

Issue No. 842

March 2022

# The News Sheet

North London Society  
of Model Engineers



V 1

March 2022

You can see this News Sheet in  
colour by visiting our web site at [www.nlsme.co.uk](http://www.nlsme.co.uk)

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### **Front cover photo; -**

Don Young produced a design based on preserved 2ft Gauge Baldwin 2-4-4T No7 which can be seen in the cover picture operating at the Maine Narrow Gauge Museum, Portland, Maine, USA. This month we start a series of articles about the refurbishment of rather unusual 3½ “gauge example of this locomotive generously donated to NLSME.



Your editor is very grateful to all those who have contributed to this edition. Your efforts are much appreciated by all the members of NLSME. This News Sheet would not be possible without you.

Articles long or short on any subject which would be of interest to members of NLSME will be gratefully received for inclusion in future editions. If you don't want to put pen to paper but have a suggestion for a topic which is of interest let the editor know and we will do the rest.



## Chairman's Comments

Les

Following my comments last month, we now have dates for several events at Tyttenhanger this year. See page 35 for details.

The year has started well at HQ with a successful race day hosted by the slot car section. Racers attended from several slot car clubs and £180 was raised for our funds.

At HQ our neighbours in the old British Legion building suffered a catastrophic fire in the early hours of 13<sup>th</sup> February. Six fire engines attended the blaze which started in their marquee and spread into the building. Fortunately, our HQ was not caught up in the conflagration. The community intend to rebuild and, in the meantime, we have started discussions with them as to how we can help by making out meeting room available on days when we do not use it. Their most pressing need is to continue with classes for the younger members of the community, up to 16 at a time. These would be held up to two or three times a week. They fully understand the limits of our meeting room and no shrines or naked flames are to form part of these classes. I expect to be able to give more information in the April news sheet.

At Tyttenhanger inspections of the raised track have been completed and no major rebuild is required this year. Greasing of fishplates and arrangement of the running line continues. Cleaning and painting of the site is in full swing and already it is looking much improved. The GL boys are moving their ballast stockpiles to strategic points around the track. One unresolved issue at present is improvements to the lane. We should be grateful that a few members are thinking of solutions which once adopted will no doubt need support of more members to carry out the work. Fit out of the general access workshop is nearly complete and that is now forcing us to consider what other equipment and plant we need to retain and where to keep it. Well done to all undertaking these works.

The machine shop is now available for use. As mentioned before this is on a controlled basis. Refer to page 10 for details.

Sadly, I have to advise Jack Sanson recently passed away at the good age of 101. Jack was an active member at fetes and fairs and meetings, prior to age creeping up on him, and most generously made substantial contributions to club funds largely covering the costs of the new wash and machine rooms. An obituary will be published in the April edition of the news Sheet.

As the evenings begin to draw out and whether improves, well it must do soon, a few hardy members are already raring to restart running. We can look forward to a good year and I hope to see you at track and HQ.

See you at track or HQ.

## TYTTENHANGER INTERIM RULES

Council have now reviewed the ongoing need for interim rules implemented as a result of the pandemic for HQ and Tyttenhanger.

From the 1<sup>st</sup> March the interim rules as stated in the February news sheet have now been cancelled.

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### Treasurer's Report

By Mike

With Spring fast approaching and the time to re-open the Tyttenhanger site nearly with us. The maintenance work on the Raised Track will have been completed giving the opportunity for somebody to steam up or power up their engine(s) to get the rust off the rails ready for the rest of us.

Like migrating birds, members will reappear to play and enjoy the efforts of the winter workers. Unfortunately, this last winter for various reasons I have been unable to do my share of attending winter working parties, but I hope I will be able to join in again as the year progresses.

It has been good to see Gauge One Section soldiering on throughout the winter months running their trains through thick and thin, fortified by many chocolate biscuits. The many impressive video clips of their efforts and the steam effect you get in the colder weather have been a pleasure to view.

Sadly, I heard a couple of days ago that Jack Sanson, a member since 1977, sadly passed away on the 8th February, just weeks before his 102nd birthday. In the past he was often to be seen at Tyttenhanger and between 2016 to 2020 he was an exceedingly generous benefactor to the Society, for which we give our thanks.

Returning to other matters financial, work has been continuing on fitting out Container No. 6 as our new 'dirty' workshop, with attendant expenditure for materials. It can't be that long before we can start dismantling the old workshop building to make way for 'concrete' progress on the new Raised Track Steaming Bays.

February is the time of the year when we review and set the subscription rates for the forthcoming year. The subscription rates were last increased in April 2017 and given the almost total lack of income apart from subscriptions throughout Covid-19 and the with the rising inflation rate, Council propose subject to approval at the March General Meeting to increase the Annual rate as follows;



- Member £75.00 to £80.00
- Senior Rate from £67.50 to £72.00
- Country rate No change (50-mile radius from Finchley HQ) at £25.00
- Junior / Student age 6 to 18yrs or in full time education, the rate to remain at £1.00 per year of age.

Statistics: we have at present 199 members, 80 Full rate; 81 Senior rate; 26 Country rate; 8 Juniors and 4 Honorary. If accepted the proposed increase will pull in an extra £800 plus assuming all our members renew.

As usual the yellow Subscription Renewal form will be sent out with the April News Sheet and I would appreciate a rapid response from you all. Remember, that in addition to paying by cheque or cash, I will be quite happy to receive your subscriptions by BACS transfer in a one-off payment to our bank account, or by a Standing Order in quarterly or monthly instalments. The yellow renewal form will give you all the details you will need to make your decision on making your payment.

I hope to see many of you at the March General Meeting at HQ, when we will again be holding an auction of tools and materials for disposal for the benefit of the Society and member's families. Bring your wallets full of cash, cheques, BACS, no cards I'm afraid.

Mike

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## NLSME AGM

### Call for Council Member Nominations 2022

Nominations are invited from members of the Society for the elected positions on the Society's Council to be elected at the forth coming AGM on the 6th May 2022.

The elected positions are Chairman, Vice Chairman, Treasurer, Secretary, and five Committee members.

