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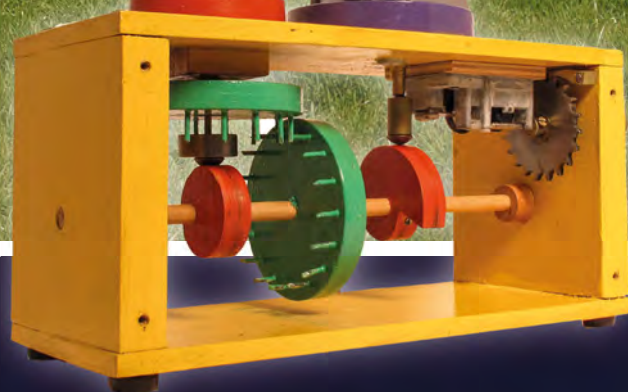
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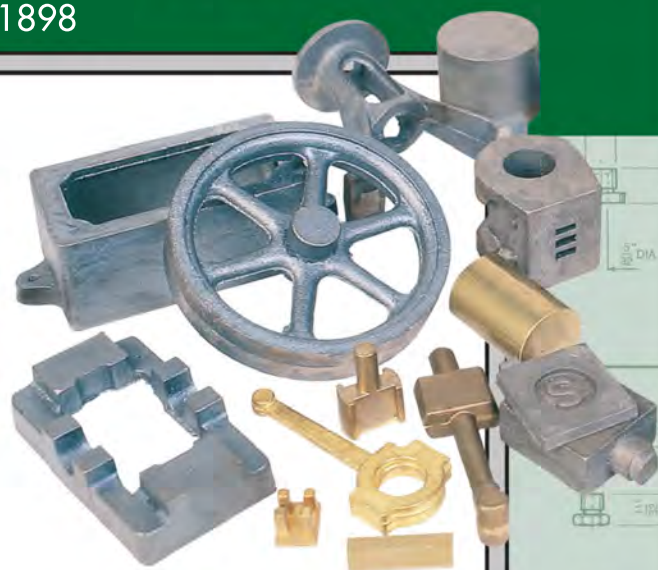


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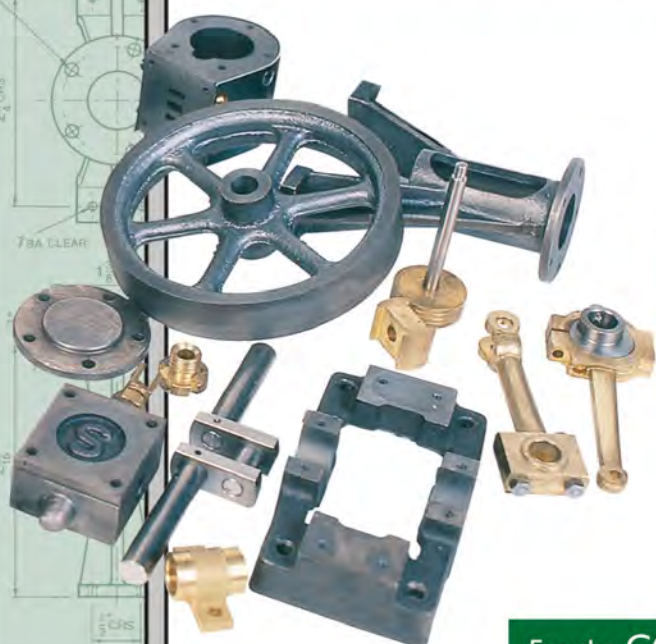
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FRONT COVER

Club member Ellis helped to build the SAC Club Burrell Lady Sylvia. Photograph: Alan Barnes

EDITORIAL



NEW BLOOD FOR THE HOBBY

Last month, I commented that model engineers often appear to be older than those taking parts in other modelling activities. Many people have gloomily suggested that this means the death of the hobby cannot be far away. At this point, there is much sucking of teeth, perhaps a sip of tea or beer, and the conversation changes to a less gloomy topic.

Not everyone gives up at this point. Back in 1979, the National Traction Engine Club formed a junior section for those under 21. In this issue, we report on their latest project, building a 4 inch Burrell. Many people have put a lot of effort into this, both those youngsters getting hands-on experience plus the pleasure of driving a completed model, and the unsung heroes who organise the project, no mean feat in itself.

Incidentally, the older youngsters from the founding of the club will be approaching their 60s now – are they still toiling away in their workshops?

One man who has been toiling away is Dave Rowe. Faced with two grandsons who liked nothing better than to read a tool catalogue, he embarked on building a series of automata to educate them in some basic mechanical principles and show the joy of making things by hand. His first, a rhino tamer, appears on page 30. While this might not be the watchmaker work seen in the finest mechanical music boxes, it's a start and who knows where an enthusiastic youngster might go from there?

They could do worse than follow the example of Solomon Johnson who has written this month's Young Engineer column. I won't steal his thunder, but he's making a name for himself in the hobby.

Finally, there is more new blood in the editor's chair. This is my last issue as I'm off to spend more time on our sister magazines BRM and Garden Rail. Next month the magazine will be in the safe hands of Andrew Charman, (andrew.charman@warnersgroup.co.uk) editor of Narrow Gauge World and a model engineer since his school days.

It just remains for me to thank all the contributors and readers for the last 6 months, with special mention for John Arrowsmith who has been such an important part of this magazine.

Phil Parker
Editor

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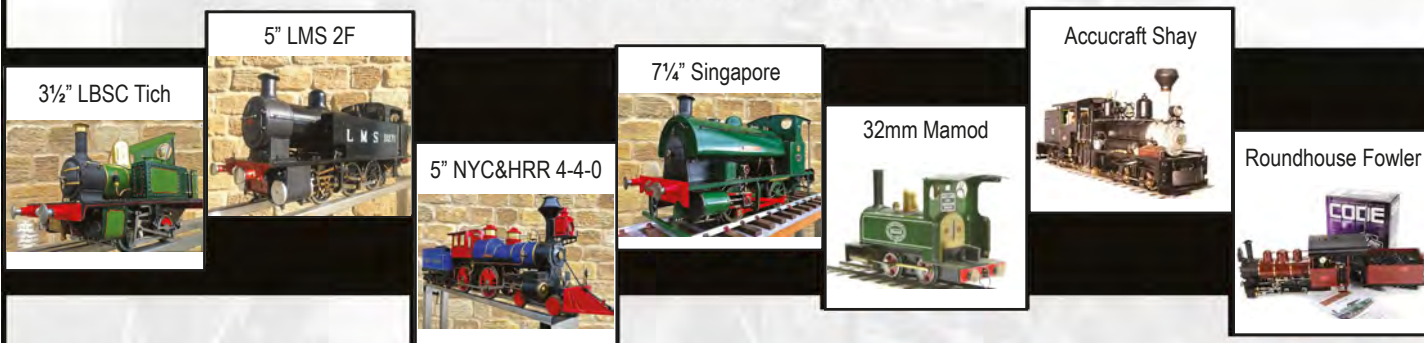
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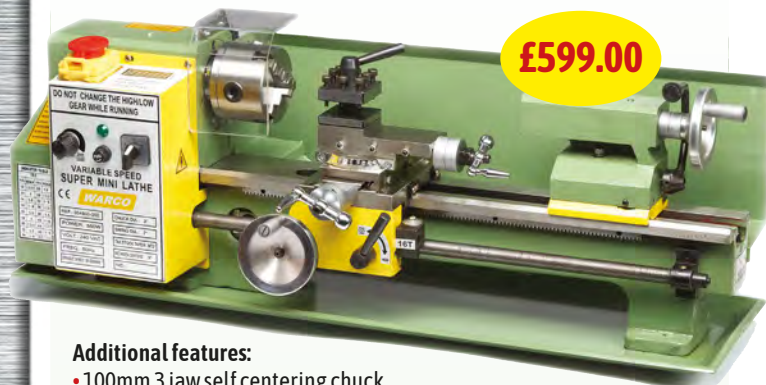
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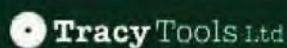
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Steam Apprentice Club

Many apprentices make Burrell work. **Alan** reports on a major effort to get youngsters involved in our hobby.

BY **ALAN BARNES**

In 1979 the National Traction Engine Club founded The Steam Apprentice Club for young enthusiasts under the age of 21 with an interest in road steam engines. This young person's branch of the National Traction Engine Trust is "dedicated to encouraging and supporting young people's interest in steam, whether they wish to learn more about the technical side and maintenance of steam engines or wish to visit steam rallies, take photographs or record engines".

For nearly forty years the SAC has encouraged youngsters to work on and understand traction engines, steam rollers and steam wagons their history, design and manufacture. The Club also offers regular opportunities for their members, under supervision, to gain hands on experience of driving and firing a wide range of steam engines.

This is certainly in line with the SAC objectives which are to:

- Encourage youngsters to join the SAC and learn in a safe environment the requirements and the workings of Road Steam Engines.
- Encourage apprentices not only to be competent around an engine, but when old enough to pass the competency test.

ABOVE

Glen Prince supervises SAC member Ellis Morris with the Burrell at Shuttleworth Park during at SAC Driving Weekend April 2017 (Alan Barnes)

- Arrange steam apprentice days with rally organisers and groups of willing individuals
- Raise technical knowledge by arranging talks and practicals with "craftsmen"
- Introduce families to engine owners with a view to long term experience.

The "Driving Weekends" which are held regularly in different parts of the country are very popular, well attended events and here the youngsters have the opportunity of getting "up close and personal" with all manner of steam engines. While helping to crew a full sized engine certainly has its attractions, no less popular are the scale



The launch of the project at the Great Dorset Steam Fair in 2012 (SAC)



miniature engines which are included in the engine line up at these events.

It was a driving experience day held a few years ago at St Albans which gave rise to an ambitious project which it was hoped would fire the enthusiasm of SAC members. The present SAC Chairman, Elaine Massey and colleague Helen Tyrell spent a couple of hours over coffee having what certain corporate executives would refer to as a “brainstorming session”. The discussions were wide ranging and toyed with many ideas for future SAC activities. Elaine admitted to me that probably the most ambitious of

ABOVE LEFT
Good progress was made during that first workshop during the Dorset event (SAC)

ABOVE RIGHT
Progress after 6 days of work (SAC)

BELOW
Even a young apprentice knows the value of keeping a big hammer close to hand (SAC)

the many items on the list was “Build an Engine” and even at the time they thought that there was no way that this would be possible but the idea would not go away.

The next day Elaine discussed the idea of building an engine with the then Chairman, Kevin Munn. Understandably the building of a full sized traction engine was not really an option, the costs time and logistics being prohibitive but a 3 inch scale miniature engine was certainly a viable option. With the various engine kits available on the market there was a reasonable choice of models and an added advantage would be that the completed model

would be fairly easy to transport to events all over the country. This was important because the SAC membership was spread far and wide and the build project, if it went ahead, should ideally involve as many apprentices in different parts of the country as possible.

Discussions over the proposal continued and the idea of building a 3 inch scale model gave way to a larger 4 inch miniature which would be more versatile. The project had to be presented to the NTET General Council but a far more detailed plan would have to be prepared before this could happen.

Kevin and Elaine arranged a meeting with Steam Traction World to discuss the proposed project and they were only too willing to help the SAC offering their 4 inch scale Burrell Agricultural Traction engine at a greatly reduced cost. This was a major step forward and approaches were made to a number of other companies for further support. Craftmaster Paints agreed to provide paint, consumable and help with the building of the engine and a number of offers of workshop space and engineering facilities were received. Walter Midgley offered insurance while Peter Hawkins and Dave Wothers offered boiler testing services and assistance with elements of the build.

This was all very positive and the SAC began their own fund raising activities to fund the cost of buying the engine while the NTET Committee was asked to underwrite the costs of the project. By the time the proposal was made to the Committee half of the required amount had already been raised and the additional and “on costs” of the





Engine on blocks with hind wheels removed (SAC)

engine were covered by sponsors. A crucial appointment had also been made with Hugh Dyson having agreed to take the role of project manager to guide and advise the apprentices through the build.

As Elaine said "I must say a word about the Project Manager as Hugh Dyson achieved what many had believed was impossible

ABOVE

Young Ellis Morris (right) attended many of the SAC workshops (SAC)

BELOW

Getting to grips with the nearly finished engine (SAC)

with the engine being completed on schedule, making her first appearance at the Bedford Rally in September 2014 prior to her attendance at the NTET Road Run later that month".

The project received more support from the Statfold Barn Railway who not only provided additional funding but also

brought an Ifor Williams trailer which would be used to transport the engine. More funds came from a generous private sponsor, Porterbrook Leasing and money was also raised by selling models which had been left to the NTET along with a series of original Peter Wilford cartoons. All valuable contributions to the fund.





June 2014 and the engine
nears completion (SAC)

The “Build a Burrell” project was officially launched at the Great Dorset Steam Fair in September 2012 and no time was lost as the first of the build “workshops” was held at the event. Work began on the first of the twenty four kits which make up the Steam Traction World Burrell and the apprentices, working under the guidance of experienced model

ABOVE

Lagging still to go on but the Burrell is looking good at this stage (SAC)

BELOW

Unveiling the completed Burrell at the BSEPS rally at Old Warden in September 2014 (SAC)

engineers made some significant progress. During three days at the GDSF the young boys and girls worked hard to produce a completed front end including the front axle assembly, perch bracket, smoke box, chimney base and chimney. A start had also been made on the hornplates, the rear wheels and a good deal of other preparatory

work. This was an excellent start to the project which was aiming to have the engine completed in a two year timescale, a target which some thought was nearly impossible.

