

Maidstone Model Engineering Society

President:
JOS. N. LIVERSAGE
C. Eng., M. I. Mech. E.

NEWSLETTER '77

SPRING EDITION

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Our thanks to the many Societies from whom we have received newsletters. They are greatly appreciated.

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Copy for the Summer edition must be in by :-

JUNE 5th. LATEST.

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EDITORIAL

This year the editorial chair has again changed hands. For the information of those people who were not at the A.G.M. the production of the newsletter will now be shared between my brother Graham and myself. However, as Graham is doing all the donkey work, it has fallen to me to write the editorial.

For the first time, as far as I can remember, we will be running for charity this season. On May 15th. the beneficiaries will be the Cheshire Homes, one of which is situated in Mote Park, and on Tuesday 7th. June we hope to contribute to the Silver Jubilee Fund for young people. Please note that we will not be running three days in the Park as a visit to Chingford is arranged for Sunday the 5th.

We have now completed our programme of winter evening meetings. In January the annual "bits and pieces" evening was enlivened by a sale of members surplus "odds and ends". Ken Linkins made an admirable auctioneer, and thanks must go to all those members who presented items, thus boosting club funds. Towards the end of March Mr. Lawrence, that well known contributor to the "Model Engineer" came along and entertained us with an evening of his slides and chats. The show was divided into two parts, the first describing the construction of the Bournemouth track, and the second the 1973 IMLEC in which Fred Laroche and Ray Milliken participated. Thanks very much Lawrie.

May I take this opportunity to ask for articles, because the reserve stock is very low and insufficient for the summer edition. Copy for this should be in by JUNE 5th, or earlier if possible.

RICHARD LINKINS

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CHAIRMAN'S MATTER SPOT

Our 1977 season is now well underway. As we are hoping to complete the repairs on the track at Mote Park by Easter, there is still quite a lot of work yet to finish. Any help members can give would be greatly appreciated, especially as there are only a few Sundays left before Easter.

Mr. Wallis was taken to hospital last week after a heart attack, but I'm pleased to be able to report that he is now on the way to a slow recovery. I know that you all wish him a return to full health.

At the A.G.M. I told you of the loss of our first 'life-member' Mr. T.S. Longley, a true Model Engineer, 'Sid' to all who knew him. His transport, (car and trailer), workshop and hand tools were invaluable in the post war years in building our first track at Mote Park. He also helped raise a great deal of money to pay off the track by running his $3\frac{1}{2}$ " engine at fairs and fetes. Around that time there were many young members who were grateful to 'Sid' for the help he gave to them by spending many evenings 'Up the ladder' in his workshop. He was on the surface, a very blunt man, but anyone who watched his hands soon found different. These hands (fingers of which were like mishapen bananas) fashioned the most intricate piece of engineering with the touch of a master. We shall miss him.

We have also lost one of the Society's Vice-Presidents this month, Major W.T. Pitt for the last 20 years as asst. engineer at Turkey Mill and when it closed on the 1st. June 1976; a complete way of life passed (300 years).

(CONT. OVER)

It was nice to see so many of my old colleagues from the 'Mill' attending on the 1st. March at St. Peter and St. Paul's Charing when our old 'Boss' was laid to rest. Major Pitt has helped the Society over many years, and he was one of the worlds 'Gentlemen'.

I hope to be able to report happier news in our next newsletter. Wishing you the best for the season.

Thanks for reading.

A.H.W. Payne (Jack) Chairman 11th. March 1977.

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FORTHCOMING EVENTS

April 22nd. Open day Southampton.

May 7/8th. Jubilee rally Ascot.

" 15th. Brighton and Hove visit Mote Park.

" 21st. Southern Federation Rally at Blenheim Palace. A coach trip is being arranged for this day and anybody who is interested will find all the details available in the clubhouse.

" 28th. Beechurst visit Mote Park.

June 5th. M.M.E.S. visit Chingford.

" 19th. North London open day.

" 25th. M.M.E.S. visit Guildford (to be confirmed).

July 10th. Brighton open day.

" 16/17th. Guildford Traction Engine Rally.

" 30th. M.M.E.S. visit Tonbridge (to be confirmed).

August 27th. M.M.E.S. visit North London (to be confirmed).

September 4th. Southampton visit Mote Park.

" 11th. Open day North London.

" 17th. Romney Marsh visit Mote Park.

" 24th. Eltham visit Mote Park.

Please watch the noticeboard for further developments.

SECRETARY'S NOTES

May I begin with an apology on behalf of the Committee and myself for the late arrival or more unfortunately the non-arrival of the Winter Newsletter. I know it is most annoying to learn of an event six weeks later but I can assure members this was only a temporary lapse.