Nominations are to be submitted by e-mail by 7.00pm 15<sup>th</sup> March 2022 to the Secretary, whose e-mail address is listed on the News Sheet back page. Nominations after this date will not be considered.

Submitted e-mail nominations should include the Nominee's name and supporting e-mails from the Proposer and the Seconder, and the position for which election is sought.

In the past nominations from all candidates required a brief statement describing the Nominees interests, reasons for standing and vision for the future of the Society this will be only necessary for any candidate who has not previously served on the Council and wishes to stand for the 2022-2023 Council.

Candidates' nominations and ay new statements will be circulated to all members in the April News Sheet

**Nomination deadline: received by the Secretary by 7.00pm 15<sup>th</sup> March 2022**

The NLSME Council

## Tyttenhanger Machine Shop Access

By Les

The machine shop is now available for members use. As the shop contains equipment bigger than many hobbyists' machinery, and given our track record of failing to look after such items, it was decided that open access to all would not be safe or appropriate. There has been much debate as to how the club manages this asset. Ideally, we would have a machine shop manager but to date no member has appeared willing to take on the role. In absence of this, and to make some progress, it was decided at general meetings, Tyttenhanger and council meetings that several Key Holders would be appointed but these should be drawn from council and Tyttenhanger committee members. Furthermore, key holders should be volunteers for the position. Those who have agreed to be Key Holders are:

Les

Ian

Nigel

Peter

Malcolm

Grahame

Another important decision is that, whilst Club provides the machines, members must provide their own tooling, slot drills, end mills, lathe tools etc. the club does not think it should provide these for two reasons. A) The tooling expense should be borne by the member and B) providing your own tooling imposes on yourselves some thought as to work you intend to do and to bring the right tools to execute it.

The machines are:

Colchester Chipmaster Lathe

Warco Vertical milling machine

Warco Major Mill/Drill

Guillotine

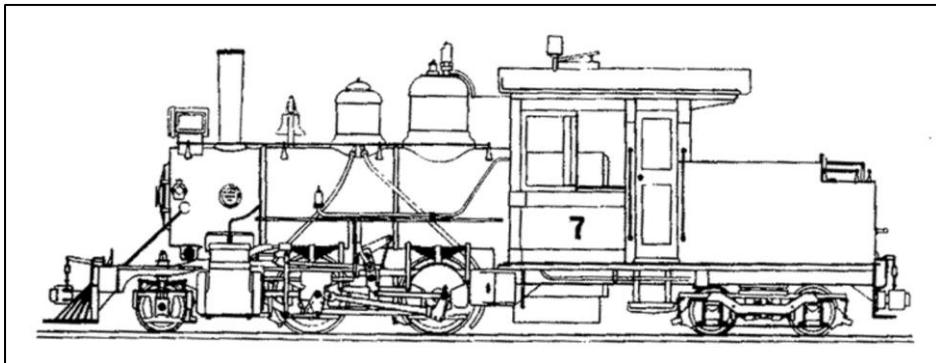
Finally, and to cover H&S issues, you will be asked to fill in an access request form and provide your own protective equipment. The form will be available, via email, from the Key Holders who will use the request to ascertain if you have the knowledge, skill and tooling to undertake the task you request.

This all might seem a bit over the top but we have a duty of care to ensure no one needlessly injures themselves and that club assets are looked after. If you have a better idea for managing access, please share it with us!

## Lucky 7 – The refurbishment

By Keith

### Part 1



This is the story of how a rather unique locomotive came to be languishing in the store at Tyttenhanger and how it is now being overhauled, repaired and refurbished.

This is very large locomotive for 3½" gauge and at first glance has the proportions of a 5" gauge engine. Don Young produced a design is based on the 2ft Gauge Baldwin 2-4-4T resulting in a model with an overall length 60½", driving wheel diameter 5¼" and a cylinder bore of 2". It is undoubtedly a powerful engine.

This locomotive was generously given to the club some years ago by NLSME member Harold. The principal condition attached to the donation being the engine should be repaired, as necessary, into running condition.

The challenge was accepted and John and Mike completed running repairs and with the cab temporarily removed the locomotive steamed successfully in 2017.

That would have been the start of a happy new life as a club locomotive but luck was about to run out when towards



the end of that initial steam test run a loud knocking sound started and the day came to a premature end. The problem could not be easily identified and loco was put into store awaiting a volunteer to investigate and repair whatever was

wrong. And there it stayed for some years safely stored with the problem still to be identified.

Then in 2021 Luck returned to No7 when John took up the challenge. The aim being to return the engine to full operational condition as soon as possible. Over the next few months, we will follow the work providing updates as the refurbishment and repair progresses.

The decision initially taken last year was to strip the engine down as necessary to investigate and repair. The first task was to identify the cause of the failure when it was last steamed. Many theories were expressed as to what needed to be fixed and how it should be done. But there was little alternative than to start dismantling the locomotive. So, it started with removal of the cab and then the valve gear on one side.

This loco is as has been described earlier a narrow-gauge engine and although only 3½ inch gauge has the proportions of a 5-inch model. John was working on the engine at Tyttenhanger but taking bits home as they were removed for repair, refurbishing or just a clean. It was suggested he was stealing the engine bit by bit as the strip down progressed and more and more of the engine was disappearing.

John had a theory as to what was wrong and started to dismantle the valve gear on the right-hand side of the engine in an attempt to find the fault. By doing so it allowed him to remove the rear cover to the cylinder and remove the piston. Fault found! The piston rod came out leaving the piston behind which had become detached from the rod which was still in the cylinder.

So, we had the cause of the failure identified. This was a major milestone as John now knew the engine was a runner if this problem was repaired.

The thread attaching the piston to the rod had partially stripped and allowed the two parts to separate. After taking advice John applied Loctite 603 onto the remaining thread and after giving that plenty of time to cure then pinned the rod to affect the repair.

The cylinder bore showed no signs of damage and was in good condition.