The SAC website and Club magazine “Raising Steam” gave details of the dates and locations of the various workshops which were arranged during the following



year. The main aim was to hold the “build” workshops at locations in different parts of the country which would give the opportunity to take part to as many apprentices as possible. At all the workshops the apprentices would be working under the supervision of those adults who had agreed to be involved and had overcome their “reservations” about youngsters being let loose with power tools!

Excellent progress was made during 2013 largely due to the enthusiasm of the apprentices and the efforts of project manager Hugh Dyson to keep the project moving. At the beginning of 2014 the workshop dates were announced and these were planned to take the build through to the target completion date in September 2014. There was still an awful lot of work to be completed but there was no lack of commitment to meet the chosen deadline.

Key elements of the motion were completed at the Market Harborough workshop in April and at Atwood Bank in May the engine was really beginning to take shape with some of the pre-painted parts being assembled. Work on the injectors and clack valves was completed during the summer which also saw the fitting of the regulator and the engine being made ready for some test running at the workshop held during the South Cerney Rally. Peter Hawkins of Hawkins Inspection Services Ltd who was one of the project sponsors completed a satisfactory steam test and a full boiler certificate was issued.



Steam debut at Old Warden (SAC)



ABOVE

The large driving seat on the rear can accommodate an apprentice and their instructor (Alan Barnes)

LEFT

Front end detail of the Burrell (Alan Barnes)

RIGHT

Footplate detail (Alan Barnes)

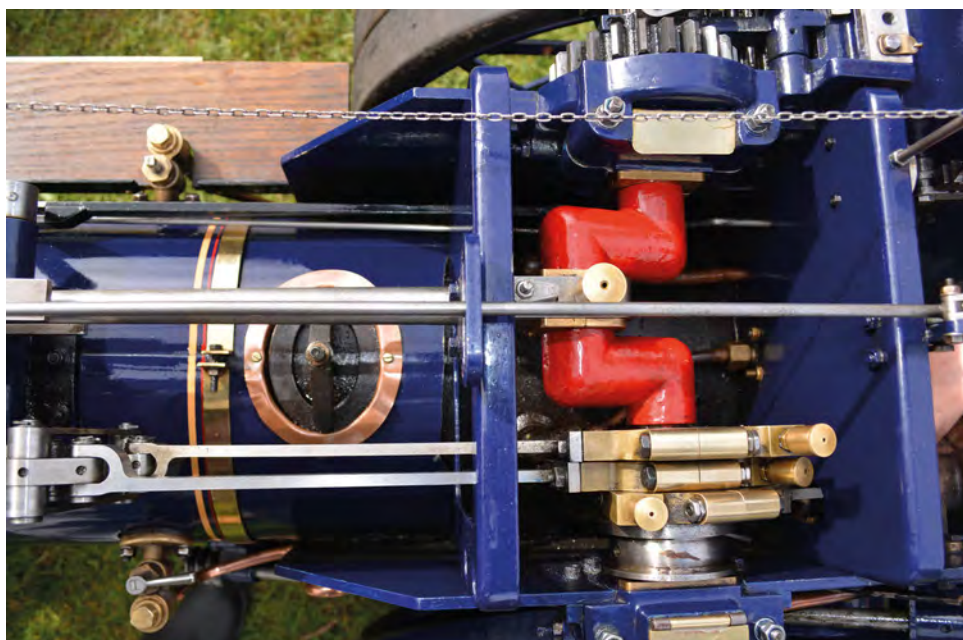


With the completion deadline fast approaching the SAC Burrell Project news reported “over the last few days the midnight oil has been burnt to have the SAC’s 4 inch scale Burrell completed in time for the official unveiling this Saturday. The model is now finished and appears to be running well. The lagging has been placed on the boiler and is painted and lined. Tomorrow “Lady Sylvia” will be transported to Old Warden in its trailer sponsored by Porterbrook in readiness for Saturday’s ceremony. We are hoping as many of the apprentices who have helped Build a Burrell will be there to see the result of all their hard work and perhaps have an opportunity to drive the model under the supervision of an experienced adult engine driver”.

The new Burrell had been named “Lady Sylvia” after Sylvia Dudley one of the founders of the Steam Apprentice Club and the official “Launch Party” for the engine was held on 13th September 2014 at the BSEPS Rally in the grounds of Shuttleworth Park in Bedfordshire. Thanks to a lot of hard work by all those involved with the “Build a Burrell” project the engine was finished in time for its public debut at the rally and just two weeks later on 27 September the miniature Burrell led the engines out at the beginning of the NTET 60th Road Run.

Now three years on since the Burrell was completed the engine has spent time in the custody of various NTET members and has made appearances at rallies and events across the country and the SAC is keen to continue making the engine available to a wide audience.

My thanks to Elaine Massey, Nick Bosworth, Ellis Morris and the SAC for providing information and photographs. ■



ABOVE
Motion detail
(Alan Barnes)

RIGHT
Engine nameplate
“Sylvia” after
Sylvia Dudley
one of the
founders of
the SAC (Alan
Barnes)



BELOW
The traction
wagon is a
nice addition
to the Burrell
outfit (Alan
Barnes)



40th Midlands Model Engineering Exhibition 2017

Competition and Display Classes

John completes his report of the Midland show with a look at the club stands

BY JOHN ARROWSMITH

Once again the clubs and Societies contributed a great deal to the Midlands Model Engineering Exhibition with some superb examples of model engineering at its best.

As usual all the exhibiting clubs were asked to judge the best displays and this year the Best club stand was judged to be that by the **Northampton Society of Model Engineers**. The stand was colourful, well laid out and contained a wide range of well built exhibits (**Photo 1**). Second place went to the display by the **Guild of Model Wheelwrights** who always have a colourful and comprehensive selection of well made models on show (**Photo 2**). The Third place was awarded to the **Erewash Valley MES** with another well laid out display of their clubs work (**Photo 3**).

Among the models on the Northampton club stand was a good example of a 5" gauge LNER B1 locomotive and some excellent



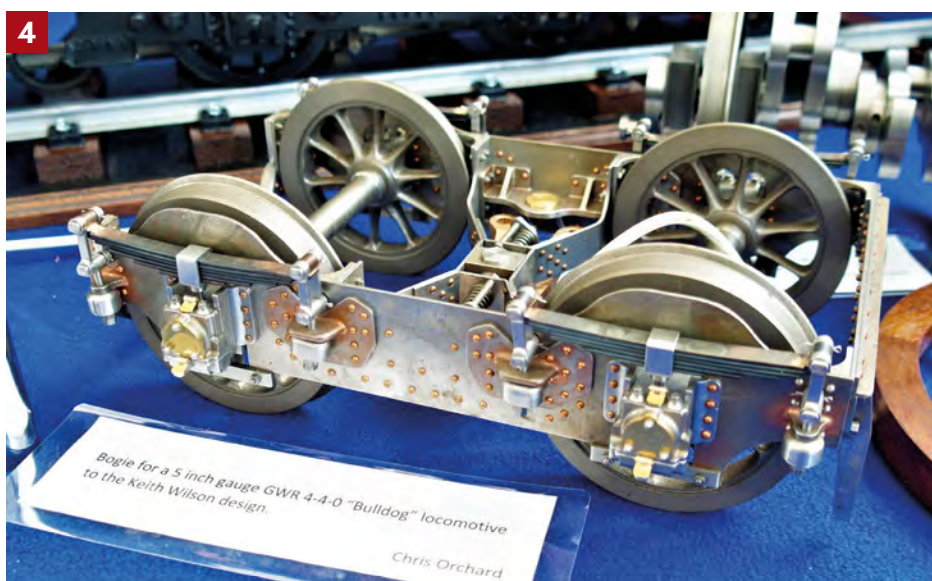
workshop equipment built by Rik Shaw. The 5" gauge bogie from a GWR Bulldog under construction by Chris Orchard was another excellent piece of work (Photo 4).

On the Model Wheelwrights display I thought the little Grunson Gun Carriage was a distinctive model and contrasted nicely with the WWI Army Pigeon Loft (Photo 5) both built by Brian Young.

The Erewash Valley club stand attracted attention because of the wide range of models on display but particularly the 1/4 scale model of a WWII Mustang which was suspended over the display, well made it captured the details of these famous aircraft.

A distinctive display of posters detailing the 40 years of the Midland Exhibition was a nice feature which showed how the promotion of the show has been very consistent and improving over all this time (Photo 6).

Another annual award is made to club magazines which have been selected from the many we receive every year. The winner for 2017 was the club magazine from the **St Albans & District Society**, "The Gazette" edited by Michelle Hysom, Second place went to the **Vale of Aylesbury Society** magazine "The Link" edited by Robin Howard and Third place went to the **Worthing & District Society** newsletter edited by Derek Langridge. Congratulations are in order to all these editors and club magazines for such high standards and excellent production, we hope you maintain the standards you have set and we look forward to continuing to receive all of them during 2018. (Editors note: I'd like to second this, judging was really difficult, with many publications being professional quality, a tribute to their editors).



All the other club displays provided an eclectic mix of both styles and models with some excellent workmanship on show. The **Melton Mowbray MES** presented a good selection of rolling stock and locomotives combined with models under construction to provide visitors with a good image of the club activities.

A first class prize winner took pride of place on the City of Oxford display with Ron Heads 5" gauge 3 Midland wagon (See last month's EiM) prominent among another varied selection of well made models and equipment.

The **Nottingham SME** presentation comprised a wide range of locomotive models and prototypes from a large 7¼" gauge LMS Class 10000 locomotive down to a Gauge 1 LNER V2 (Photo 7).

Meccano has always been a favourite with the visitors as it revives so many childhood memories for the older generations and it still shows what a great material it is to build both complex and simple models. The display by the **Midland Meccano Group** was a first class presentation with a large Lancaster Bomber and a Garage scene with traditional petrol pumps and vintage cars typical of the standard to which Meccano has developed.

From the **Coventry MES** (Photo 8) came another excellent selection of models of many different types and gauges along with some good under construction models. The little Sentinel vertical boilered 0-4-0 was an unusual prototype.

The large double sided display by members of the **Bromsgrove SME** provided plenty of fine models to enjoy. The 5" gauge chassis of an LNER V2 under construction by Martin Sheridan showed some superb workmanship and would make a superb competition entry when complete.

Blackheath Model Power Boat Club are one of the regulars at the Midlands Exhibition and the combination of high speed craft mixed well with traditional boats in a range of sizes and types. Another regular support is the **Kingsbury Model Boat Club** who provided a wide range of marine craft from warships to canal boats. The display was very colourful and displayed some really fine workmanship and detail (Photo 9).

The **Steamboat Association of Great Britain** provided a full size boat with a range of engines and fittings to demonstrate the equipment needed to enjoy this type of steam powered craft.

Contrasting nicely with the award winning HMS Monmouth (seen last month), the trio of 18th century warships on the **Knightcote Model Boat Club** showed some excellent workmanship and attention to very fine detail (Photo 10).

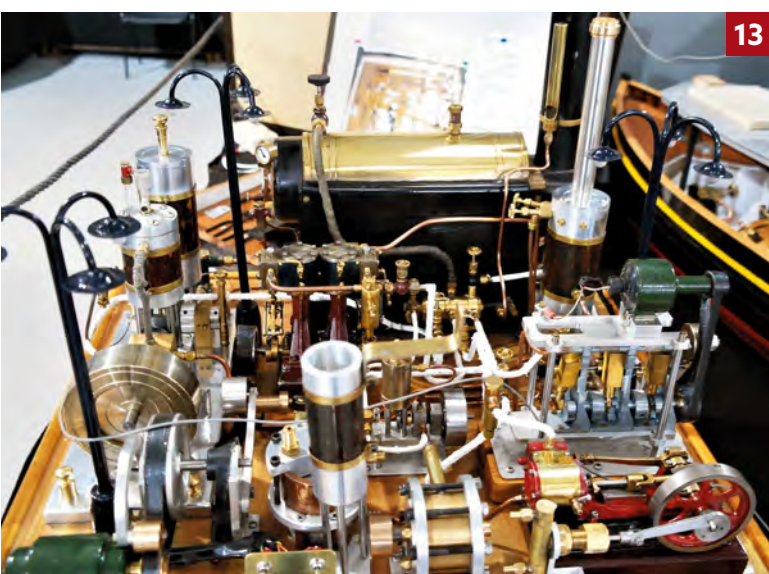




11



12



13

A past winner of the club shield, the **Hereford SME** display contained another award winning exhibit with Brian Pallisers Dump Truck described in October's EiM alongside a varied collection of models and equipment.

An eclectic selection of exhibits on the **Wolverhampton MES** stand varied from the superb example of a Burton Patent Clip Drum (**Photo 11**) to a Turret from a Military tank under construction with just about everything else in between.

The **Birmingham SME** (**Photo 12**) again had an excellent range of quality models on show but for me the coffee table collection was an amazing piece of work (**Photo 13**). I was told that it was a coffee table without its top, how did the builder manage to get such a wide range of models and equipment into such a small space.

The **7¼" Gauge Society** shared a space with the **Northern Association** and featured a very nice 3" scale Bagnall locomotive. This loco has a rosebud grate fitted which has transformed its operation (**Photo 14**).

As usual the **SMEE** display contained a wealth of interesting exhibits including a selection of some very old models. One of these was a steam powered engine from an aeroplane, yes I couldn't believe it either but this machine was developed in 1913 by H. H. Groves and using a flash steam boiler was successfully flown in a CANARD Biplane (**Photo 15**).



14



15

The **National 2½" Gauge Association** provided a full range of models and castings to demonstrate what can be achieved in this gauge.