The Boxing Day run was attended by Twenty-Six members and the roast turkey dinner at the clubhouse was as usual a great success. The largest feat of engineering being the preparation of such an elaborate meal for so many people.

The Annual General Meeting this year was held at the Mountain Hotel which has been re-styled and re-equipped and was most comfortable and conducive to a constructive meeting. We do not in Maidstone Model Engineering Society have a Constitution which determines the length of time a person may serve in any particular office, this is left to the membership as a whole. Each year everyone is elected to office and if there are more nominees than positions (which is often) then the membership elects whoever they prefer. This system does not preclude the retention in office of someone who is particularly able in their field providing the membership think so. Conversely the membership can vote someone out of office after one year if they so choose which seems a fair and democratic system to us and is not in any way intended to be critical of any other Society's rules.

Two new faces appear on this year's Committee and also a new Press Officer. Reg Holdstock, that prolific builder of freelance loco's that inspire so many of us with their exactitude and immaculate appearance will I am sure be a great asset to the administration.

Richard Linkins the 'Enquire Within' of railways and loco's will also bring a measure of cool headedness which will be much appreciated (Richard takes his B.Sc. exams in July for which we wish him good luck).

Richard's younger brother also joins the administration as Press Officer, a difficult and time consuming job, but one that is important to the Society in so many ways. Graham is another chip off the old block and will doubtless make a success of the task.

I have also got a new job as Chairman of the Southern Federation. That august body which brings such favourable insurance rates for third party, models etc. The Federation also holds rallies at other people's railway tracks and gives prizes donated by companies and all sorts of similarly ingenious enterprises. It also makes equipment available at a discount, and does a lot of hard work for member societies which will continue during my reign.

Members who attended the A.G.M. will know from their balance sheet that some hundreds of pounds have been spent on track maintenance this year. All these expenses are itemised in the Minutes of Committee Meetings held October to February and are permanently available on the notice board.

This track work is now (March 10th.) nearing completion and is the culmination of a lot of effort on the part of many more members than anticipated. Even the guard rail is painted for the Queen's Jubilee Year.

The new system incorporating the galvanised sleeper/chair fixing and lead super-elevation wedges has brought a uniformity, strength and durability not previously enjoyed on miniature railways.

A record number of visitors from other societies are expected this year and negotiations are in hand for Maidstone Model Engineering Society to visit Witney/Oxford, Chingford, North London, Guildford and Tonbridge in addition to the many kind offers to attend open days, exhibitions etc. at other societies.

(Contd. Over)

Such is a brief outline of events happening or about to happen concerning M.M.E.S. at present. A detailed calendar being displayed in the clubhouse.

Thank you for re-electing me as Hon. Secretary and I wish members and the Society success during 1977.

Ray Milliken

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ALGEBRA AND THIS AND THAT.

This is the result of a chat with my telephonic conversationalist who informed me of the changes in the Editorship of the Newsletter, so in order to assist with their first issue I thought that the least I could do was to show 'willing' and if possible fill up a page or two.

Not wishing to inflict on readers more M.E.-in particular locomotives- what better than tackle something really 'way out'; Mr. Rix's Christmas problem and his later solution? At any rate it will be different.

When the problem was first given I got down to writing the relevant equations whilst having my 'eleven's' and later had a word with Mr. R. and he mentioned "complete the square", as it entailed the solution of a (don't be frightened) quadratic equation, that is, an equation containing an unknown of what is termed the second degree, ie X^2 and are usually of the form $ax^2+bx+c=0$ where a, b, and c are constants, just ordinary numbers.

There are four different ways of solving these equations;

1. By factors.
2. By completing the square.
3. By using a formula.
4. By plotting a graph.

Unfortunately I have never been much use at the first two, I seemed to have a mental blockage here and even in my student days I could never get the knack of spotting the required answers. In any case when you get away from simple whole numbers you are certainly in difficulties, so I concentrated on the last two methods, 3 and 4, as being easily applicable to any equation. Incidentally No. 4 is the only method of quickly solving a cubic or higher equation, that is those containing x^3 or x^4 etc.

Actually I cannot follow Mr. R's 'completing the square', maybe there is a piece of working that has been omitted, but anyway it works out alright. Its like a lot of things in Algebra and Mathematics, simply a trick which makes things easy when you know how, and if you don't follow the reasoning this doesn't matter.

You have probably heard of the Calculus, differential and integral, invented by that chappie, who according to legend had trouble with an apple falling on his head, well these capers are in many ways solved by what can be termed as tricks. Take an equation say $y=x^2$, and differentiate, $\frac{dy}{dx}=2x$, or again with $y=x^3$, $\frac{dy}{dx}=3x^2$.