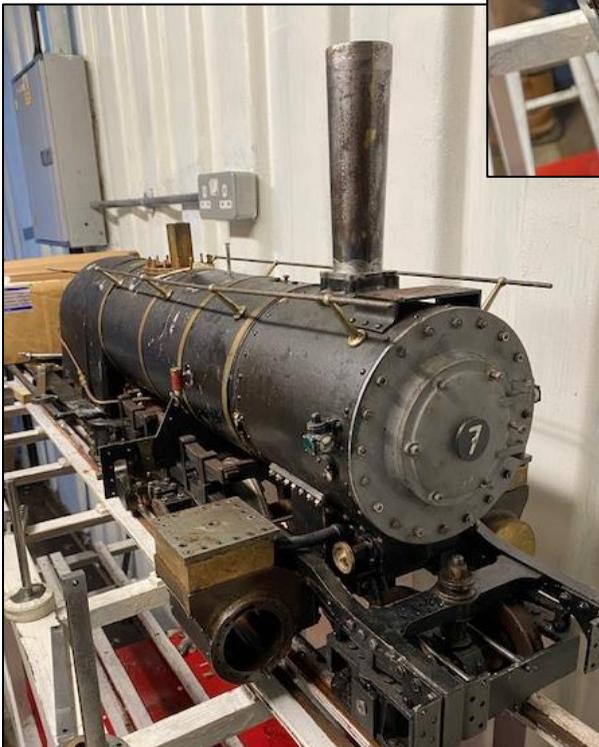
The piston and rod now repaired and the RHS valve gear dismantled John gave all the components a really good clean. The die block in the expansion link was needed a new pin but apart from that all was now good.





With so much of the engine dismantled and now in bits it was considered sensible to continue with the strip down take the opportunity to refurbish or repair as the engine was being rebuilt.

Having done the RHS John decided to strip check and clean the LHS motion which proved to be in good condition and needed no parts replaced. The valve gear was then put to one side.



With the cab removed attention was then focused on what is best described as the tender but in reality, is a water tank and bunker on the rear end of the loco frames.

This had shown signs of leaking during the loco's last run and would definitely need some attention.

Work on the tender and boiler will be described next month.

## A new supply of bags of coal has been delivered to the Colney Heath site.

Anthracite Beans in 25kg bags

The size most used on our locos. £12.00 a bag.

Anthracite Grains in 20kg bags,

Suitable for 3 1/2" gauge or those with very small fire-hole doors. £10.00 a bag.

Welsh Dry Steam Coal in 25kg bags (NOW ALL SOLD)

In larger lumps, which would require breaking up to use.

Contact the Treasurer. Mike Foreman

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## Magazines requiring a new home

By Keith

Over the years like many others, I have accumulated a significant number of back issues of Model engineering magazines. I have spent the winter scanning the numerous interesting articles onto my PC to save space and these magazines now need to find a new home.

They are available in the following bundles to anyone. All I ask is for a suitable donation to club funds.



### Model Engineer

2021 – Complete set

2020 – Complete set

2019 – 75% of set

2018, 17 & 16 – Part sets each year

2015, 2014 and pre1991 – Part sets

1992 to 2011 – Part sets each year

### Engineering in Miniature

2021 – Complete set

2020 – Complete set

2019 – Complete set

2018 – Complete set

2017 & 2016 – Part sets each year

2015 to 2009 – Part sets each year

2011 & 2012 – Part sets each year

Please call Keith

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## Forthcoming General Meetings

In the past our members have been as good if not better than the imported variety of speaker. So, if you know of a member who would be willing to talk for an evening or even half an evening shared with another member; then that would be excellent. Please let me know. The Programme at the moment reads thus: -

### **Friday March 4<sup>th</sup> Auction of Model Engineers wares.**

Unable to complete that model due to lack of a die or tap or some stock metal? The answer is at HQ! That very piece may well be on sale here at HQ for your delectation. Viewing from 7.00pm Auction starts at 7.30pm everyone Welcome especially if you are interested in bidding for that mystery box containing mysterious tooling and stock metals.

### **Friday April 1<sup>st</sup> Work in Progress.**

“What did you do during the Covid Lock Down Daddy”? Many of us must have done some tinkering around with models of steam, electric, petrol, or wind powered but not nuclear. And I dare say some will have even finished a model that has been on the stocks for yonks. And some will have made further plans to complete that model for once and for all but have been held up due to lack of something. Whatever it is please come to Head Quarters and be brave and talk about it. You will be among friends who will be very willing to give advice. Take your pick before they change their minds!

### **Friday May 6<sup>th</sup> The Annual General Meeting.**

This is everyone’s chance to voice and vote for ideas for the future of the NLSME. But don’t all speak at once! It is your chance to vote for new Council members of the Club so it is an extremely important meeting. The Club is a friendly Club, but is one where the future must be faced and plans made for that future. Please attend and help steer the ship; which I hope is not a 200.000-ton super-tanker!

### **Friday June 3<sup>rd</sup>,**

Queens Jubilee Holiday.

Please be reminded that our assigned parking at HQ is to the left of the site alongside and beyond the end of our building.

Any questions regarding the meeting contact, Ian

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## February 2022 General Meeting.

By OMAH Mk II.

### Miniature Traction Engines.

A sizeable group of Members gathered at Head Quarters for the February General Meeting; in fact, the largest number for many full moons. There was a clashing event at the Hindu Complex next door with very courteous stewards/marshals ensuring that Members had convenient places to park their automobiles adjacent to the Club Building while the religious ceremonies proceeded in the neighbouring area undisturbed. Although the Magnolia Tree would feel crowded out by the model Engineers if there were a fire and they assembled beneath its bows it remained as a logical meeting place in case of emergencies.

The meeting was opened by Chairman Les with news of many exhilarating forthcoming events such as the completion of sixty happy years at Tyttenhanger and fifty years running on the new extension and, with next year being forty years since the occupation of the Headquarters in Summers Lane. Also, a Boat Regatta, Reverse running on the Queens Jubilee, under 16 drivers-day, Night Running in September and of course the 3.5" rally. But watch out for further exciting announcements. Les then chatted about the developments he envisaged for HQ. which include the installation of a new disabled persons toilet, the modernisation of the present toilet with a washbasin no less! Concluding with the fitting of a small cooking area where teas and coffee can be brewed hygienically. Help will be needed.