Just a small selection of models on the **MSRVS** display inside (**Photo 16**) but these were complemented outside with the engines under steam and forming part of the **Fosseway Steamers** group. There are a couple of awards made annually to members of The Fosseway Steamers and this year the Leonard Crane Steam Trophy was presented to Richard Kew for his 6" scale Ruston Proctor SD Tractor and the Best Engine Management Skills Shield was awarded to Tony Baldwin for his 4" Foster DCC Traction Engine.

This group of hardy steamers provide a great steam experience for visitors with their demonstrations and operations in all weathers. There were some very heavy downpours during the show but this did not detract from having live steam engines performing (**Photo 17**). Phil Scarborough's 4" Garrett was coupled to a suitable circular saw and proceeded to make plenty of planks and sawdust!

The **Coventry Society** provided their portable railway track which provided a chance for a train ride behind a steam loco kindly loaned by Polly Models (**Photo 18**).

To sum up the proceedings of the clubs and demonstrations I can only say that without them and all their efforts, it would be a poor show. These dedicated model engineering clubs and their members make this show come to life and demonstrate clearly why model engineering is such an absorbing and interesting hobby, long may it continue. Thanks to everyone concerned, all your efforts were very much appreciated even if you have not had a mention. ■

SEE MORE PHOTOS ON-LINE

With so many fantastic models on display, we can't fit all the photographs in the magazine.

More pictures can be found in the Model Engineering section of www.rmweb.co.uk



Improvements to your hacksaw

A humble tool, the hacksaw deserves our attention to work at its best.

Jacques takes a closer look

BY JACQUES MAUREL

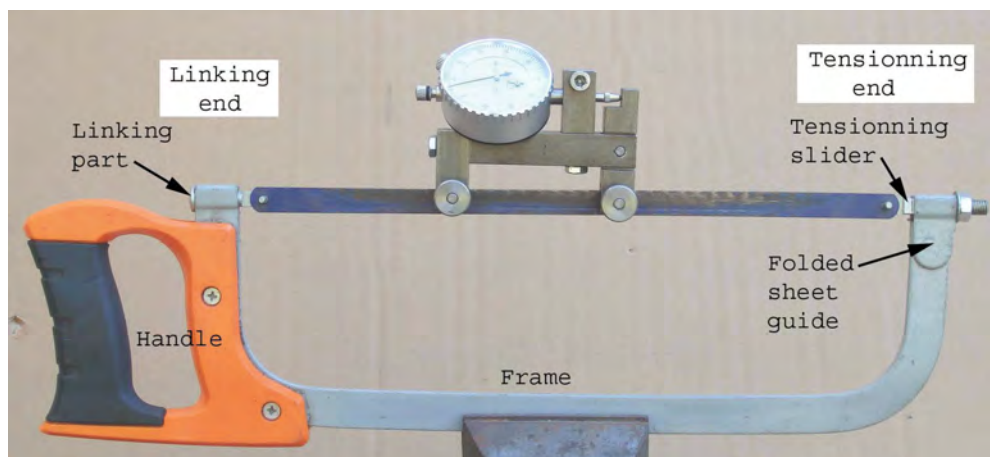
TENSIONING THE BLADE

The hacksaw is one of the most used tool in our workshop, even if we own a band-saw, I use it almost every day. I've contrived an extensometer for band-saw blade (see EiM January 2018) so why not use it to test the hacksaw blade (**Photo 1**)?

The hacksaw blade having the same cross section as my band-saw blade, 13x0.65mm, I thought I could set the same tension (while here it could be more as there is no bending

RIGHT – PHOTOGRAPH 1

Testing a hacksaw blade with the extensometer.



THE MIDLANDS GARDEN RAIL SHOW

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2018 marks the 17th year of The Midlands Garden Rail Show, Large Scale Model Rail, which continues to go from strength to strength and is regarded as one of the leading garden rail exhibitions in the UK.

The exhibition, which will take place at the Warwickshire Event Centre near Leamington Spa, attracts over 2,000 enthusiasts from all over the UK and Europe. Organisers are looking forward to presenting another inspiring exhibition showcasing exciting railway layouts covering the larger gauges and scales.

This exhibition is well supported and organisers are expecting 32 leading suppliers and 15 layouts and displays covering many gauges. Visitors will see live steam model locomotives hauling coaches and wagons – the real thing in miniature.



ADMISSION PRICES:	ON LINE	FULL PRICE
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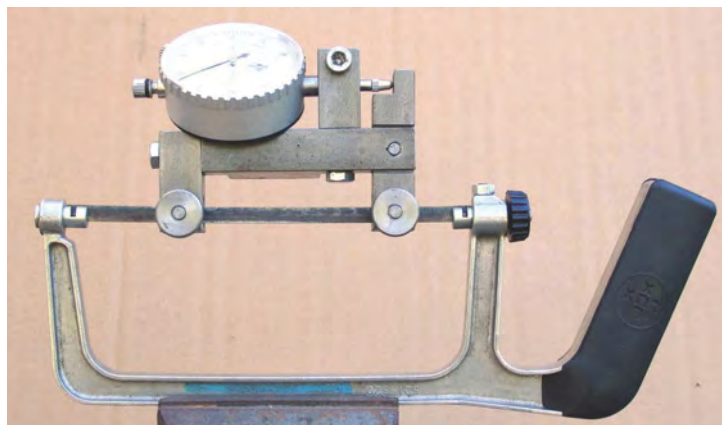


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LEFT PHOTOGRAPH 2
Marking the frame to show the correct tension.



RIGHT PHOTOGRAPH 3
Using the extensometer on a small saw.

stress due to the blade wrapping around the pulley) so 0.06 mm extension read on the extensometer DTI as defined in the last issue. This was set by turning the wing nut, but as this was not possible by hand, I replaced it by a hex nut driven with a wrench.

The elastic bending of the saw frame lead the tensioning slider to have 7mm throw. This was marked out with a felt pen (**Photo 2**), and used to get the right

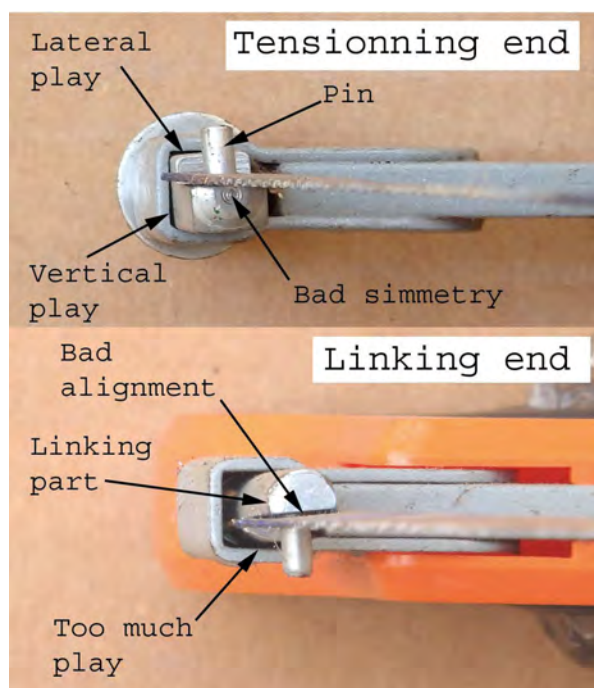
tension with no extensometer the next time. This worked well for all the frames I've experimented, the cross section being : a plain rectangle, a rectangular tubing, an elliptical tubing.

The extensometer was also experimented on small saws (**Photo 3**).

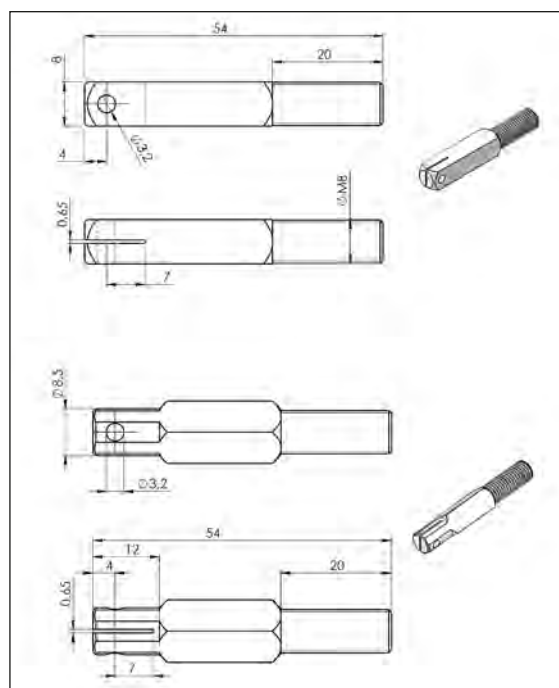
This tension was far more than the one given previously with the wing nut, and the saw blades being stiffer proved to work far better.

MODIFYING THE BLADE LINKS

A thorough examination proved that these parts were often very badly made (**Photo 4**) so I decided to make new ones. In place of the cantilever type pin, I used fork type parts with removable pins (see **Drawing 1** and **Photos 5, 6, 7**), yes you can lose them easily when replacing the blade, but it's a far better solution to get a good symmetry and alignment, if lost, they are very easy to make using Ø3.2mm standard nails.



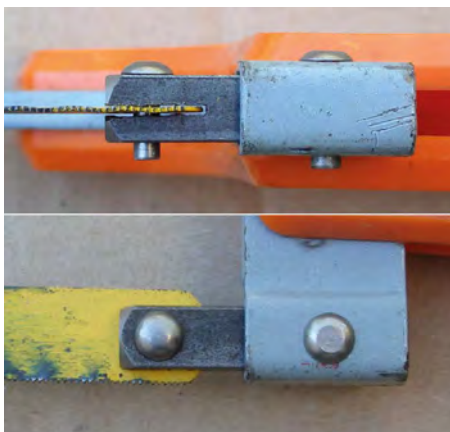
LEFT PHOTOGRAPH 4
Badly made parts requiring attention.



RIGHT DRAWING 1

BELOW - PHOTOGRAPHS 5, 6, 7

Home made replacement parts fitted to my hacksaw.



To get no lateral play (there is no problem with the vertical play), I put a piece of 8mm square rod in the square hole (folded sheet guide) and squeeze the whole in the bench vice. The rod is now taken out by hammering with a pin punch. The resulting fit with the slider will be slightly tight but not too much (move it with a soft hammer). The linking part is riveted on the linking end.

MACHINING

Photo 8 shows how to hold a 8 mm square in the 3 jaw chuck by using a Ø11mm bore tubing split; the 2 halves being tightened by rubber bands set in 2 grooves. **Photo 9** shows how to start the sawing of the saw slot, by making a notch with a triangular file to guide the saw blade at the beginning of the cut.

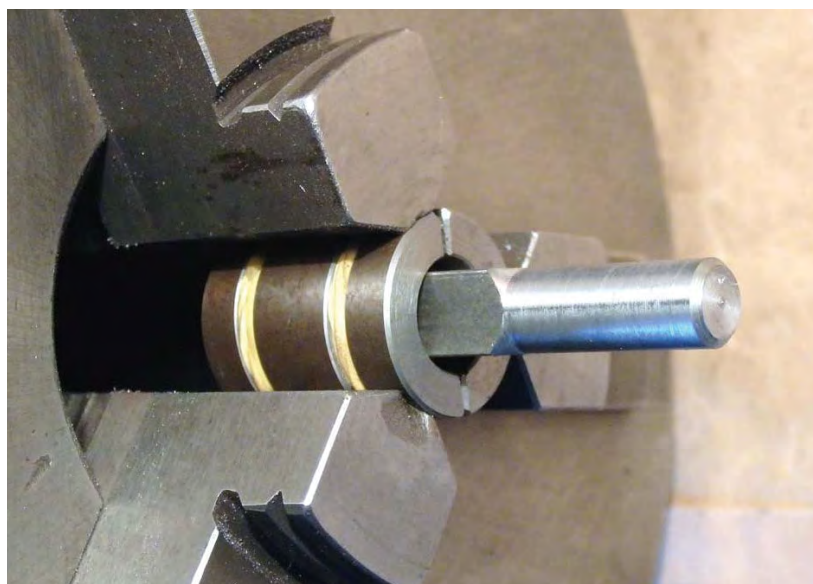
WHICH TYPES OF BLADES AND FRAMES

The blades are characterized by the number of teeth per centimeter. The usual values are: (**Photo 10**)

- 12 teeth/cm for cutting thin sheet and hard steel: gauge plate, silver steel, hard screws (10-9, 12-9 quality), rolled pins.
- 10 teeth/cm for common use, it's the type usually found in DIY stores.
- 8 teeth/cm for sheet 2.5mm upward and rod more than Ø5mm. This is my most used type, but not easy to get.

RIGHT PHOTOGRAPH 8

Holding an 8 mm square in the 3 jaw chuck.



BELOW LEFT PHOTOGRAPH 9

Starting the saw slot, by making a notch with a triangular file.

BELOW RIGHT PHOTOGRAPH 10

Different saw blades.

- 6 teeth/cm for quite large pieces but not in steel. They are even more difficult to get than the previous ones.
I use also not usual ones, they are made from broken band-saw blades, the fixing holes being drilled with a Ø4mm carbide tipped masonry drill.
- 4 teeth/cm useful for cutting plastics but much useful for cutting branches in the garden.
- Variable pitch (2.5 to 4 teeth/cm) only for plastic as they hook so deeply in wood that the cut is impossible.
- Double blade: 2 blades (from the same batch) set side to side for cutting screwdriver's slots into

screw heads. Of course you'll have to make special linking parts (wide slot) to be used in a dedicated frame.

- Small saws: being only 150mm long used in small frames for tiny works.