All we have done is to bring the small figure to the top and right of the x, increase its size and bring it to the front, and at the same time reduce the power by one. Easy! the reason behind this is a bit involved but we need not bother about that. Actually $\frac{dy}{dx}$ is referred to as dee y, by dee x and not over dee x as appearance would suggest. Actually all it is is the slope of the line of the graph of the equation. Thus at say $x=3$ the slope of the graph at that point is inclined at $3x^2$ in 1.

(Cont. Over)

I shall be coming to the solution of that Xmas problem in a moment, but in case you have got a bit bored with the proceedings so far turn to the next article, if its written by Fred it will be more interesting.

Now for it:- First of all we will substitute letters for the different quantities, thus; C for the change.

B for the total amount of the bill.

Then we are given that:- As C is to B so is B to £5 which can be written as $C:B::B:5$ making $5C = B^2$.

Now here we have two unknowns so that as it stands it cannot be solved. We need another equation, which we are given, that the change plus the bill must equal £5, written as $C + B = £5$. THEREFORE; $B = 5 - C$

- We have
1. $5C = B^2$.
 2. $C + B = 5$.

There are two ways of solving this, to give it its 'posh' name is a simultaneous quadratic equation but we will take the simplest way, which is by substituting the value of B from equation 2 in equation 1.

$$5C = (5 - C)^2$$

$$5C = 25 - 10C + C^2$$

$$\text{or } C^2 - 15C + 25 = 0$$

(Talking about simultaneous equations, the worst case I came up against was a series with about 40 unknowns and of course 40 equations. These things crop up quite frequently in Bridge and other structures and can be very tedious.

In this case the ordinary 10" slide rule was hopeless, and so was the Fuller Rule this consisting of two rotating drums, one inside the other and giving scales of about 10 feet long. Finally my Boss borrowed a Brunsviga calculating machine (Austrian), a mechanical contrivance which with some hard labour did the job.

This instrument would multiply a 12 figure number by a 12 figure and come up with an answer in 24 figures. The main difficulty being in transcribing figures from the machine on to paper. Hundreds of them.)

The formula mentioned (3) is

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Fitting in our letters and figures and watching the signs we get:

$$C = \frac{-(-15) \pm \sqrt{15^2 - 4 \times 1 \times 25}}{2}$$

$$= \frac{15 \pm \sqrt{225 - 100}}{2}$$

$$= \frac{15 \pm \sqrt{125}}{2}$$

$$= \frac{15 \pm \sqrt{11.2}}{2}$$

which can be either $c = \frac{26.2}{2}$

which is nonsense £13.10

or $c = \frac{3.8}{2} = £1.90$

There are always two different answers to a quadratic equation but one will generally, like this one, be seen to be wrong so we are left with the other result; then the Change was £1.90

and the Bill £5 less £1.90 being £3.10.

(Cont. Over)

This is a little different to Mr. R's solution but as he states in the original problem "to the nearest" penny we are within the limits specified.

Now that I have written that little lot I'm not altogether happy about the whole thing as I am afraid that it will have only a very limited appeal, if any at all, but if it stirs up some correspondence - letters to the editor - it will have served its purpose.

In my view the correspondence columns of either a magazine or daily paper are always of particular interest and so far as I am concerned are always read the first. If anyone feels like writing in and telling me what a load of rubbish this has been, that will please me as I shall then know that someone has read it and taken the trouble to write to the editor. Whatever is said I shall not care one $\sqrt{-1}$ Iota provided that it is not submitted that I am Non Compus Mentis.

JOS. N. LIVESAGE.

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A SIMPLE ATTACHMENT FOR CURVED FACING.

While engaged on the production of a set of buffer heads (one of my last jobs prior to dismantling the workshop for yet another move) I began to ponder over the various methods one could adopt for turning the curved faces. A form tool? rather heavy going if not impossible for an ageing Myford. The alternative ways, hand turning, several cross cuts with the top slide at different settings then finishing with a file seemed rather laborious and require a template to work to. An hydraulic copying attachment? a little expensive for four buffers and a smokebox door but why not a simple and quickly fitted mechanical one with master forms as easily made as templates or form tools.

After half an hour of head scratching and offering up of odd pieces of metal I settled for the arrangement shown in the sketch.

Arm (a) a 6" length of 1" X 1/2" bar has two 3/8" pegs (b) press fitted to one end which locate in a tee slot on the cross slide. At the opposite end and below it a 3/4" ballrace (c) is attached by means of a stub axle pressed in the ballrace being secured with a spot of Loctite. The arm is held to the cross slide by a 3/8 bolt borrowed from the vertical slide through hole (d).