The speaker for the evening had not arrived so the raffle was drawn and tea and biscuits taken, the group's conclusion was that there was an emergency in the tooth hospital like running out of sixpences to put under pillows for the

fairies. Then Jim remembered that he could have a tape of the London bridges crossing event.

The Scribe is old and the tapes turned out to be CDs whatever they were. So, with the CD running, Jim proceeded to narrate the progress on the silver screen of a remarkably speedy



miniature traction engine chasing over the Thames Bridges. The preparations for the event were complicated and needed careful planning with the

Constabulary and the Bridge Authorities. To be stopped straddling a half open Tower Bridge would certainly get some publicity for the NLSME! Jim recounted the crossing of many bridges and taking water (for the engine only!). A thoroughly enjoyable evening surfaced; the only trouble admitted was when Jim's bike broke down and Jim had to acquire a substitute.

All too soon the clock's big hand shewed ten PM so the refreshed gathering gave thanks, gathered up their cars and drove to haunts for further stimulation.

The evening turned out very well after all.

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## Rail cleaning

By Dudley



One of a fleet of 29 Network Rail locomotive hauled rail head treatment trains at Enfield Chase Station.

Warning if you see one coming stand well back as the high-pressure water also soaks the platform edge.

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## Heritage Railway Association (HRA) Secures smoke rule exemption for steam.

With thanks to Steam Railway Magazine No 525

Heritage Railway Association President Lord Faulkner has secured an exemption for heritage steam from the Government's forthcoming Environment Bill.

In the summer, Lord Faulkner of Worcester tabled an amendment to the Bill to specifically exempt heritage coal burners from any wider restrictions on the sale and burning of coal, such as those which now apply to domestic coal consumption in the UK (SR521).

Environment Minister Baroness Bloomfield has confirmed that heritage vehicles including locomotives, traction engines and steamboats are not within the scope of the Environment Bill.

Baroness Bloomfield said: "There will be no direct impact on the heritage steam sector as a result of this Bill. The Government does not intend to bring forward policy that would have a direct impact on it."

Baroness Bloomfield has also confirmed that "the Smoke Control Area Provisions in the 1993 Act, and the amendments to them through the Environment Bill do not and will not apply to smoke from steam trains or road steam vehicles."

The Department for Environment, Food & Rural Affairs has also stated to the HRA: "The Government understands and appreciates the important contribution that the heritage sector, including steam railways, makes to our national culture. The smoke emission measures in the Environment Bill will not apply to emissions from steam trains."

As the result of these Government assurances, Lord Faulkner did not need to press his amendments to a vote.

Lord Faulkner said: "I am reassured that significance of heritage railways has been recognised and, in particular, the need to protect the steam heritage sector from additional environmental restrictions."

He added: "Existing control under Section 43 of the Clean Air Act 1993 requires that practicable measures are taken to minimise emission of dark smoke by railway engines. We will emphasise to our member railways, all of whom already take their environmental responsibilities very seriously, that they must, so far as practicable, minimise dark smoke emissions."

## NLSME AED – New Batteries installed.

By Ian

To those followers who have not heard of the abbreviation AED: it means to us members **Automatic External Defibrillator**.

At some cost to the Society the AED was been installed in the Coach with the kit of First Aid equipment including a Stretcher. The Stretcher is there to extract an associate from the far reaches of the 'new land' if the need required. So far, the AED has not been required to restart a heart but it is there if required.

The battery that powers the AED lasts for four years. Our batteries have lasted for four years and two weeks each; they are not rechargeable and are surprisingly expensive. But not to replace a battery and then find that we need to use it would be unforgivable, so it has been replaced and has been reinstalled.

It behoves every member to know where the AED is stabled and preferably how to use it.

The site at Tyttenhanger is remote and the emergency services may take time to reach the site especially at weekends when vulnerable folk may be enjoying themselves.

So please pay attention at the back there!

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## Bookworm Writes

I received a message the other day from our worthy Editor asking if at some point during my waffling (his words, but I am sure kindly meant), if I couldn't from time to time include something a bit more to do with workshops. Well, it just so happens I did spend some time only recently inside volume 130 seeking and finding sustenance in a series of articles that just might fit the bill.

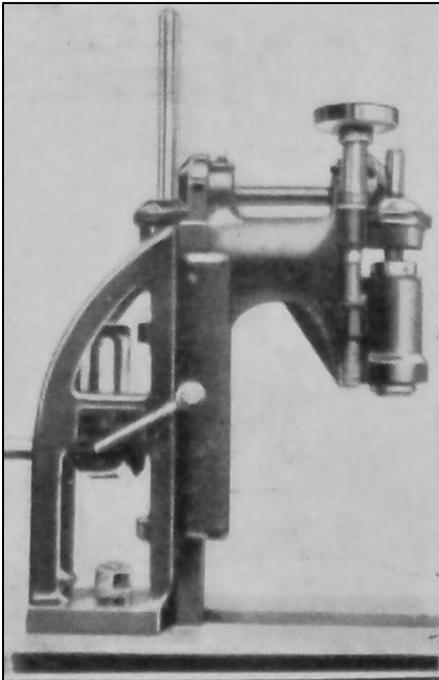
What then could be more relevant to today's home workshop than....no not the lathe, but the mill/drill. *So, what!* You say. Well, there was a time when such a machine was just a twinkle in the eye of the average man in a shed (Heritage precedent claimed on identified sexual stereotype) like my owner...

### **The Westbury Light Milling Machine**

Our story begins in 1964 the year when Edgar T. Westbury - genius of the Model Engineers Workshop, member of the Aylesbury gang (that is *all good fellows together*, not *Ed with the cosh*) whose technical path crossed Frank Whittle's during the time of his jet engine experiments, prototype for the main character in Nevil Shute's book "Trustee From The Tool room" and very long time contributor

to ME magazine and all round *good egg* - produced a constructional series for the building of a 'light' milling machine he had designed and developed.