Note about screw drivers slots. The ISO standard is as follows:

Screw diameter 2.534568

Slot width cyl and flat head 0.600.811.21.62

Slot width grub screw 0.50.60.8111.6

The blades width (including the set) are: Standard blade: 1mm; 2 standard blades 1.7mm; small blade: 0.6mm



FRAMES (Photo 11)

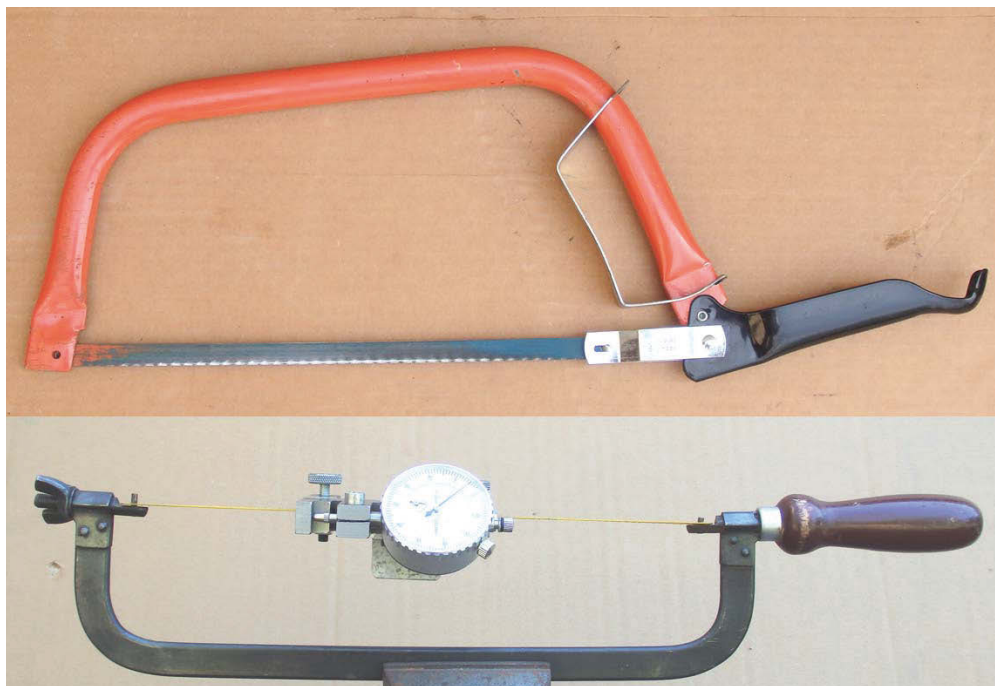
Apart from the standard frame there are special ones:

The “large frame” (from Sandvik) worth using for cutting sheet metal. The tensioning is made by a toggle lever (no adjustment possible), the DTI showed 0.04mm strain, slightly small but sufficient.

The “axial handle” very useful for cutting long strips of sheet by setting the blade perpendicular with the frame. These axial handle frames are now difficult to find, but it’s easy to make one from a common frame (Photo 12).

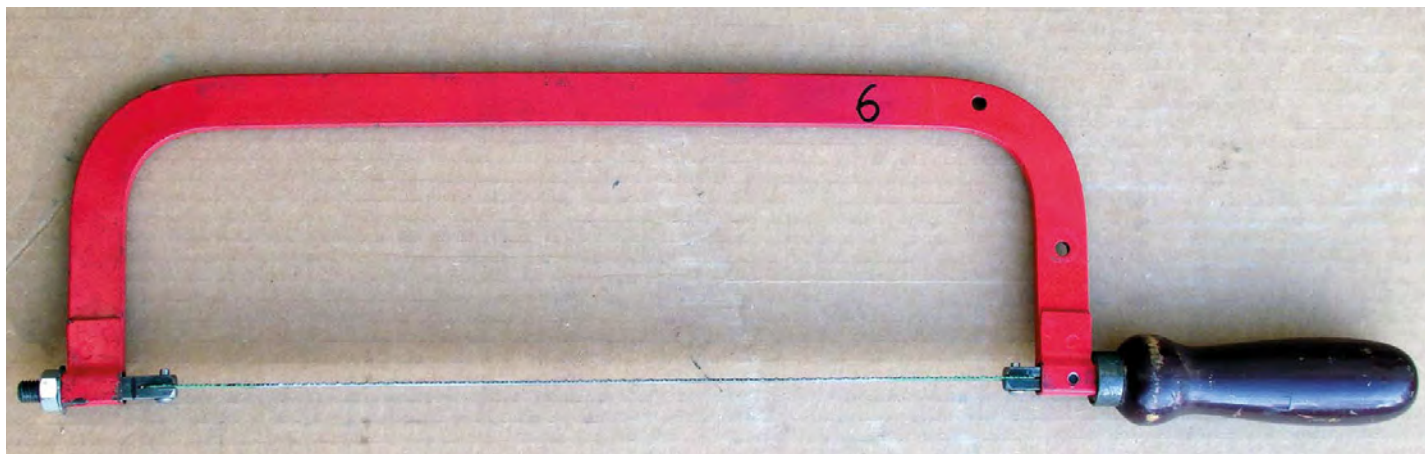
Photo 13 shows the pieces involved:

- A wooden file handle in which a Ø11mm hole is drilled.
- A ØM12, 30 mm long piece of threaded rod in which a ØM8 thread is tapped.
- A linking part having the same shape as the tensioning parts of drawing 1 but the total length being 50mm and the threaded length 15mm.



ABOVE
PHOTOGRAPH 11
Large and axial handle saw frames.

BELOW
PHOTOGRAPH 12
An axial handle frame converted from a common frame.



BELOW
PHOTOGRAPH 13
Parts required for the conversion.



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EM1

A home-made 4-jaw and other useful gadgets

The ever ingenious **Jan-Eric** makes some useful additions to his workshop

BY **JAN-ERIC NYSTRÖM**

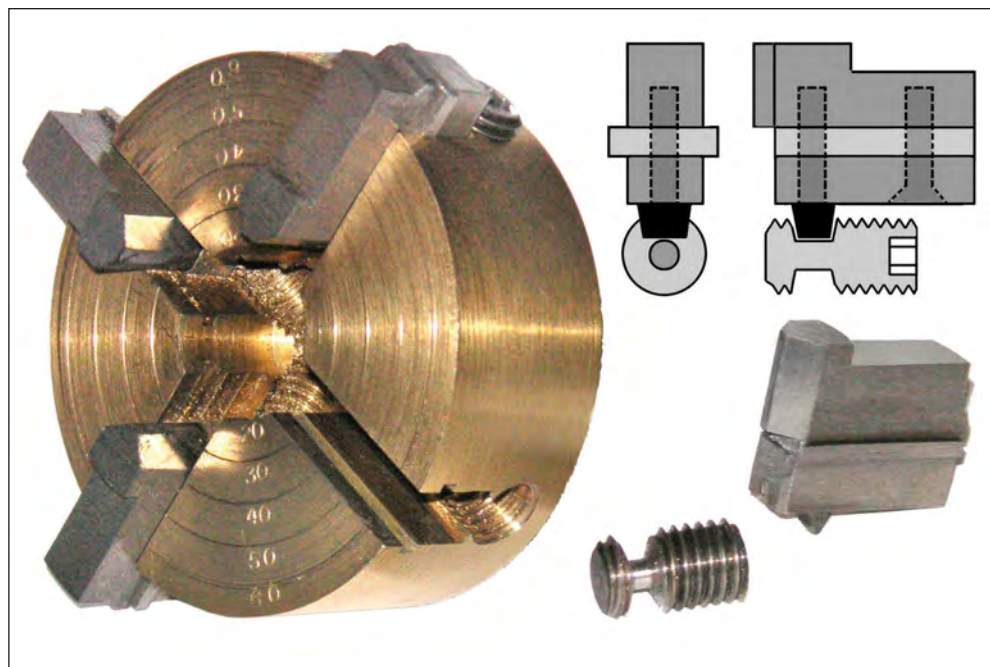
Many off-centre or eccentric turning operations really need a 4-jaw chuck, which enables you to position the workpiece exactly, something quite difficult to do using packing in a 3-jaw.

In my scrap-box, in which I save every even remotely useful mechanical or metal part, I found a flywheel from an old studio tape recorder, a very massive chunk of brass, almost 70 mm in diameter – I could hardly find better raw material for the body of a home-made chuck!

Photo 1 shows the result, made entirely on my little "Unimat 3" lathe: an independently adjustable 4 jaw, with a one-piece body. Thanks to the independent jaws, making it was not a precision job. Machining a scroll-operated, self-centring chuck would have been way beyond my skill and equipment...

The construction should be evident from the photo; I formed four slots for the jaws with an end mill, and fabricated the jaws from three pieces of rectangular steel, each. The slots in the chuck have smaller slots milled into their sides, conforming to the outline of the jaws; these slots keep the jaws in place. They were made with a narrow "Woodruff" cutter, which looks like a tiny circular saw on a shank. All milling had to be done very gently, with a small feed; the tiny Unimat is certainly not intended for heavy work!

The chuck jaws are moved by large hex-socket grub screws, formed as shown in the photo. They fit in threaded holes just below the slots in the chuck. The construction of the jaws can be seen in the drawing at top right; each jaw consists of three parts held together with two screws – one is recessed, the other is not. The head of the latter is formed to a trapezoid shape, in order to fit into the deep groove cut in the grub screw.

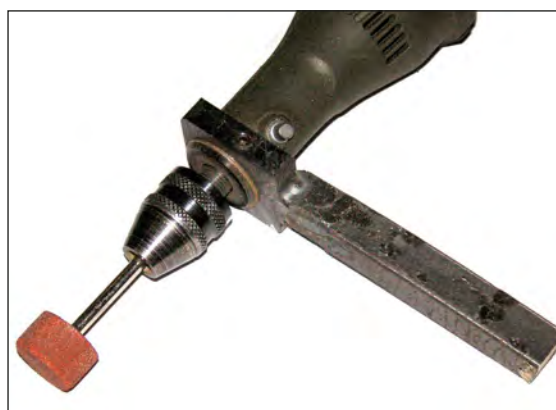


**ABOVE
PHOTOGRAPH 1**
A home-made
4-jaw chuck.

STILL MORE TOOLS

A few years after acquiring the Unimat, I decided to delve into model engineering in earnest, having experienced the exhilaration of running a ride-on train on Ollie Johnston's backyard railroad during a visit to his home in California. (Ollie was an animator at the Disney Studio, he animated Pinocchio, Bambi, Robin Hood, Baloo, and many others of the studio's classic characters. I had the pleasure of meeting him several times

**BELOW
PHOTOGRAPH 2**
A simple tool-
post grinder.



over the years. He passed away in 2008, aged 95.)

In order to build a ride-on train, a larger lathe was obviously necessary, so I chose one of those ubiquitous, cheap, Asian 9" by 18" models. It did need quite a few adjustments before it was reliable enough for such purposes! By now, after twelve years, which include building three steam engines, I begin to see signs of wear in that lathe, but nothing too alarming, at least yet.

Continuing making my own tools, I added a tool-post grinder, very simply made by attaching a shank to a Dremel-type mini-drill (this particular model is made by Proxxon), as seen in **Photo 2**. The shank is attached to a square piece of steel, with a hole bored to a snug fit around the neck of the grinder. A grub screw holds the grinder in place. The holder is attached to the tool-post just like any other lathe tool. This mini-drill, together with a large set of diamond-tipped bits as well as grinding wheels, cups and disks, wire brushes and wheels for polishing

and buffing, **Photo 3**, cost a total of less than 40 pounds. It has certainly proven its worth, in operations such as polishing the bores of small cylinders to a smooth finish.

MILLING ON THE LATHE

Before acquiring a milling machine, I did all my milling on the two lathes – however, the Unimat's milling attachment was sufficient only for very small parts, so a little gadget made for the larger lathe enabled me to use it for more substantial milling work.

This gadget, basically only a 90 degree angle built of square steel, enabled me to use the lathe top slide as a makeshift milling table.

Photo 4 shows the setup; the top slide is attached to the angle, and will provide feed in the Y-direction, while the cross slide handles X. The longitudinal feed of the lathe works in the Z-direction (i.e. depth of cut) – thus, the workpiece can be positioned and advanced as needed for milling.

All the milling work needed for the axle boxes and other parts of my first loco, a 4-4-0 "American" in 1.5" scale (described in this magazine in late 2015 to early 2016), was performed using this simple setup!



ABOVE – PHOTOGRAPH 3

A set of grinding accessories for the tool-post grinder.

