MAIDSTONE MODEL ENGINEERING SOCIETY

NEWSLETTER

SPRING-SUMMER 2008

MMES FAB 55 AT THE 2008 SUNDAY LUNCH

Cover Picture: Arrival at the Grangemoor Hotel in Maidstone for the Club Sunday Lunch on 3rd February, then the Fab 55 who attended are (roughly left to right and starting at the top and yes some are pictured twice, but trust me, there were 55 of us):
Dave & Sheila Deller, Bernie & Sylvie White, Joy Payne, Elsie Gurr, Vic Reynolds;
Sue & Martin Parham, Tom Parham, Colin & Marlene Edwards, Edgar & Ann Playfoot, John & Marie Hawkins. Donna, Rachel, Gemma & Chris Hawkins;
Rachel & Gemma with Sue and the calendar they'd found for her; Roy & Phyllis Harman, Pam Crittenden & David Chalk, Wendy & Peter Chislett, Paul Stephens, Ron Attfield;
Mary Oliver, Jean & Charles Darley, Ron Heathcote & Carol Ross, Joy & Graham Kimber, Mick & Mavis Lister, Peter Roots, Grahame, Beverley & Harry Godding;
Jeanne Starnes, Wendy & Bob Frost, Lucy & Peter Kingsford, Paul & Pat Rolleston, Dorothy, Ruby, Suzanne, Mike & Gary Wallace, Pat Riddles with her well deserved flowers for arranging it all, & Pat & Geoff Riddles.

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Vic's Bit

Following on from the poem by Charles:

When a loco grows old
And its fire gets cold
Its tubes you can't see through
With failed boiler test and pistons at rest
I think its k******d, don't you

Odd musings after a liquid Christmas lunch:

Why, if water is clear, it will cast a shadow? It does too.

Why, if air is clear, can you see it shimmering over a hot surface?

What if…

With all this talk about global warming and pollution, just imagine if the powers-that-be turned their eyes on our hobby. It's a prime target because of the smoke and noise our locos emit (steam ones anyway). First they would ban the burning of fossil fuels - pollution. Next; the use of copper, steel and aluminium - pollution caused by the smelting process. Thus there would be no engines or rails to run them on. Petrol and diesel would be taxed so high that it would be too expensive to get a vehicle to the track anyway. What about using solar power you say. Not really enough oomph to pull passengers. You would have to build an engine out of wood or some recycled material and because there are no rails the loco would have to be wheeled and run in a trough to keep it on the track. Not much fun but it would certainly exercise our model engineering ingenuity. Cloud cuckoo land indeed.

What a load of nonsense you say or stronger words even. The thin end of the wedge has already been inserted. Planning permission for a miniature railway was refused a few years back because objections were raised over the ensuing emission of smoke and noise.

Anyone got any more ideas to show how daft things can get?

Vic R
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SUE'S SPOT

Hello Everybody,

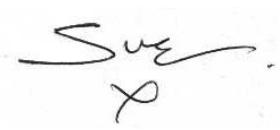
Well, this newsletter comes to you after one of the coldest, wettest, and earliest Easters in nigh on the last century give or take a few years and I hear Easter will not be so premature again for about 200 years… think I'll give it a miss when that time comes. The local TV news said many attractions found their takings down by at least 40%; well, with it being our first public running I can safely say that compared to last Easter ours were down by nearly 1300%.... yes, that is correct! Also the same TV news spot had a shot of our Tom on his Dad's 4½" scale steam roller at the Medway Festival of Steam and Transport at Chatham Dockyard, also held over Easter, so don't forget to ask him for his autograph when you see him now he is a TV Star. I've rushed this newsletter out just a few weeks early to advertise our Club night this coming Friday which is now a guest speaker slot – see article further on.

