

# TIVVY BUMPER

The newsletter of the Tiverton & District  
Model Engineering Society

Autumn 2017



## Editorial

Welcome to the Autumn edition of 'Tivvy Bumper' for 2017.

As usual, we are featuring the last six 'Pictures of the Month' that have appeared on our web site. They show, in order, Nigel with his "Doris", running on the track at Worthy Moor, Mike's experimental, gas-fired loco, Andy, with his Prairie - winner of the Vic Feeny challenge cup for the "most entertaining" model at the 2017 annual barbecue, Peter's steam plant for his Swiss paddle steamer, Steve K driving his "Jeannie Deans" - again at Worthy Moor, and a set of bending rolls to the Geo. H Thomas design, exhibited at our "Bits & Pieces" evening in May.

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.

The club web site has all the latest information about the society, dates of meetings and presentations, steam-up days, as well as a bulletin board where members can share experiences, post sales and wants, share information about events, etc. So if you have access to the Internet (or someone in your family does), have a look.

The web site address is: <http://www.tivertonmodelengineering.org.uk/>

As well as the normal pieces featured each edition, we have the conclusion of Nigel's description on his garden railway, and an interesting and useful piece on silver steel.

I am always on the look out for articles and pictures to go into the magazine. So if you have an interesting project on the go, or have some experiences that you would like to share with the rest of the members, please think about writing a short article to go in a future edition.

Steve

## **Chairman's Chatter**

First, a welcome to all our new members and I hope you enjoy our Autumn newsletter. We always need articles, so please feel free to contribute. Please email any articles to Steve.

It has been a busy six months for the club starting with the change of our meeting venue. The move to the Old Heathcote Community Centre (OHCC) has been a great success with an excellent number of members at each meeting. In particular was the talk by Amyas Crump on the Taunton to Barnstaple line (fascinating) where there were so many members, additional seating was required.

It has been just as busy at Worthy Moor with regularly good turnouts of members (we can always do with more) for the Tuesday maintenance and also the scheduled weekend working days. Improvements at Worthy Moor include a covered steaming bay, additional paving in the steaming bays and turntable area, improved access to the loading ramp and widening of the Grand Canyon. Many thanks to all members for contributions.

Something new this year is the scheduled boiler testing days. The first one was busy and deemed successful but indicated the need to cover one of the steaming bays as it started to rain. Rain at Worthy Moor, what a surprise!

Another first for many of us “newer” members was an organised visit to Worthy Moor from another club. In September we hosted members of the “Brean Steamers”. This is a “pseudo” club comprising members of various model engineering clubs that get together at a Caravan site at Brean in Somerset. They spend a week visiting clubs in the West country. The weather was kind on the Tuesday that they visited us, and we (yet again) had a magnificent turnout of our members. The Brean Steamers enjoyed our hospitality and track, and have already asked to

come back in 2018. *(Editor's note - some pictures of the visit can be found on the club's bulletin board)*

We have also had many activities, with talks at OHCC, video evenings and recently a bring and buy sale. The club has also been well represented at a number of shows such as the Culm Valley MRC Exhibition, East Somerset Society of Model & Experimental Engineers (Bath & West Showground) and The Exeter Garden Railway show.

Finally a reminder that our annual Christmas dinner is being held at Bickleigh Mill, Friday 8th December. Please give your menu choices and payment to Chris Shields by November 10th, our bits and pieces evening.

Looking forward to seeing you at Bickleigh Mill.

Adrian

## **Treasurer's Trivia**

The subs are still creeping in – next year we will be asking everyone to renew by the end of June. (Please look at the Committee minutes No. 79, on our bulletin board, to see how things will work from next year).

I am now accepting bookings for our Xmas meal at Bickleigh Mill on December 8th

The steaming bay roof over the bay nearest the steaming bay shed cost the budgeted sum almost to the penny (£450).

Out funds are stable

Chris

## Secretary's Scribbling

Well now.... 6 months into my new role as Secretary-----I didn't think there would be so much to do! Oh well, somebody might be bursting with desire to take over at the AGM? - NO??? well it looks like you're stuck with me for a while. I'm quite happy doing the administration and record keeping, but I have never been any good as an author. I prefer to DO things, so I find writing Sec's Scribbles quite a chore, hence the somewhat brief nature of these notes.

You will also find that the Committee Meeting Minutes are a record of decisions taken, with very little record of the discussions except where necessary for explanation.

I have been grappling with all the administration updates needed to comply with Elf 'n' Safety, Data Protection, and the change to the Northern Association, together with sorting out which members have passed on/moved away without telling us, and sorting out a few incorrect records. This is nearly complete now, but I will still require some boring forms to be filled in and returned.

I might be able to find time to finish rebuilding 'Gert' in time for a pressure test at the end of the month!

Chris

## Marsh Top Garden Railway (Part 2)

By Nigel Gettings

The Boards used on top of the angle, were HardieBacker 12mm thick sheets 1200mm x 800mm size. This is used for water proof installations, showers etc; and is made from cement, sand and fibre. This is good for water proofing but makes cutting more troublesome. I

had read that one just score it with a knife and it then snaps - but as I had to form my cuts to the radius of the curves, I used a jig saw with tungsten blades to resist the high wear rate. Like all jobs, one arrives at a method that works for them and the method I used was to lay the board on top of the angles with the ends straddling the post cross members, half way or three quarters way up. Then to scribe a line inside the angle, cutting to the inside of this line. Dropping the cut board between the angle where marked off – next one! The boards were then fixed down at the point of the cross members or 'T' point using 5mm screws with the nuts underneath. At a latter stage more screws were fitted between the cross members along the angle.