ADDING TO YOUR VICES

Some lathe turning tasks require that the workpiece is attached to a face plate on the lathe. Larger pieces can be mounted with

clamps and bolts, but it is not practical to hold very small parts in that way. **Photo 5** shows a small vice I made to hold tiny parts on the home-made face plate. The vice is

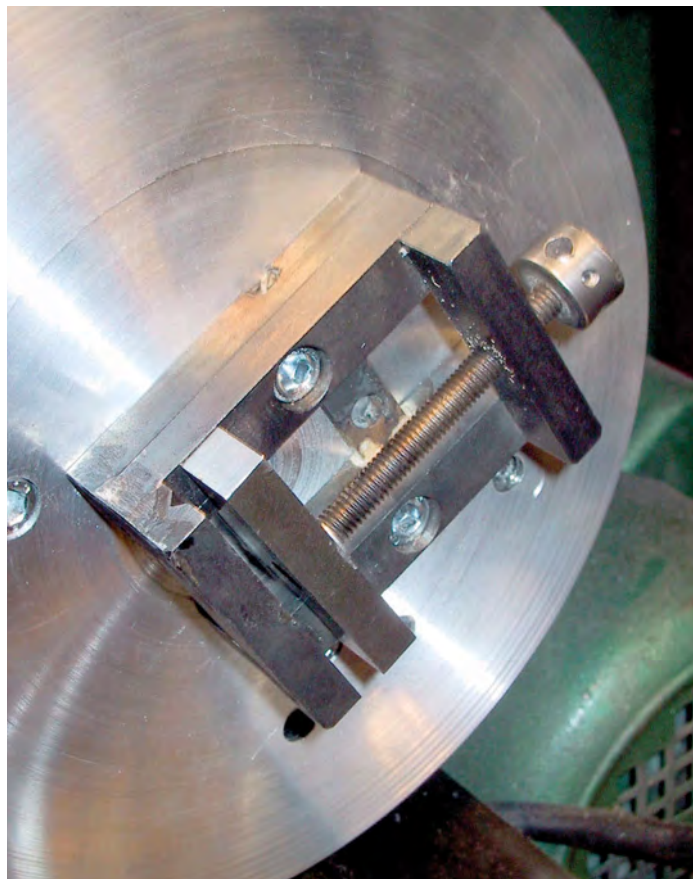


LEFT – PHOTOGRAPH 4

An angle bracket for milling.

BELOW – PHOTOGRAPH 5

A home-made vice, attached with two recessed M6 bolts, fitting into threaded holes in the lathe's face plate.



made from pieces of rectangular "key stock". The tightening of the moving jaw is done with a long, M6 screw with a knob attached, the other end pushing against the jaw. There is a threaded hole for this tightening screw in the frame of the vice, which is attached to the face plate with two countersunk M6 bolts.

For my next project, a 0-6-0 live steam loco (described here in 2016), I did obtain a milling machine and a couple of milling vices. The smaller one, intended for precision work, had smooth jaws, good for holding flat pieces, but not very useful for drilling or milling round stock.

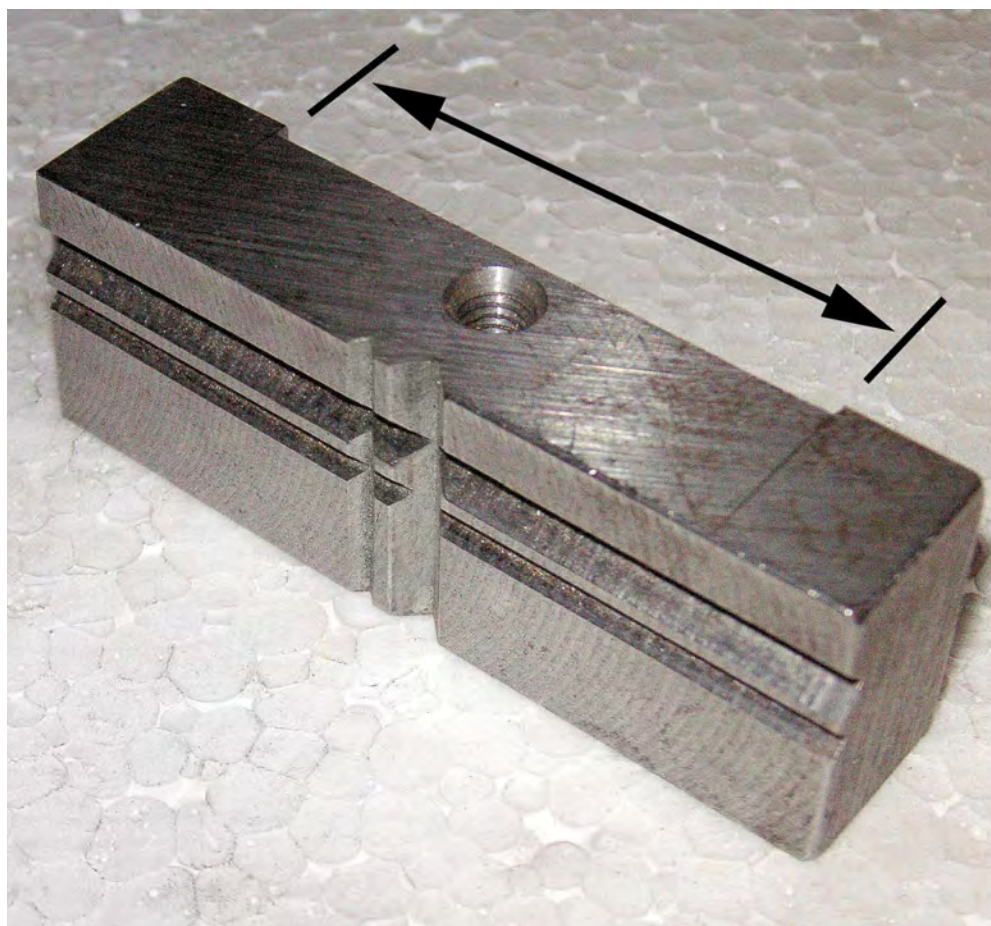
Therefore, I made a removable jaw from a rectangular piece of steel, milling several V-grooves into it, as seen in **Photo 6**. These grooves can hold round stock either horizontally or vertically.

In addition, I made a shallow recess on the back (at black arrows), corresponding to the exact width of the fixed jaw on the milling vice, so that the loose jaw will be perfectly positioned on that jaw in the rotating, tilting vice, see yellow arrows in **Photo 7**. The threaded hole in the loose jaw takes a small spindle that can hold the Unimat's chuck, so this little vice can even perform as a rudimentary rotary table.

Hoping these little tool tips and ideas may help or inspire some of you to make your own accessories, I'll close with **Photo 8**, showing a very useful "workshop gadget" made from a spare, 12-spoke 0-6-0 wheel casting and a battery-powered clock mechanism: a Live Steamer's wall clock! ■

**BELOW
PHOTOGRAPH 8**

A battery-powered workshop clock made from a spare casting.

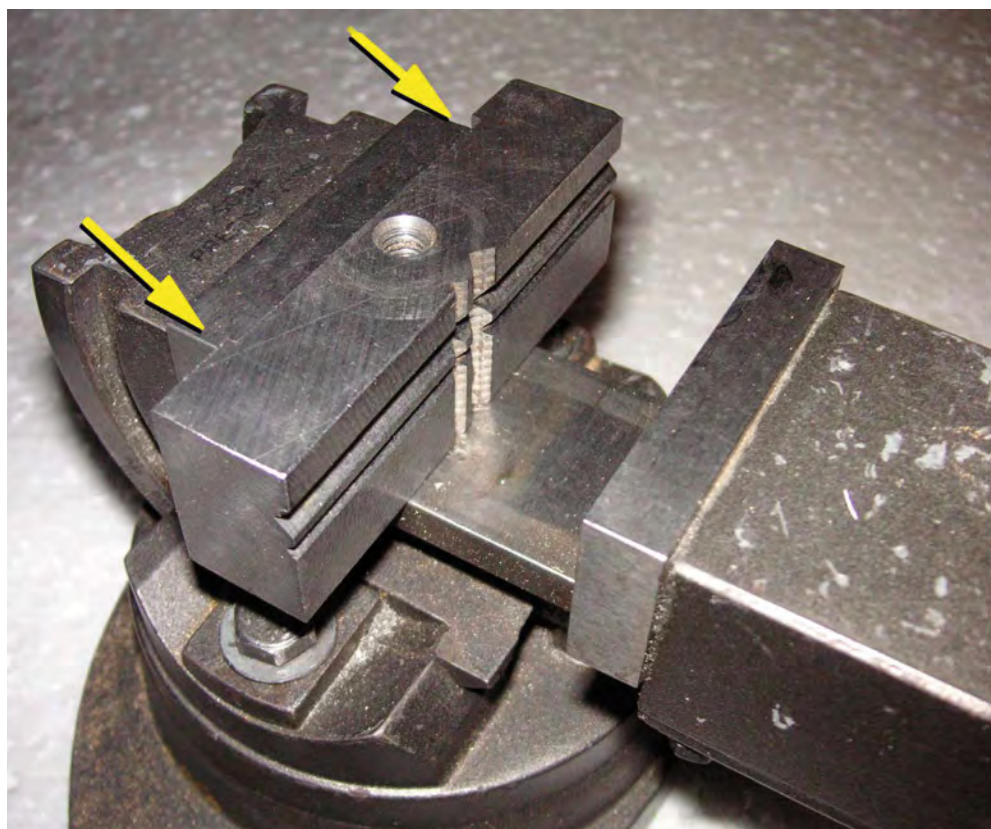


**ABOVE
PHOTOGRAPH 6**

An extra jaw for the milling vice.

**BELOW
PHOTOGRAPH 7**

The loose jaw fits exactly on the fixed jaw in the vice.



Stephenson Trials 2017

— Workington

Tom Jones, Secretary of the West Cumbria Guild of Model Engineers reports on the 2017 trial

BY TOM JONES

The Stephenson Trials are simplified efficiency trials not requiring the use of a dynamometer. The scores for each locomotive are arrived at by the simple formula:

$$\text{Score} = (\text{Distance (yds)} \times \text{Load (lbs)}) / \text{Coal used (ozs)}$$

Whilst the scoring method does not allow for comparison between one year's performance and another (at a different track), it does allow relative rating of performances on the day for that particular track. This year the event was held at West Cumbria Guild of Model Engineer's track at Curwen Hall Park – Workington. The track is raised and only 5" and 3½" therefore this year 7¼" gauge locos could not be accommodated. The track is a 600' oval and has recently been re-laid by two energetic brothers, Mark & Nigel Potter with materials funded by the Town Council and other local area grant funders. We were also fortunate in the last couple of years to be able to lease the building, built by our predecessor club in the 1950's, for a peppercorn rent from Allerdale District Council, as a Clubhouse.

The day began with the 3½" gauge entries. West Cumbria Guild Chairman, Dave Cormack had to drive his Britannia as his Son, who was going to drive, was called out for Lifeboat duty. Dave did some last minute "Underside Maintenance" and managed a good pace coming in 2nd of the 3½" gauge entries and came 6th overall.

Next to run was an unusual French Nord 4-8-0 locomotive finished in brown livery. It was Malcolm Lummas, from Yok CDSME's first time of entering the trials and because of this he won the President's Shield. Joseph Gibbons was the next to run with a GNR Atlantic. Joseph is a relatively young driver but has entered the trials several times and usually does well. This run was no exception winning him the shield for the best performance from a 3½" gauge locomotive. The last 3.5"



ABOVE
Chairman of WCGME Dave Cormack makes last minute adjustments to his fine model Britannia.



RIGHT
Malcolm Lummas of York prepares his French Locomotive.

BELOW
Dave Cormack's son was to enter on his Dad's Britannia but was called away on life boat duty so Dad Dave drove.



**ABOVE**

The 3.5 inch gauge winner was Joseph Gibbons with a GNR Atlantic.

gauge entrant was one of our youngest club Members, Kristian Messenger with a Hudswell-Clarke 0-4-0. He was doubtful whether to enter but with some encouragement from fellow members he made 15.5 laps of the 609' track in the 20mins allowed and had steam to spare throughout.

John Harkness led the 5" gauge entries with the author's British Railways Standard Class 2 to the Don Young Design. John Managed the run well and with a load of 1040lb, over 20 laps and coal usage of 19.75ozs gained 216,788 points which was not beaten in the remaining runs. This made him the overall winner for which he won the Stephenson Cup and 5" gauge trophy for best in that gauge.

Eddie Gibbons, of Tyneside SMEE, driving his very attractive Adams Radial Tank usually does well but suffered steaming problems so was not able to clock up his usual large number of laps with his chosen load of 1000lbs.

Dave Henderson of Tyneside SMEE had a good run with his

BELOW

Eddie Gibbons, who has been principal organiser of the trials for many years entered his Adams Radial Tank.

**ABOVE**

John Harkness came 1st overall driving the Authors BR Standard Class 2.

Polly VI and with a load of 911 lbs and coal used 19.25oz came a worthy 2nd overall with a score of 187,790.

Dave Davies of the home club ran his Sweet Pea and between improvements to his Locomotive and learning what it will do he has done better each time he has entered. This run was no exception when he pulled a load of 1177lb over 14 laps with coal usage of 19.875ozs which placed him 3rd overall.

The last 5" gauge Locomotive to run was Pete Johnston's LMS Jubilee – a very nice looking machine. I thought it would easily cope with his chosen load of 1357lbs but it never really got up to the higher speeds of others so only managed 7¾ laps for it's coal usage of nearly 25 ozs. I think Pete was disappointed – I certainly was for him. I hope this will not put him off entering in future years.

We all had a great day with lunch being laid on/bought in by Gwen and amazingly the rain held off until just after we finished – just what was forecast. ■

BELOW

Dave Henderson of Teeside SMEE came a worthy second with his Polly VI.



**LEFT**

Dave Davies his Sweet Pea with the second heaviest load of the day and came overall 3rd.

BELOW LEFT

Pete Johnston drove his LMS Jubilee.

BELOW

Vice Chairman John Harkness accepts the Stephenson Cup from the Chairman's wife Gwen Cormack.



