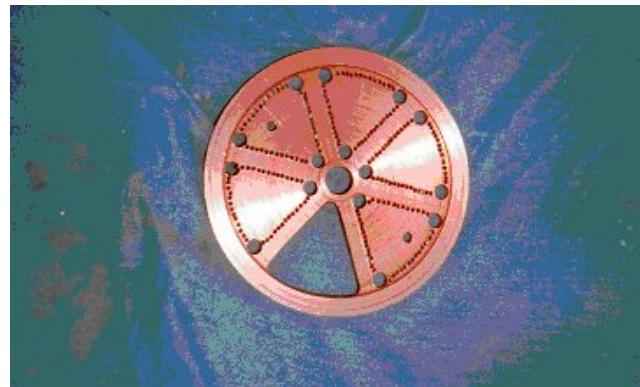
Anthony Mount Engines

This is a brief account of constructing a number of stationary engines to the design of Anthony Mount. It spans a time period of 25 – 30 years and won't contain too much detail (mainly because I can't remember!).

The first engine was James Booth's Rectilinear Engine from 1843, which I completed in 1993. This was also Anthony's first published design.

I don't like machining castings, preferring to cut from solid metal (it's also a lot cheaper). Much of the Rectilinear was made of aluminium, although the flywheel is steel, which is the component I well remember making.

Starting with a round steel blank the basic shape was turned up on the lathe. The area around the spokes was chain drilled the remainder filed. I was still working fulltime, so each lunc-htime, half a spoke was shaped and finished by hand. (I had more energy then).





AM 9.29 1/MAY/2020



AM 9.31 1/MAY/2020

Next in line was Matthew Murray's Hypocycloidal Engine from 1802.

Again lots of filing on the flywheel and the two gears. The gears were made by drilling two circles of holes - a small one at the bottom of the tooth with a larger hole at the tip (I had access to a CNC mill at the time) and then hack sawing and filing the teeth to shape. The teeth look as if they had been made by a black-smith, which was Murray's trade.

(The photo of this engine will appear on the club's web site in due course. All the other engines have already featured as a 'Picture of the Month' – Ed.)

The Stirling 90 Hot Air Engine was a something a bit different for Anthony. A fairly simple engine however the power piston does need to be a VERY good fit in the power cylinder. This was lapped in using jewellers rouge.

Anthony designed the Stothert & Pitt's Beam Engine of 1866 at a scale of 1:12. I made a start on making parts, from aluminium, but everything looked very small, so I decided to double all the sizes. But it's a bit daunting just how much bigger it looked, and of course all components had to be fabricated. The base was constructed from 10 pieces screwed together, the flywheel has 20 parts. To create the shape of the base, a radius cutter was made from a length of silver steel suitably heat treated.



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A set of castings etc. was purchased for ‘Sir William’ named after Sir William Armstrong who produced the original Horizontal Hydraulic Pumping Engine. When I saw Anthony he described this model as ‘a bit fiddly’. I think that’s what politicians call ‘economy of truth’. It was very, very fiddly. And it reinforced my dislike of machining castings.



Tim

Websites for the bored

The latest issue of Model Engineers Workshop has an article with the title above, which gives links to a number of interesting websites and YouTube videos. The article finishes up with a link to the MEW online forum which has the full list of contributions. Unfortunately the link does not work! However, a little research found the link, which is

<https://www.model-engineer.co.uk/forums/postings.asp?th=153669&p=1>

A sample - A tour at the Colchester Lathes Company in Colchester, Essex, UK.

<https://www.youtube.com/watch?v=nQaAKUAzK0w&app=desktop>

You can lose yourself for HOURS with this lot!

Cap'n Cat

Forthcoming events

Due to the Covid-19 lock-down, all club meetings are currently cancelled, including steam-ups at Worthy Moor.

Keep checking the club's web site, at <http://www.tivertonmodelengineering.org.uk/> for further news as it becomes available (or at least, look at the latest 'Picture of the Month').