At the time the average model engineer's workshop compliment of machines would most likely have run to a lathe and a drilling machine and probably a grinder. In 1964 the concept of the 'Mill Drill' didn't exist. Other than 'specialist'



**The ABWOOD  
MILLING ATTACHMENT**

The only attachment that converts your lathe into a milling machine and leaves your boring table clear for work.

Available in three models to suit ALL TYPES OF LATHES from 3" to 7" centres.

Also makers of :—  
Small Power Shaping Machines, Small Power Hack Saw Machines, Machine Vices, from 2½" to 6".

**ABWOOD TOOL AND  
ENGINEERING CO.,  
Abbey Wood, London, S.E.2.**

compact bench top milling machines made for industry such as the Wolf-Jahn or the small Jones or BCA jig borer – financially out of reach for the average model engineer – small vertical milling machines were not available. That said one or two small engineering companies had in the past marketed machines suitable for the bench top but these were invariably horizontal millers which could not be adapted for vertical operation. The only exception was the much older Abwood lathe milling attachment; otherwise, no-one at this point was marketing any dedicated device even to fit to a lathe.

Example ME Feb 25 1932 Ads / ME 1938 April 7 Ads / ME 1949 Dec 15 Ads

E.T. Westbury's design for a light milling machine designed as it was by a model engineer for model engineers, incorporated features that would be useful from the first switch on and at a price and weight that wouldn't *break the bank*.... or the bench. With its modest overall proportions and having a quill - drilled for no.2 Morse taper making it capable of accepting a drill chuck or the Myford range of

collets increasing its usefulness no end – capable of ‘precision’ movement as well as for ‘long travel’, made it suitable for both milling and drilling. Finally, a work holding table with X-Y movement large enough to take components of reasonable size added greatly to its versatility.

Source: ME 1964April 15 p281– Nov 1 p796

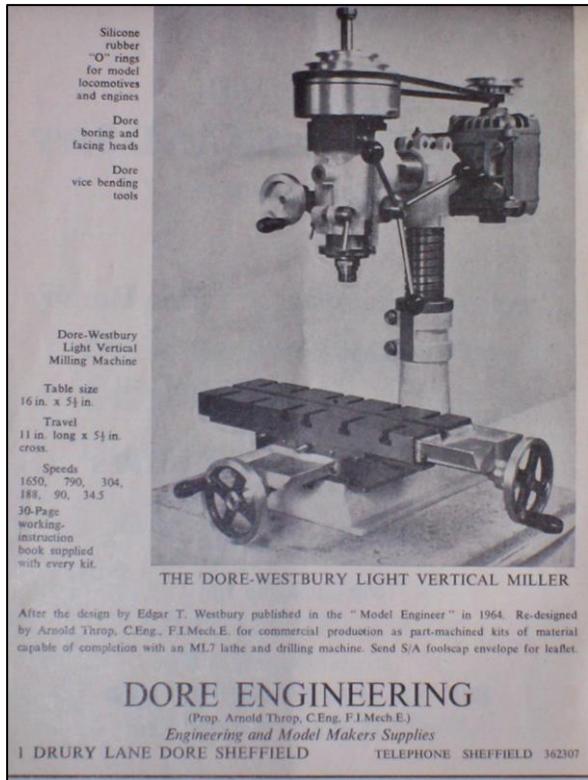
Though designed to be constructed in the average home workshop several of the castings were really too large to be handled there, however E.T. W’s hope had been for the ‘trade’ or jobbing ‘commercial workshops’ to supply these parts ready machined leaving only the smaller items capable of being done by the purchaser to be done at home. It appears that in reality this proved to be a problem as he found it difficult to find any firms willing to produce the machined castings in small enough batches.

### The Dore-Westbury Light Milling Machine

At this point in the story enter one Arnold Throp one of 1960s model engineering *Back-room boys*.

Mechanical engineer by training, Mr Throp (C.Eng. F.I. Mech. E.) was proprietor of ‘Dore Engineering’ of Sheffield who at the time sold castings of various lathe & workshop accessories. With Mr Westbury’s blessing he revisited and updated the design enabling more parts to be made at home and going on to sell castings and materials for the revised machine in kit form; importantly the kits included the larger castings that Dore’s had either machined themselves or had done for them. Breaking the construction down into small batches also meant the cost

of the overall machine could be spread over a period that suited the purchaser’s pocket, and so the “Dore- Westbury” light milling machine came into existence.



Silicone rubber "O" rings for model locomotives and engines

Dore boring and facing heads

Dore vice bending tools

Dore-Westbury Light Vertical Milling Machine

Table size 16 in. x 5 1/2 in.

Travel 11 in. long x 5 1/2 in. cross.

Speeds 1650, 750, 304, 188, 90, 34.5

36 Page working-instruction book supplied with every kit.

THE DORE-WESTBURY LIGHT VERTICAL MILLER

After the design by Edgar T. Westbury published in the "Model Engineer" in 1964. Re-designed by Arnold Throp, C.Eng., F.I.Mech.E. for commercial production as part-machined kits of material capable of completion with an ML7 lathe and drilling machine. Send S/A footcap envelope for leaflet.

**DORE ENGINEERING**  
(Prop. Arnold Throp, C.Eng. F.I.Mech.E.)  
Engineering and Model Makers Supplies  
1 DRURY LANE DORE SHEFFIELD TELEPHONE SHEFFIELD 362307

Source: ME 1969 21 Mar p291/Dore Engineering 1969 sales leaflet

With E.T. W's long association with the SMEE it is perhaps not surprising that one or two prominent members of that Club (including Mr Throp) were devotees of the machine, using it within their own workshops and giving demonstrations at individual Club meetings and at the annual Model Engineer Exhibition right up to recent times.

Example: ME 1987 Aug 21 p207

After his retirement Mr Throp passed the business baton to Model Engineering Services (MES) who added further refinement to the original design including a power feed to the table and continued to supply all the bits needed for still many more years. Sadly, MES has now also passed and it is not known if anyone else has since picked up the baton to take it forward into the second decade of the 21<sup>st</sup> century.