The Stephenson Memorial Miniature Locomotive Association

62nd trials at Curwen Hall Park, Workington – Saturday 16th September 2017

No.	COMPETITOR	SOCIETY	LOCOMOTIVE	WHEEL ARR'T	GAUGE	LOAD LBS	DISTANCE YDS	COAL OZS	SCORE POINTS	PLACE
1	D. Cormack	WCGME	Brittania	4-6-2	3½	700.3	3654	21.5	119120	6
2	M. Lummas	YorkCDSME	French Nord	4-8-0	3½	1129.8	2130	21.5	111320	7
3	J. Gibbons	TSME	GNR Class C1	4-4-2	3½	717	3947	22.25	127186	5
4	J. Harkness	WCGME	BR Std Cl 2	2-6-0	5	1040.5	4115	19.75	216788	1
5	E. Gibbons	TSME	Adams Radial	4-4-2T	5	999.6	2606	18.125	143706	4
6	D. Henderson	TSME	Poly VI	2-6-0	5	911.3	3967	19.25	187790	2
7	D. Davies	WCGME	Sweet Pea	0-4-2	5	1177.3	2867	19.875	169726	3
8	P. Johnston	WCGME	LMS Jubilee	4-6-0	5	1357.3	1571	24.875	85747	8
9	K. Messenger	WCGME	Hudswell Clarke	0-4-0	3½	145	3150	20.625	22144	9

Score (pts) = Load (lbs) x Distance (yds) / Coal (ozs)

Trophies: Overall Winner – J. Harkness; Best 5" – J. Harkness; Best 3½" – J. Gibbons; Best New Entrant – M. Lummas; 2nd Best Overall; D. Henderson (Trophy not available to award)

Building your first automaton



Dave sets out to entertain and educate his grandchildren with an interesting mechanical toy

WORD AND SKETCHES BY **DAVE ROWE**. PHOTOS BY **ANDY YORK**

As a young man, I didn't want sons, only daughters. Luckily, we had two delightful female offspring. Many years later though, one daughter presented me with twin grandchildren. Boys! Ugh!

But, when I visited them at the age of two, they would insist on me reading the Screwfix catalogue to them and then I would be dragged to that temple of delights – the locked workroom – where they'd ask to be allowed to handle the tools.

When they were four years old, I made them their first automaton. The most important feature of this, and all subsequent models, was an acrylic viewing window. After all, without being able to see the works, they would learn nothing from them.

At five, they were made an automaton plus tool chests containing a set of carpenters tools in each.

At six, another automaton plus a real pillar drill and belt-cum-disc sander.

At eight, they started making their won automata and with the editor's permission, in a later issue, I will be describing an automaton made by a nine year old.

And I was the man who abhorred boys!

MAD MARVIN. THE WORLD'S ONLY RHINO TAMER

This is the first children's automata to be constructed and I cheated as I'd seen one in a Covent Garden shop. It was being sold in kit form at a price which seemed, to this miser, very high for some insubstantial pieces of unpainted wood. OK if an adult handled it very carefully, but in the hands of two energetic four year old boys? I thought not.

Nevertheless, it had potential if it could be made in a beefed-up, larger version and painted colourfully. Don't be deceived. Offer adults and children two versions of something of the same design, one made of softwood and bright painted, the other in beautifully finished hardwoods and you'll find children only want the former, adults only want the later.

Serious engineers may look at the photo and think, "How crude! All held together with screws in screw cups." 13 years have passed since this was built so I don't remember how many times it was unscrewed and re-assembled during its construction. Quite possibly 10 or 12, so screwed construction is vital and even when it was finished, the screws made future repairs simple. I reckoned that by the time they were 8 years old, the recipients of the gift would be able to carry out any necessary maintenance and would bless me for making the task easy for them.

The top, base, gears, cams and circular pedestals are all 6,9 or 12mm birch plywood. I was appalled at the price when I purchased 1.2 by 2.4 metre sheets of it, but it is the king of plywoods and automata are the perfect way of utilising all the little off-cuts from large scale projects.

Construction started by making the two medieval-looking gear wheels. These were cut from 9mm play and fully marked out before being cut from the sheet. It is important that the teeth are accurately spaced. Draughtsmen's compasses or dividers are best but if you only have 'school' compasses, make sure the pencil is very sharp. I marked the circumference at 60mm and the inner ring for teeth at 54mm, and making sure the compasses setting from the later was not disturbed. I placed the point at A (Fig 1)



The gear train might look crude, but it is easy for even those not mechanically minded to understand what is going on.

and marked B and C, moved the point to B and marked D and then from C, marked E, then moved to D and E to put crossing lines at F.

I'm lazy and chose to have 18 'teeth' for as a multiple of 6 it is easy to divide a circle this way (It is also useful when setting out the numerals of a clock). The next step was to multiply the diameter by 0.1745 (Pi divided by the number of spokes = $3.1416/18 = 0.1745$) which gave 9.423 so setting the compasses at 9.4mm and with the point on A, I marked (G) and (G). Moving the point to B, C, D, E and F gave the remaining 10 Gs.

You may think that it would be simpler to just set the compasses or dividers to 9.4mm and work your way around the circle but an error of 0.2mm, repeated 18 times gives a total error of 3.6mm.

With all the markings in place, an automatic centre punch gives a positive start for accurate drilling for the shaft and the nails.

After cutting the ply to roughly circular shape with a bandsaw, I drilled the 6mm shaft-hole and mounted the disc on the lathe by means of a 6mm bolt and wing-nut (Fig 2). Any slipping by the disc when truing up started was immediately controlled as it caused the wing-nut to tighten.

The 50mm belt pulley was made the same way. I had some 16mm X 1.5mm brass nails for the teeth and after they had been hammered in, the heads were cut off with sidecutters.

The eccentric cam for the tamer (30mm X 12mm) was smoothed on the lathe, the central 6mm hole was plugged and a second 6mm hole was drilled 6mm off centre to give a throw of 12mm to the tamer's mechanism.

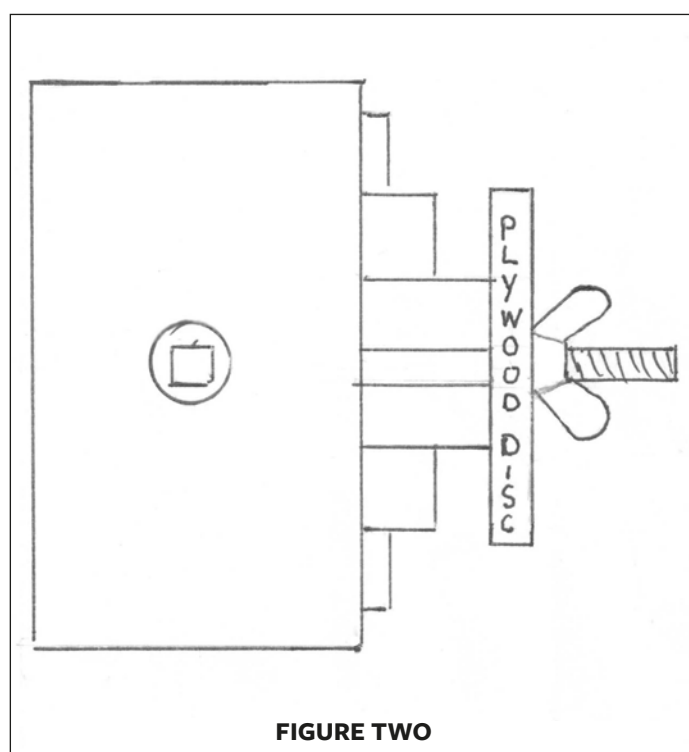
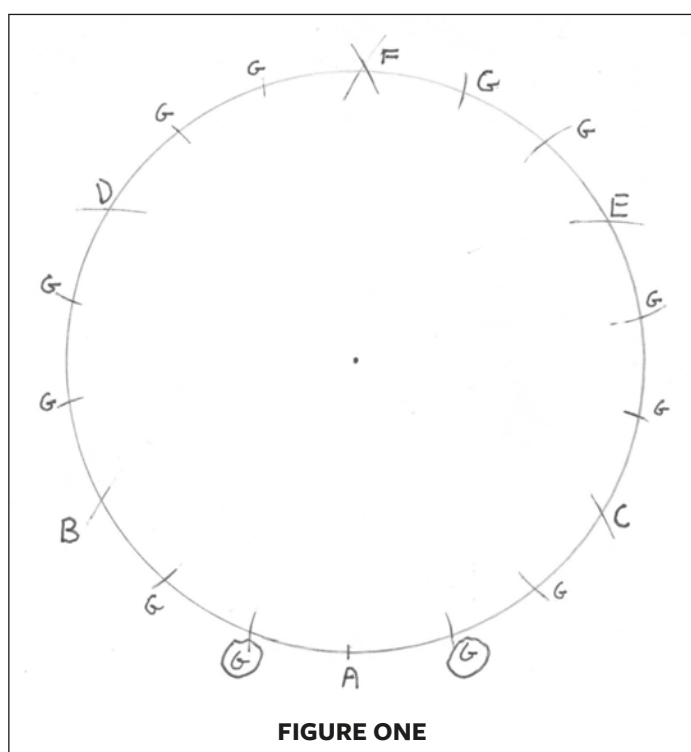




FIGURE THREE



FIGURE FOUR

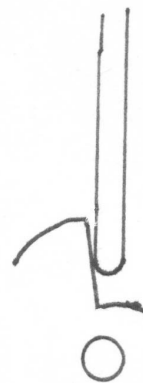


FIGURE FIVE

The snail cam (Fig 3) I sketched on wood until I had a satisfactory shape. The must not have a cam in the form of Fig 4 as the cam follower will slide gently down the slope (Fig 5) instead of falling clear with the all important 'SNAP'.

The shaft was ¼ inch dowel rod and as the gear wheel and trainer's cam were drilled to 6mm they were an extremely tight fit on the shaft, which needed to be hammered through them. The snail cam was drilled with a ¼ inch hole and was anchored to the shaft with a 9mm X 1.7mm wood screw (3/8" Number 1). This allowed precise adjusting of the cam position so that the jaws snapped shut when the tamer's head was only 1mm clear.

The rhino's mouth is lifted via a 110mm length of 3.2mm brazing rod. To ensure a smooth ride on the snail cam an upholstery nail was inserted into the lower end of the rod. These nails have a 10mm domed head and a 1.5mm shank. Whether epoxy glue, solder or friction held it into the hole drilled in the shaft's end, I can no longer recall. A piece of 10mm diameter steel rod, 15mm long with a 3.2mm hole through it gives a weight to ensure the shaft falls smartly.

Smooth movement through the rhino's pedestal is ensured by fitting a length of 6mm brass rod drilled through the 3.3mm.

The animal was cut from a piece of soft wood as in Fig 6 and Fig 7. The tamer's shaft was 2.4mm brazing rod, upholstery nail as

the base but this time with a heavier weight (20mm X 10mm steel) as it has to be able to pull the tamer up from his lowest position.

A 1mm hole through the upper end of the shaft allowed a 25mm length of chain to be attached. The upper gear wheel and the rotating tamer's platform are joined by a 53mm long ¼ inch dowel rod which was drilled through at 2.5mm to take the brass rod. This dowel rod was again and extremely tight fit.

The tamer (Fig 7) was cut from hardwood and his head and neck were turned from 15mm dowel with his nose glued on. I drilled a 0.9mm hole at the base of his spine and inserted a 20mm long piece of 1mm iron wire. Three reasons for using iron wire:

1. It was easy to bend and form a neat 1½ mm ring at the end to accept the last link of the chain.
2. When I set it up, the poor man's nose was rubbing on the rhino's lower jaw, but pliers adjusted it at once.
3. As a safety link. If his body was accidentally forced down, nothing would break as the wire would bend and could be tweaked back in an instant.

Both the rhino's jaw and the man's trunk must be very free moving. The tamer, when in the raised position must not be vertical. The figure should slope forward 20° otherwise it will not lower itself.