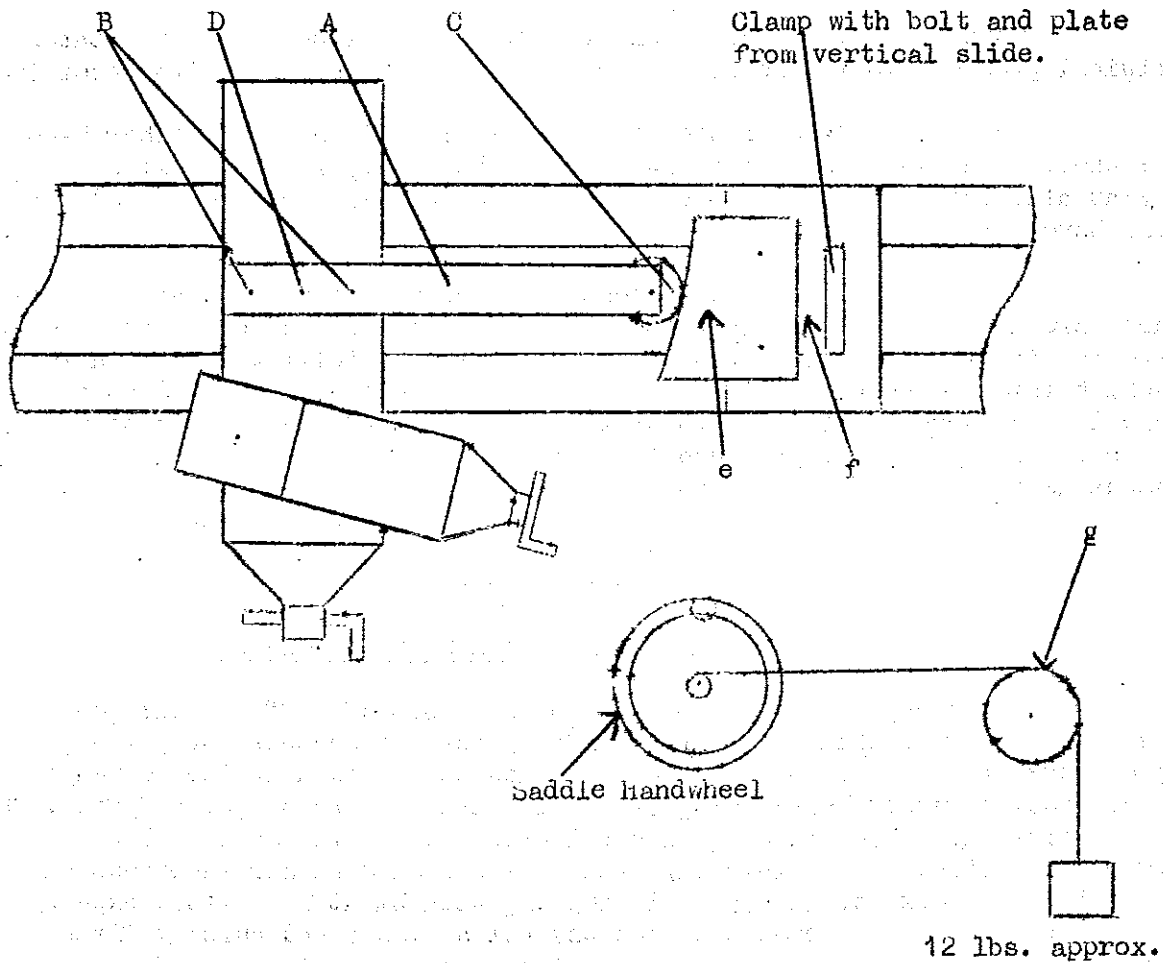
The master forms, (e) cut from 1/8" B.D.M.S. is fastened to baseplate (f) by two ZBA screws. The baseplate a piece of 2" X 1/2" is held in place on the lathe bed with the clamp plate and bolt from the fixed steady.

A weight of about twelve pounds suspended by a length of nylon fishing line passed over a free running pulley (g) and wound in a clockwise direction around the hub of the saddle handwheel serves to keep the follower in contact with the form.

If more than one component has to be produced the machining sequence should be such that the individual pieces are chucked one after the other as it is difficult to reset the master form in exactly the same place. The tool should be fed towards the centre of the work if convex or from the centre outwards if concave in other words the weight should be falling as the cut proceeds, the cut is obviously put on with the top slide.

The pulley (g) is in my case actually part of another labour saving device for use on the bandsaw but that's another story.

(Drawing Over).



Brian Mace.
Minster, Sheppey.

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FOR SALE.

1 Set of drawings and frame steel for Boxhill as described by Martin Evans. Price £4. See R.J. Linkins.

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EVENING OUT.

On Tuesday April 26th. at the Granada 3 cinema in Maidstone there is a film about the Golden Age of Steam. This is an archive of films which includes one about the 100th. Anniversary of steam in 1925. Tickets are £1 each and are only available in advance.

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STOP PRESS.

On August 20th. (Sat.) Welling will be visiting Mote Park.