*Yes, but was it any good?* You say. Well in my humble opinion (having travelled widely, both on and through the bookcase) to say the Dore- Westbury Light Milling machine has proved to be a runaway success would be overstating the case, and to say that the original design didn't have a few idiosyncrasies would not be telling the whole story. However, as it was the first of its type for the average model engineer to lay hands upon and in a time before any mass-produced mill/drill milling machines were available, it was a major step forward. Owing to its size and versatility many excellent examples have been made and continue to be used around the world and still exchange hands for respectable sums of money.

I would finally observe that if like my owner, you are drifting effortlessly towards finding your loco too heavy to carry; let it not be forgotten that the exuberance of youth – always looking for a bigger one – will eventually give way to the question *do I still want a big one as I get older?*

As the swarf bin of life fills ever closer to the top, I suspect more than one model engineer has lamented giving up their light weight Dore-Westbury for two hernias worth of cast iron, especially when the need arises to move it somewhere else!

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## G.L.R. News February 2022

By Peter

### Tyttenhanger Light Railway

Well February “fill-dyke black or white” month has certainly lived up to its proverbial gardening name, I am always amazed and delighted to see the G.L.R. crew on cold wet Saturday mornings even more so especially after one of the most damaging storms Eunice to date this year.

I thought I would arrive early so as to survey the possible damage to the track and start to clear the debris. I was well beaten to by at least four members with another four arriving soon after me. Roy had already dragged some larger Fir branches off the track and was checking out the rest of the new land for fallen branches.

Brian by now was getting Alban and the truck out with some coaches for the crew to sit on to help with the clear up. Four loads of debris were taken up to the pond area in quick succession, some of the larger branches were dragged to the bonfire area by the more able and fitter amongst us just in time before it started to rain, tea break was called.



The rain and wind were quite persistent. Whilst at the track an alarm went off on the water works site and following this, we lost all electrical power to our site.

When we left there was no sign of anyone having arrived on the water works site to investigate or restore power so we decided to call it a day.



We have had the use of a mini digger which has been fantastic.

Many thanks to Belinda (Joe's boss) for helping to break up the black stuff that had set hard. This is being used as part of the ballasting project to retain the granite chippings.

We can now fill the last remaining dips and subsidence to the track in the car park a bit easier

Thanks to all those who help it will not be long before hopefully we can play trains again.

As ever in the muck Pete G.L.R. Section Leader.

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## Narrow Gauge Garden Railway

By John

Welcome to this month's ramblings from the world seen through narrow gauge eyes. As I'm writing this there's storm Eunice howling outside so fingers crossed that the inevitable fallen branches at Colney Heath have missed all the important bits! An early inspection will be undertaken.

I've actually just come back in from the garden and said goodbye to 3 fence panels!

There hasn't been much playing trains on the layout with spring and warmer days not quite here yet, I do admire the gauge 1 boys who carry on running regardless come rain or shine, obviously made of sterner stuff! although the cosy bothy is a great asset, talking trains and drinking tea in the warmth...perfect!

I mentioned last month that the layout required some attention and a start has been made, I have replaced a few of the battens which have rotted. You can see from these before and after photos of one that has been done.



Several other tasks need doing before we start running and hopefully will be completed soon.

At the moment Colney Heath is a hive of activity, benches being jet washed, fences painted, leaves cleared, etc in preparation for our 60th anniversary celebration day, I expect that we will be looking as good as we have been for a long time.

My own contribution so far has been smartening up the concrete supports to the platform canopy pillars, again please see the photograph, quite pleased with that!

Finally, here is a picture taken last year to give a little taste of what we have in store just around the corner, running trains on a warm sunny day with flowers in full bloom, can't wait!



## Sundial and Model Engineering

By Julian

*Continued from page 42 of the February 2022*

By now I had a small Chinese Milling machine and could engrave hour lines at home. I would draw out the dimensions of the dial on a piece of paper, tape it to the dial and then use a centre punch to transfer information to the dial plate.



My milling machine was just big enough to mill in all the hour lines in one go. Once again, the dial was mounted up on a teak base and now sits on display in my house. A few years ago, this dial was on display on a club stand at Alexander Palace M.E. Show and it appeared (to my great surprise) in Model Engineer as an item in their show report.

Having put aside some bits of hard wood and sundry used bits of brass I decided to make a Cubical Sun Dial. This has sundials placed on five sides of the cube. Three thick bits of wood were sawn up, glued, screwed and put on the works Bridgport to square them up. The five dial plates were all odd sizes of brass plate and had to be cut to fit the cube avoiding areas with deep gouges and holes.

The cube has to be pivoted to a specific angle depending where you are on the globe. **(Picture 4)**. Once again, I had some old bits of material left over from an optical system and these were carved up and silver soldered where required.

The pivoted mountings are really too massive for the dial, but I had to use what materials that were to hand.

I must point out at this stage none of my dials are works of art or made to win prizes, but built for my pleasure and relaxation.

The dial faces being small, they could fit onto my 6-inch rotary table and could just about be machined in one go on my small milling machine.