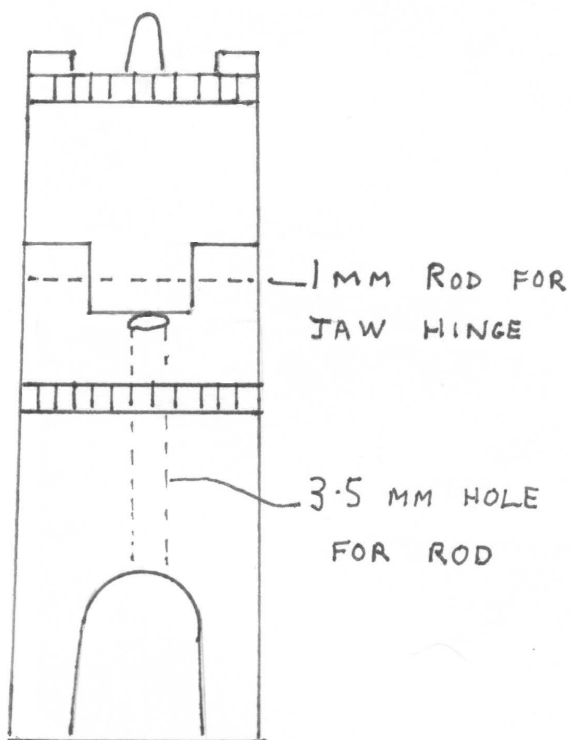


FIGURE SIX

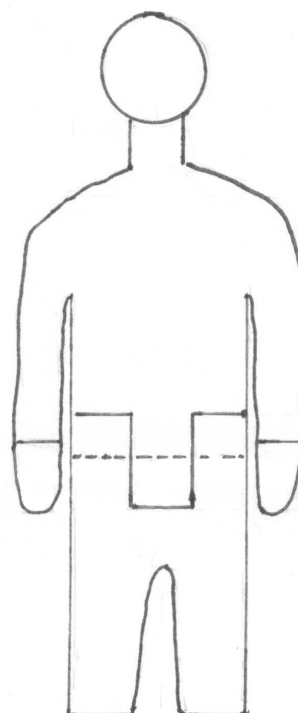


FIGURE SEVEN

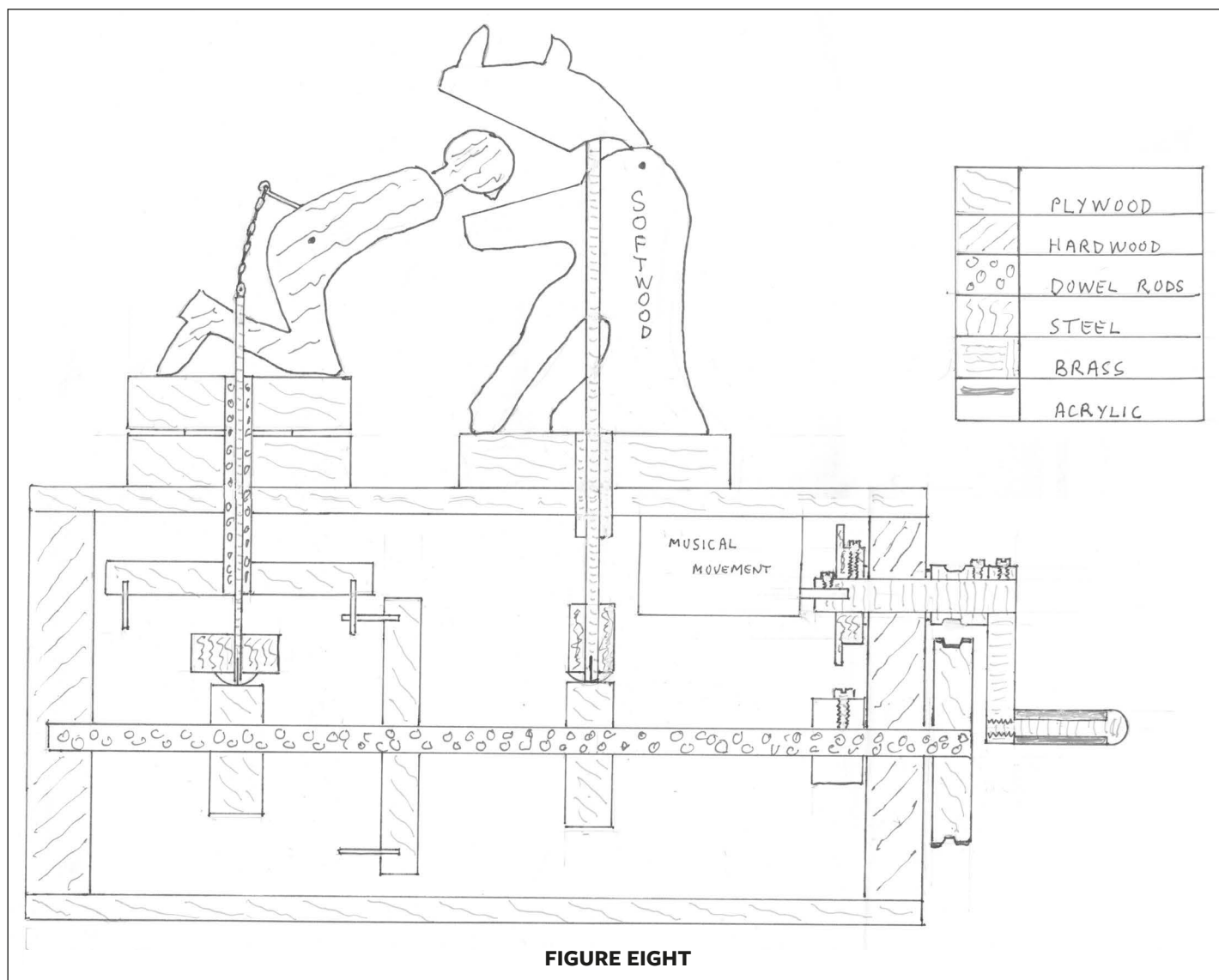


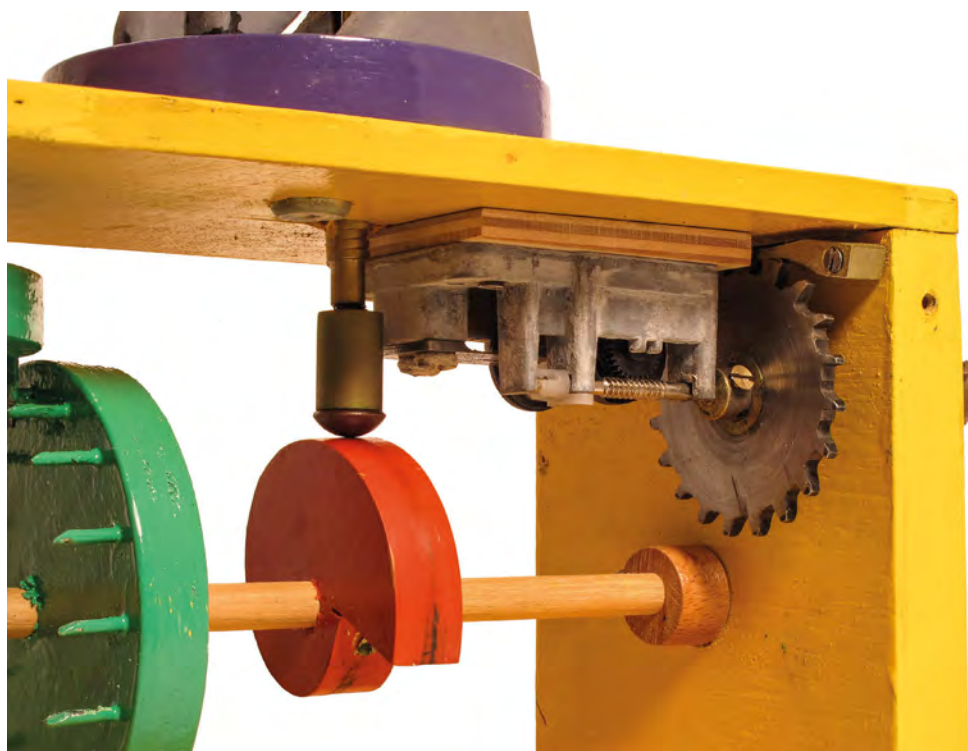
Fig 8 shows the handle, the crank arm and small pulley. The short shaft at 8mm will seem to hefty but I had a sprocket with an 8mm boss. The shaft had a 3mm hole and a grub screw to accept the axle of the musical movement. The handle, when turned at a suitable rate, played the music box appropriately, so a reduction of about 5 times was needed to work the rhino/tamer.

I used a belt drive to permit slip if anyone tried turning it in reverse – snail cams only work one way! Then I thought of adding a musical movement which would have been broken by turning it anti-clockwise so I added the ratchet and pawl, the ratchet being in fact, a 24 toothed sprocket. A musical movement is an optional extra but I always feel that for children it adds a little something special.

After seeing that it all worked correctly I dismantled it completely for painting, then re-assembled it only then adding acrylic windows either side.

BELOW

A close-up of the snail cam that operates the rhino's jaws and musical movement also driven by winding the operating handle.



Model engineering purists may sniff at wooden cases, cams, shafts etc. I can see their point, but this I felt, was the right compromise for strength/speed – heaven help the poor child who dropped an all metal one on his toe.

A belt drive is a quick and easy way to get a 5 to 1 reduction but an ordinary rubber band is not suitable for this purpose. The belt I used came from an assortment which I had collected over the years by rescuing the drive belts from old audio cassette player. These players are a great source of silent-running, reliable motors and always have a good selection of springs inside. eBay is a good source for belts nowadays. I believe they are made of butyl rubber so don't perish with time. GO 4 Products offer a pack of 10 assorted belts and there are many more sources.

Gears would be an alternative to the belt drive and Meccano would be a source. HOBBY'S (www.hobby.uk.com) offer a large range of gears and pulleys. These include bevel gears sold in pairs which would be a quick substitute for the plywood/brass nails version I used, I although I think the latter add and unusual, quirky charm to the model.

Hawkins Bazaar have hand-cranked musical movements which they list as 'Music Makers'. These only play when rotated clockwise but a slip device presents damage when rotated the wrong way. A large selection are also available via eBay from various sellers. Hobby's have hand-cranked movements which will play with either direction of rotation. Their range of tunes is limited, but amongst then is "Who's afraid of the big, bad wolf?" Now that's an idea!

The wolf, wearing a nightcap, in bed, head turned at 90° to Red Riding Hood who kneels by the bedside to inspect its teeth. Bit of back-scene with a picture on the wall. Bedroom window. Acrylic mechanism-viewing window at the rear of the box. Plywood on the front bearing the words, "Granny, what big teeth you have!" Good possibilities there... Hmmm....

I made the rhino tamer when my granddaughter was only just two. She was afraid that decapitation would occur if the she turned the handle, but would sit on her mother's lap as the latter took the risk. The tamer would move his head towards the rhino's mouth and granddaughter would shut her eyes tightly, fearing the worst. SNAP! Would got the jaws and she'd risk a peep to see what had happened – Ah, all was well that time. Oh no! Here he goes again. Quickly! Eyes tightly shut again, SNAP, peep...and so on and so on. Delightful. ■

SEE THIS MODEL OPERATING

A video of Mad Marvin, the World's only rhino tamer, operating, can be seen on the Model Engineering section of www.RMweb.co.uk

Meet the Modeller

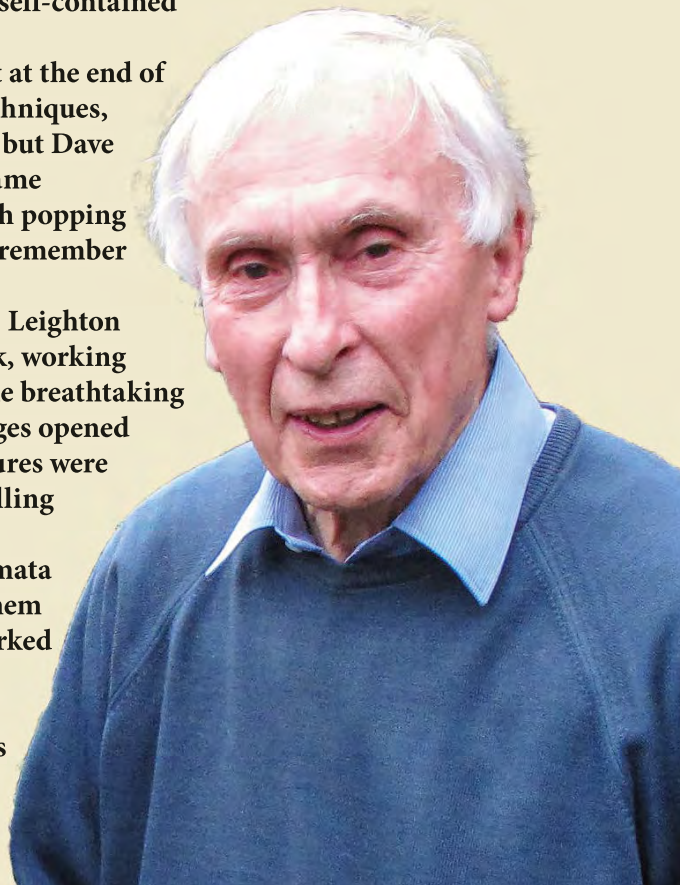
Anyone involved with model railways in the 1970s and 80s will remember Dave's small 4mm scale models featuring detailed scenery and displayed in illuminated, glass front cabinets. The initial trio went under the name of The Milkwood Railway and portrayed three scenes of Welsh narrow gauge lines. These were followed by Axford with trams and trains running through East Devon scenery. All were unusual in being self-contained scenes displayed in illuminated, glass-fronted cabinets.

Even more revolutionary, while Dave and his wife sat at the end of the displays at exhibitions demonstrating modelling techniques, layouts ran themselves. Not only did the trains operate, but Dave had built in extra mechanical devices so he quickly became known as the man whose model included a sweep's brush popping out of a chimney and shaking when the viewer couldn't remember the layout name.

The operating features became ever more important. Leighton Buzzard featured canal boats rising and falling in a lock, working dragline and sand drying plant. This was followed by the breathtaking Exebridge Quay where split-bascule and telescopic bridges opened to allow a dredger to sail through. These and other features were described in his book *Industrial and Mechanised Modelling* (1990, Wild Swan).

For the last few years, Dave has built a series of automata to entertain his grandchildren as well as encouraging them to get involved with engineering. This seems to have worked as one has built a working pulse-jet engine for a school project!

Asked for his philosophy for life, Dave quotes Aldous Huxley, "Creative work, of however humble a kind, is the source of man's most solid, least transitory, happiness."



YOUNG ENGINEERS

BY JOHN ARROWSMITH

This month we have a contribution from a young engineer who is a member at the Mid Cheshire MES and who is progressing into a well respected and useful model engineer. His notes reflect his experience over the last couple of years, and illustrate yet again what I have been saying, that if a club encourages young people they will respond and continue to thrive in model engineering despite all the negative responses that are sadly often the norm these days.

My name is Solomon Johnson and I am a junior member of Mid Cheshire Society of Model Engineers. I have already had an article published in *Engineering in Miniature* 2 years ago so this is a continuation and progress update on what I've been up to over the past couple of years or so and how I keep on enjoying my hobby, meeting new people and learning new skills from some very knowledgeable and experienced people. I'd like to thank everyone for taking the time, explaining things and letting me have a go!