At the planning stage, I decided that a section of the track had to be made removable to allow the inside grass area to be cut and the mower got out from the shed which is inside the track. Living near the Taunton

to Barnstable Railway bed, I knew of the Waterow Viaduct. It so happens that the piers of this are still standing - the steel work long having been removed as a hazard. I decided to base my viaduct on this one and an old photograph that happened to have a loco and carriages on it helped with arriving at some dimensions. This required four sections and three piers to be built. The centre two sections had to be made removable for access. The piers were cast in concrete from a mould.



I was helped at this stage by one of the founder members of the Bristol Group and I am very much in debt for his help and encouragement in this. While the concrete was setting, attention then turned to the steel spans. From the photo, there were two channels separated with lattice form of steel. This I interpreted as two lengths of angle each side, cross members at each end with the lattice work separating the two, top and

bottom. Made up from 1.5mm steel sheet sheared into strips, formed into angle and pop riveted then welded up when happy with it all. The lattice work was again sheared lengths, cut off at an angle for the ends, then pop riveted into place. This took some time but I feel well worth it for the spectacle it gives to the railway.

With the exception, I think, of one track I have visited, all have been laid using brass bullhead rail. My idea was to use flat bottom nickel silver rail for the main running lines and keep the bullhead for the sidings. After more looking around of the options available, I went for Peco Track and points. This is nickel silver flat bottom rail. The points used for the bullhead sidings were Marcway, these I had in stock from my plans at our previous house. The first job to be done before track laying could start, was for the sleepers to be pre drilled. The tops were countersunk for the screws on the outside parts of the sleepers, not between the rails. Peco sleepers are marked on the underside for suggested hole positions, and I chose to go by this. With several boxes of track lengths to get through, this was tackled a bit at a time and in the end, it was not too bad.

Laying the track I used a set of aluminium formers cut to the width of the inside rail dimension. Two at 1 yard long and one at 3.75m and 4.25m radius. The raised part of the track was quick and easy to lay, as it was a case of drilling into the board through the pre drilled sleeper holes and fixing down using 3mm diameter stainless cross-head screws. I did use plated screws at first but they did suffer in the weather and were difficult, if wanted to remove any.

Track laying on the concrete area was a more lengthy process. This started by setting up the track in the position wanted, set to the radius etc; then spotting through the pre-drilled sleepers into the concrete with a 3mm tungsten drill. The track was then removed out the way, the holes drilled out for plastic rawlplugs (yellow), track then replaced, aligned up and then screwed down!! It was a great satisfaction when the

two ends were connected. I then had a steam up! This was at the end of 2014.



2015 was the first year of GtG's with five held. The track worked reasonably well but a couple of changes will be made for this year's running. These are track layout changes in the engine preparation sidings to cater for engine owners' needs (health/age related). My wife asks me "is it finished now?" - but as we all know, it's never finished. I am no exception and have many ideas/plans for the future. Adding station buildings around the track, areas of track ballast and perhaps viaduct details for starters.

If any member is passing this way and would like to come and visit the track, then there will be a very warm welcome for them. Tea and possibly cake! I only ask that they contact me before hand to check we

will be here. Either by email or by phone - details for both from the membership list.



## Silver Steel

What is silver steel? “Silver Steel is a High Carbon bright steel” that was reputedly first produced by Peter Stubbs around 1880. Peter Stubbs was a file manufacturer who built a reputation for quality and by the early nineteenth century was exporting to Europe and the Americas. The business expanded into the manufacture of other tools, in particular for the watch and clock industry and it is probably this that led to the development of Silver Steel.

At first fractional sizes were manufactured, followed by Stubbs’ introduction of a wire gauge, the sizes being defined in Numbers and Letters. It gained international acceptance also being adopted for drills. The smallest size, No. 80, measures only 0.0135” .

Stubbs became the generic name for Silver Steel but several other manufacturers followed suit. In 1947 a British Standard 1407 was issued. It was revised in 1959 and again in 1970 when metric sizes were added.

### Tolerances

#### *Rounds*

##### Fractional Sizes

Below 1" plus and minus 0.00025"

1" and over plus and minus 0.00052"

##### Metric Sizes

Below 25mm plus 0.000mm minus 0.010mm

Above 25mm plus 0.000mm minus 0.020mm

#### *Squares*

All Sizes plus and minus 0.001"

### Standard Lengths

13", 78", 330mm, 2 Metres

### Heat Treatment

#### *Hardening*

For maximum hardness (66 Rockwell C) heat to 770/790 degrees C (at this point the steel is no longer magnetic, and is cherry-red), quench in water or preferably 10% brine

#### *Tempering*

Soak for at least 1 hour at the following temperatures

150 C to obtain 64/66 Rockwell C

200 C to obtain 62/64 Rockwell C – very pale straw

250 C to obtain 58/60 Rockwell C - brown

300 C to obtain 54/56 Rockwell C - blue

Note that the low to medium temperatures are well within the capabilities of the domestic oven, and the time required is well under that for the average hair-do.

Chris C.

### **Forthcoming events**

Don't forget that we meet on the first Saturday of every month at Worthy Moor for a steam-up (and chat), and now on the Sunday 2 weeks later. Please come along. Check the web site for details of meetings at OHSCC.