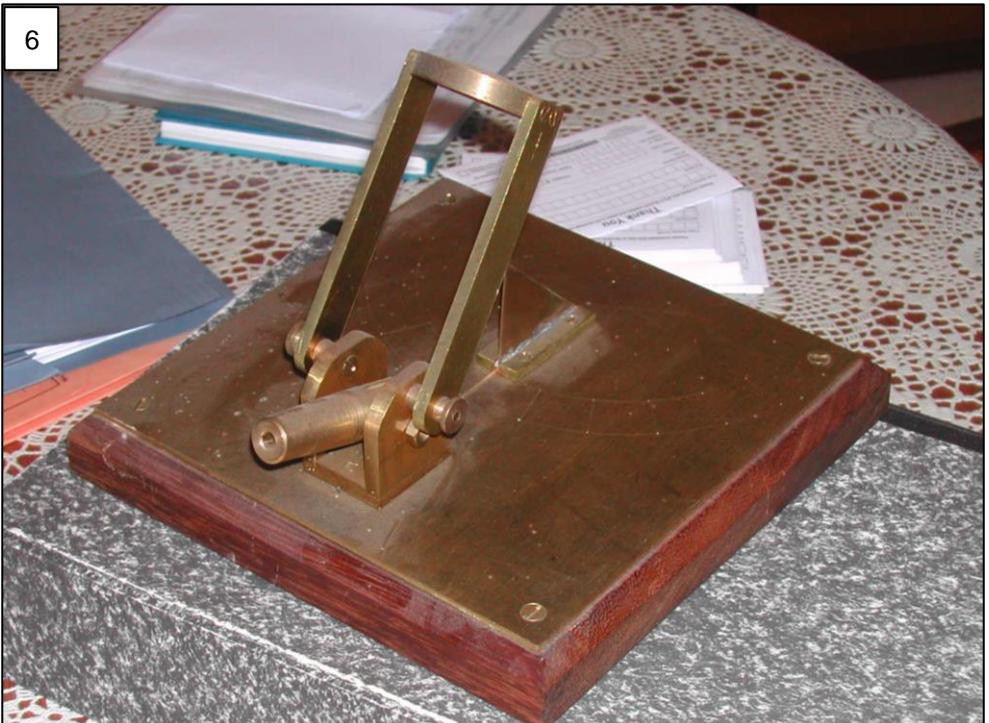




The more astute amongst you will notice that the dial plate on the left-hand side has the wrong orientation. **(Picture 5)** I will have to remake the dials for both the left and right-hand sides!

Another project was a Sundial with a Noon Day cannon. **(Picture 6)** This was made from recovered materials and the dial plate had various odd holes into which I sweated bits of studding and then filed them flat.

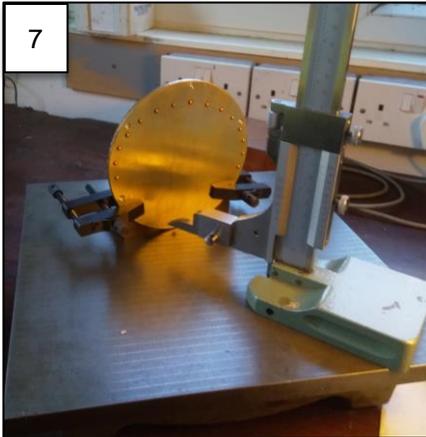
My last dial was constructed during the Covid shut down and was made on a small plate as a construction exercise for a future larger example. This was an



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Analemmatic Dial whose hour lines sit on a parabolic curve and has a provision to show the equation of time.

I firstly worked out all dimensions of the dial drawing it out full size on a bit of graph paper. I then made up a table of X and Y coordinates to work from.



Using my compasses, a height gauge and clamping the material to a right-angle block on my surface plate, I marked out all the critical dimension on the parabolic curve. **(Picture 7)**

I had in stock from my boiler building days some small copper rivets which I decided would be used to mark out the tops of the hour lines. This dial has an added complication that you have to allow the Gnomon to move to allow for the “equation of time”.

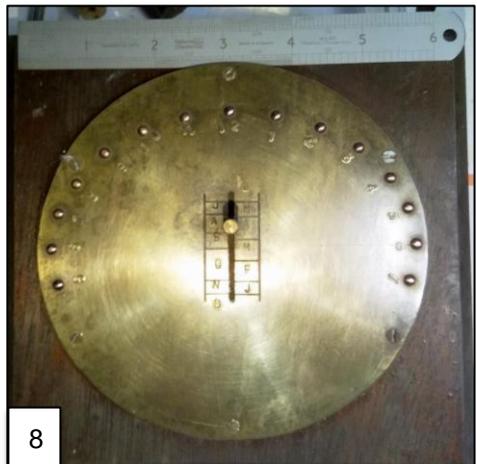
Having drawn out the dimensions for this movement on the dial face, I was able to the monthly movement of the Gnomon.

carefully mill in the lines to indicate the monthly movement of the Gnomon. **(Picture 8)**. If I had a CNC machine or digital readouts on my milling machine life would be so much simpler!

Not being an artist or skilful hand engraver, I had to use letter punches to mark out the hours on the dial face and months on the table that showed the months of the year. The dial has been outside for a year and is now discoloured

Sadly, I cannot put any dials in my south facing front garden as the “local light-fingered mob” would soon relocate them, thus most of my dials are gathering dust in the loft or shed!

I have finally got permission from “Senior Management” to put up a plinth in the back garden. So, if I can get access to a bigger milling machine, I will make my combined sun and moon dial on the bit of brass plate that has been hidden behind my bench for many years.



Though I still struggle to follow some of the maths and theory behind sundials, I always take a reference book with me when I have to sit in a surgery or hospital waiting room as it takes my mind off what is happening around me.

Finally, I was delighted to find that we have our own pond on the NLSME club site. I built my last boat whilst still at school and have always wanted to build another one. I now have started to build a simple Oscillating Engine and hopefully a small propane fired boiler to go with it. I am hoping that my Sievert propane torch will give me enough heat to make the boiler.

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## Visiting Locomotives remembered – Part 7

By Owen

Hunslet built larger narrow-gauge locomotives besides the well-known quarry saddle tanks and in 1906 constructed a 2-6-2T for the Porthmadog, Beddgelert and South Snowdon Railway named Russell.

This later became the Welsh Highland Railway. When that railway closed in 1937 the engine was sold to a Dorset mine and later and famously preserved.

The loco has been modelled in 3 ½" inch gauge by several engineers and one ended up with my friend Russell Pearn of the Reading society. He brought it to Colney Heath for runs in 2007 and 2008 entertaining the HO section and assisting public passenger hauling.





## Construction 4472

By Peter

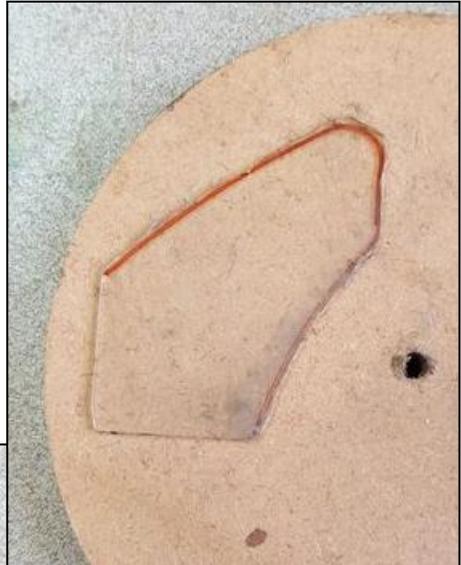
Cab windows part 2

*Continued from page 33 December 2021*

I will now describe the work on the side windshields and spectacle plate windows.