Our track, at the Mid Cheshire Society of Model Engineers, has been growing over the past four and a bit years and now has a ground level dual gauge 7¼" and 5" track as well as a dual gauge 5" and 3½" raised track. Signal Box, Turntable, Steaming Bay and workshop have all been built in this time and work is now progressing on a station canopy. I am one of the many volunteers who has helped to get the site to where it is today and also gets to enjoy the track whilst driving or riding on a range of loco's owned by members and the club. Since my last article I have continued to learn new skills and gain more experience from members and the club has continued to grow with new members and also visiting engines. I have also visited other Model Engineering societies who have always been very welcoming. As the running season comes to a close I'm hoping to be able to help with maintenance/overhaul of some of the club rolling stock in time for next season's running. MCSME also presented me with a



ABOVE
Red Damsel on the steaming bay at Mid Cheshire.



RIGHT
Talking to Frank Cooper at the NRM, during the award presentation.

very special Drivers Bag in January this year with the following plaque (more about that later).

Earlier this year we were fortunate enough to be able to purchase a 7¼" inch gauge Quarry Hunslet steam loco called Red Damsel which was built by a member of the society (Jon Green), in 1991, making it 26 years old but it's been well maintained and looked after and is in excellent condition. This has allowed me to learn more about Steam Loco's and especially the day to day and week to week maintenance that needs to be done to prepare for running and post running. It really is a fantastic loco and I'm really happy that it is still available to run at the club track. Red Damsel is a lovely loco to drive, maintain and enjoy but I have to say it's pretty big and heavy to transport around! This year I've been doing some research into Quarry Hunslet locos and their background, which was transporting heavy slate trains in the quarries of North Wales. Red Damsel has changed over the years and now with a cab roof is known as Elidir and can be seen running on the Llanberis Lake Railway. One railway we still need to visit!

Since April 2016 myself and my Dad have started to volunteer at the Ravenglass and Eskdale railway in Cumbria. This is a part of the country and a railway that I've been visiting since I was about 4 months old although I don't remember that first visit! Over the past 18 months we have been up to the railway on a number of visits either for weekend visits or during family holidays in the Summer and over Christmas. It's a good job my Dad shares the same interest so we can volunteer and work together. The whole team at the Ratty are very friendly and have always made us feel really welcome. The day usually starts by signing on first thing in the morning and then helping to clean and prepare the locos before moving on to other jobs in and around the shed such as emptying ash pits, coaling the locos, stocking the woodpile, filling oil cans etc.

I have also been able to ride with the guard, learning the route, the different responsibilities that the guard has on the route as well as learning the signalling between guard and driver and the various signalling points on the route.



ABOVE
Driving on the
"Ratty".

JUNIOR ENGINEER OF THE YEAR 2016...

Last September I received a letter from the Northern Association of Model Engineers (NAME) telling me that I had been awarded NAME Junior Engineer of the year 2016. This was a complete surprise as I didn't know that I had been entered for the award and I was absolutely thrilled and also surprised to know that I had won the award. It was even more exciting that the award was to be presented at the National

BELOW
Receiving
my drivers
bag for the
Mid Cheshire
Chairman Dai
Griffin.

Railway Museum in York. We went to York for a couple of days in November and we headed to the National Railway Museum on the Saturday. The award ceremony wasn't until 2 o'clock so we decided to have a good look around the Museum as we hadn't been for a couple of years. We were joined by a few members of the family and also a member from MCSME who had travelled over for the day to the award ceremony where I received a trophy and a cheque. ■



CLUB NEWSROUND



BY JOHN ARROWSMITH

This is always the quiet month of the year with very little activity in the club world in terms of operations or major events. Club calendars reflect this but we can all look forward to this year with some excellent exhibitions and rallies already arranged which will no doubt attract your attention when they are publicised. Many clubs have been pushing on with their winter maintenance work while down under in Australia, New Zealand and South Africa they have been enjoying some excellent events with generally good weather. Some advance information for you next month the 17th Large Scale and Garden Railway show will be held at the Fosse over the weekend of the 17th /18th March and much further ahead the Annual "Lionsmeet" will be held at the Broomy Hill track of **Hereford SME** in August. Look out for full details in EIM when they are available. I understand that the **Spalding Model Engineering and Hobby Show** has been cancelled for 2018 and for future years. I don't know the reason for this but no doubt they will emerge in due course. Billed as the world's largest model engineering exhibition the Faszination Modellbau Friedrichshafen attracted over 51,000 visitors over the weekend. Included in the show was an indoor 5" gauge track 5km long. In 2018 the exhibition will take place over the weekend of the 1st/4th November.

At this point ladies and gentlemen I have to inform you that this edition of Club news will be the penultimate note as I am retiring after the March issue of EIM and will no longer be preparing these notes. May I take this opportunity to thank each and every one of you for your wonderful support over the last 10 years or so that I have been involved with EIM, I could not have done it without you all. From this point on can you send your club newsletters and magazines to the main editor Andrew Charman either by post or in pdf format by e mail. The postal address is Warner Group Publications Plc, The Maltings, West Street, Bourne Lincolnshire PE10 9PH and Andrew's e mail address is andrew.charman@warnersgroup.co.uk. Any that are in the pipeline and come to me will of course be passed on.

In the latest copy of the club magazine from the **Guildford MES** the Chairman reflects on 2017 and notes that the proceeds from their Charity Open afternoon will be donated to their neighbours, Disability Challenges, who suffered considerable damage to their premises following a fire. During September the club enjoyed a visit from SMEE members when they had nine locomotives in operation and a very busy day ensued. There was a very interesting meeting in October when two members entertained the club with a presentation called Computing by Steam. A model of a section

BELOW

The superb 7¼" gauge CNR Northern 4-8-4 built by Kevin Laidlaw a member at the Richmond Hill Live Steamers in Canada.





Roger Curtis is a member at the Guildford Society is building a superb example of a "Jones Goods" in 5" gauge.

of a Babbage No. 2 Difference Engine was demonstrated. However, due to a boiler problem the machine was operated by compressed air but this did not detract from a very interesting and informative talk. The Garden Railway Group of the club have been out and about with their portable layout attending a number of shows and exhibitions promoting the club and its facilities. The club's annual 2 day rally and exhibition will be changed to reflect the changes in model engineering. Lower attendances both by visitors and traders has made the committee review how they will proceed in 2018. The biggest change will be to the name of the event which will be known as The Stoke Park Railway Gala weekend and is being planned for the weekend of the 7/8 July 2018. The large exhibition marquee will also probably be reduced in size as well.

Over in East Anglia the **Kings Lynn & District MES** have had a good year considering that they have had to move their complete track and equipment to a new site to accommodate a new road. The new track is working well and members are pleased with the overall finish. A new accommodation cabin has been installed to replace their old container and it sounds as if it is well appointed with double glazing and carpet tiles. Maintenance of the new site area is being handled by the council's contractors who will be cutting all the grass etc. which will help the club enormously.

Members at the **North London Society** enjoyed a very interesting and informative talk by Brian Parker from the **Peterborough Society** about the processes and techniques involved in Powder Coating of metals. There was apparently a little apprehension when Brian introduced the topic and showed that the process needs a 25000, volt electricity supply to generate the electrostatic field necessary for the paint to adhere to the metal.

The **MSRVS** society report that they had a busy season last year with members attending rallies and shows almost every weekend from February until the end of October. During their stint at the Great Dorset Steam Fair the club won another trophy for a 3" scale Baler. This was coupled to a working traction engine and was making straw bales which were then being sold for the Help for Heroes charity and a princely sum of £210.00 was made so well done to them for that effort. Members have also enjoyed a visit to the Flour Mills works of Bill Parker where they were able to inspect a large wheel turning lathe which is one of only two in the country capable of handling 7- 0ft diameter broad gauge wheels. This machine is on loan from the NRM along with a Pendulum Grinding machine which is used for grinding radial valve links.

With the seasons being reversed down under I always have to think which month would be the equivalent in the UK so I think that February would equate to August in Australia and that being so the **Sydney Live Steam Locomotive Society** had a very busy running day in August with over 3000 passengers being carried on one day. The queue to get into the site took about an hour to get in after running began, that must have been some queue. At their Small Gauge Day they celebrated the anniversary of the passing of Lillian Lawrence (LBSC) with an excellent display of locomotives including 3½" gauge 4-8-4 Coronation which they believe had not been to the track since the 1970's. A special LBSC cake cutting ceremony was performed by Peter Glover who had actually met LBSC so that was a special moment. When this was all over a number of classic LBSC designed locomotives took to the track in steam for everyone to enjoy. A sad note for the club was the passing of stalwart member Vic Scicluna who was described as a very special person who would often put other people's needs before his own, he will be sadly missed by all at SLSLS.

At the **Taunton MES** they have finally said good bye to their club track and site at Creech, everything has been removed, it really is an end of an era. However, they are very positive and hope to find a suitable site for their club to rebuild and continue operations. So far they have looked at 20 sites but each was not quite what they needed so the search goes on. Taunton are one of those rare clubs who have two sites and their Vivary Park track has had a good year and continues to operate although there is a bit of a problem with the council imposing parking charges in the area which may adversely affect them. They have three new junior members which they are thrilled about as they are taking a real interest in the club and are getting involved in the activities there. During the year they held a club loco efficiency day which was a most enjoyable day and after some spirited running the eventual winner was Laurie Maycock with his 5" gauge GWR Pannier who was on the track for 18½ laps pulling a load of 1472 lbs at an average speed of 7.4 mph. I bet the sparks were flying there! He was presented with the trophy by Chairman David Hartland. Members also enjoyed a day out at the Didcot Railway Centre home of the Great Western Railway Society. Guided by one of the senior GWS members, the Taunton party were soon engulfed in all things Great Western and to enjoy the familiar sights sounds and smell of a real engine shed. ■

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| <p>2 Brighton & Hove Society Evening talk "Steam up the Kyber" with Laurie Marshall. 19.30pm at West Blatchington Windmill BN3 7LE.</p> <p>2 Vale of Aylesbury MES. Evening talk "The Martin- Baker Aircraft Company" Les Rawlins from 19.30pm.</p> <p>3 Isle of Wight MES. Open Afternoon at Broadfields 13.30pm – 16.00pm.</p> <p>3 West Wilts MES. Club Track Day 10.00am – 16.00pm Whitehorse Country Park.</p> <p>3 Wirral MES. Public running in Royden Park 13.30pm – 15.30pm most Sundays.</p> <p>4 Bournemouth SME. Public running in Littledown Park 11.00am – 15.30pm every Sunday.</p> | <p>4 Fylde SME. Public running at Marsh Mill Railway, Thornton Cleveleys FY5 4AE from 13.00pm.</p> <p>4 Derby SME. Members running at Morley from 10.30am.</p> <p>4 Sale Area MES. Public running in Walton Park from 12.00noon every Sunday.</p> <p>4 Southport MES. Public running at Victoria Park 11.30am – 16.30pm</p> <p>4 Urmston MES. Public running at Abbotsfield Park 10.00am – 16.00pm every Sunday.</p> <p>7 Bradford MES. Evening meeting at Saltaire Methodist Church "The Gresley P2 Locomotive" by the A1 Loco Trust.</p> | <p>7 Chingford & DSME. Members Meeting at St Edmunds Church Hall 19.30pm.</p> <p>7 Leeds SME. Evening Talk the LMS Patriot "The Unknown Warrior" 19.30pm – 21.30pm Eggborough.</p> <p>9 Ickenham & DMES. Evening talk "Trials & Errors" of Early Railways with Colin Reid 20.00pm.</p> <p>9 Hereford SME. Evening talk at Broomy Hill by Harry Paviour "Judging with at Model engineering Shows" 19.30pm.</p> <p>14 Birmingham SME. Film Night with Bob Withers 19.00pm – 21.00pm Illshaw Heath. B94 6DN.</p> <p>14 Harrow & Wembley MES. "Vics World of Stationary Engines" 20.00pm.</p> | <p>14 Vale of Aylesbury MES. Steaming Day 10.30am – 17.00pm at Quainton.</p> <p>15 Colchester SME. Auction Night from 19.30pm.</p> <p>18 Westland & Yeovil DMES. Track Day at Westland Leisure Centre 11.00am – 16.30pm contact Bob Perkins on 07984931993.</p> <p>19 Peterborough SME. Evening talk with Derek Brown "The Theory and Use of Helical Gears" 19.30pm Church Hall.</p> <p>21 Bristol SME. Evening talk with Peter Lamb "Bristol's Electricity History" Begbrook at 19.30pm.</p> <p>28 Birmingham SME. David Fielden's "Spitfire Night" 19.00pm at Illshaw Heath.</p> |
|--|--|---|--|

Details for inclusion in this diary must be received at least EIGHT weeks prior to publication. Please ensure that full information is given, including the full address of where every event is being held. Whilst every possible care is taken in compiling this diary, we cannot accept responsibility for any errors or omissions.

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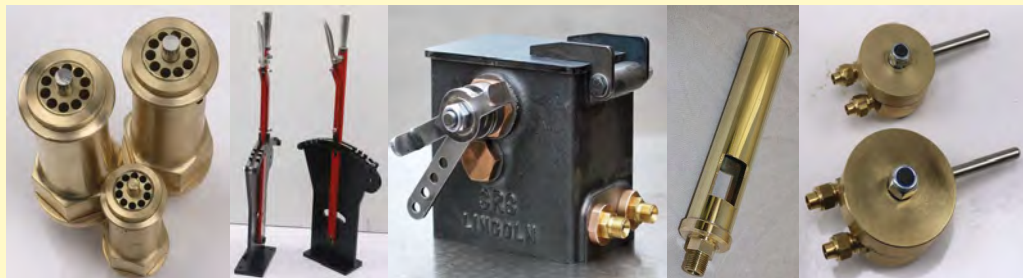
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