The first picture shows one window after being roughly cut out ready for final sanding to profile using the belt sander. As this involved curved lines, I cut this out using a cutting disk in a Dremel.

With the glass profiled to its final shape, it was then time to fix it to the brass frame.



For this I have used a black RTV silicone which when cured will look very much like the rubber seal on the full size, RTV is used as it will stick with a strong bond to both the brass frame and glass window, it can also withstand very high heat. It can if needed, also be easily cut away with a sharp scalpel. BTW the slides are 3"x 2"x 1 mm thick

Next job was the side windshield protectors, although this is straightforward cutting, I still broke a couple until discovering the best way of doing these, the reason being that they are thin strips of glass and not easy to break off after first using a cutting wheel. I eventually, after ascribing the line for the glass to break, held the glass strip in a small machine vice, lined up the line and tapped the bulk



of the slide to snap off the strip, to my surprise this worked first time for both glass strips. Happy days...

I then needed to take a little out of the corners to clear where the brass pivots protruded into the channel, I also needed to put a small radius on the top corner where the glass meets the upper part of the frame. The picture shows the 4 parts made before getting out Mr Sheen for a little polishing.

The silicone that had squeezed out from between the frame and glass was trimmed off with the scalpel once cured.

And here's one of the protectors now fitted to the cab, those sharp-eyed among you may notice that I've changed the top mounting bracket as I wasn't happy with it being a bit of a halfway measure. I cut off the side taps that had the holes to match Don's mounting holes and sweated the bracket to the cab side using the bolt seen as a locator point.

I hope that you guys will agree that this now looks much more like the full size (see next page).



This picture was taken when 4472 (60103, as she is liveried today) was at York. I think it is pretty close except for the lower bracket that I adapted to fit the holes as drawn by Don. These are a little lower than seen on the full-size loco today.

The remaining job was the spectacle windows. The thin brass frame that faces the front, the opening has been made slightly smaller than the thicker back frame support allowing a

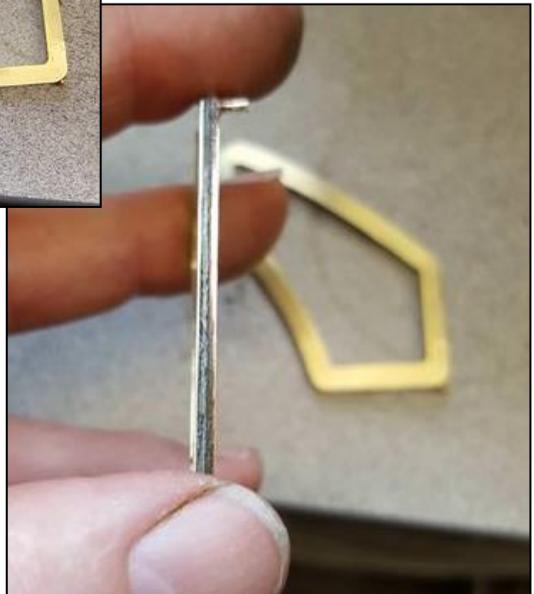


small amount of brass to be seen through the opening in the spectacle plate opening when fitted, approx. 0.75 mm wide band.

This picture shows the finished unit as seen from the front.

I have included this picture to show the glass sandwiched between the two frames, it's a strong sealed unit.

It survived the drop test; well, it wasn't a test per se. I just accidentally dropped one of them, thank God it didn't break, so much work involved in these little things...



Here's both windows fitted, as you can see, they aren't currently sitting central. This is because with the added front frame I need to grind away a little more of the right-angled support that runs inside along the roof line, I'll take care of this later.

I will secure the spectacle windows with the 4 bolts down the outside side sheets forward of the front window. Each frame will have a plate attached to it that is 90 degrees to the window and sits flush behind the side sheet behind the 4 holes. The plate holes are tapped 8BA for the bolts to secure



When the cab is completed and painted, I'll polish all of the brass with some Brasso or Autosole, should stand out and look nice against the fresh paintwork.

In the next instalment I'll make a start on the side windows.

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And finally

## Railway Rhymes

By C L Graves

When books are powerless to beguile  
 And papers only stir my bile,  
 For solace and relief, I flee  
 To Bradshaw or the ABC  
 And find the best of recreations  
 In studying the names and stations.

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## Dates for your 2022 Diary

<b>March</b>	
Tue 1 <sup>st</sup> Mar	Council meeting 14.30 at HQ (See note below)
Every Sunday	Working Party 9.00 – 12.30 Colney Heath
Fri 4 <sup>th</sup> Mar	Auction - Viewing from 7.00pm Auction starts at 7.30pm everyone Welcome
Sun 27 <sup>th</sup> Mar	F&F at Oaklands open day
Every Sunday	Working Party 9.00 – 12.30 Colney Heath
Ground Level Rly Working party at Colney Heath every Thursday & Saturday	
<b>April</b>	
Tue 5 <sup>th</sup> Apr	Council meeting 14.30 at HQ (See note below)
Sat 23 <sup>rd</sup> Apr	F&F at Broxbourne Grunday Park
Fri 29 <sup>th</sup> Apr	F&F at Baldock Beer Festival
Sat 30 <sup>th</sup> Apr	F&F at Baldock Beer Festival
Every Sunday	Working Party 9.00 – 12.30 Colney Heath
Ground Level Rly Working party at Colney Heath every Thursday & Saturday	

A Non-council member, representing a section or committee, can, on request to the Secretary, attend the council meetings as an observer or to submit proposals as set out in the club's constitution. If attendance is agreed then the secretary will advise the member concerned.