I think John in his Chairman's Report in this newsletter has covered a lot of ground which I won't stamp over again (or even in advance) so you don't get bored. Oh alright, maybe just one or two convenience points I feel I should mention will crop up, but that's because I feel an extra emphasis won't hurt. The Loo Project; well, donations are welcome even though it's early days still, thanks to the bureaucratic hold-ups. We need loadsamoney so don't hold back! If our Treasurer isn't around, please see me - as you might know I'm a retired Bank Manager who used to relieve people of cash - and misses doing so!

Now onto the running season – just starting – yes we do need people to come and help out with station duties because we can't run without sufficient members to assist so PLEASE come and help out on a Sunday afternoon whenever you can, preferably if you can let us know in advance then please do so. Winter Works have consisted of ongoing maintenance; the usual joy of any school holidays bringing vandalism of some sort to the premises. Can you believe that between Christmas Eve and Boxing Day an outside light was broken and there was attempted damage to the track in three places? Also I believe a seat has been broken with the beginning of Easter and there was smashed glass all over the bridge, and empty beer cans everywhere too that we had to clear up.

Up and Coming Events in Mote Park: The Radio One Big Weekend. Yes, twenty thousand young people each day for a pop concert, four sound stages, bands such as Scouting for Girls (I can see the old codgers amongst us going: "Who?"!), over the weekend 10-11 May. At the moment – and we are waiting for further information – we intend to run on the Sunday as theoretically we could take enough money to make up for our lousy Easter. If we do run then we could do with a good few members around. For up to date news just ask a committee member or keep an eye on the Noticeboard in the Clubhouse. Also there are the two of the largest women-only fundraising events at Mote Park in aid of Cancer Research. The annual Race for Life is being held on Sundays 18 May and 8 June at 11am so please bear this in mind and avoid entering the Park between 10-30 and 11-30 if you can. At least this year the competitors have been warned we may need to get through, but let's avoid any possible problems if we can; it may be some men's dream to be met by several thousand jogging women but trust me, it's not a good idea; the ladies don't need any obstruction in their path.

Next newsletter is due around November time so articles are welcome anytime but by Halloween please (that's 31 October you know). As usual I would thank all contributors and anyone who helped in the creation of this newsletter, as without them all, you wouldn't be reading this. Right; I've gabbled enough! Good steaming, keep healthy, see you soon,



CHAIRMAN'S REPORT 2007

Well, here we are again and another busy year has passed. Our running season started at Easter, which turned out to be our only bit of summer. Throughout the summer we did our usual amount of visits to other clubs and their events, these included Romney, Canvey, Birmingham, Beech Hurst, and North London. In turn Canvey, Beech Hurst, and Sutton visited us at the Park. We also had a visit from the Romney club on one of the Wednesday running days for our senior boys. As always, this was very enjoyable and gives us all a chance to catch up with what's going on. Our road vehicle member got around too, attending the Trevithick's Industrial Celebration at Dartford, Sellinge Steam Fair and also The County Show at Detling.

There was the great success of Edgar Playfoot with his model of the B1 Mayflower, which won him a Gold Medal at the Model Engineering Exhibitions at Ascot - WELL DONE to Edgar. Some of our members went further afield, going all the way to Llanelli in Wales for the IMLEC event. Well done all of you. I did plan to go but work yet again stopped my enjoyment. I heard everyone had a great time and very good placing in the competition, even though Llanelli managed to reshape Tom's Enterprise. If that was not enough Tom went back a few weeks later to Llanelli with his Dad's Steam Roller to a rally. I heard this was quite a dry run for Tom owing to the time it took to drive the Roller to the pub – by the time he arrived the others were leaving.

We held our Friends and Family Day which was well attended. It is always good to see the faces of first time drivers to steam, the horror and delight, it's great. We will be holding this event later this year, look out for the date (*30th August*).

Boiler testing is still very busy. Please do book the tests with the boiler testers IN ADVANCE otherwise you could be disappointed when you are refused.

We had our grand opening of the club refurbished workshop at the end of the season, with Elsie Gurr and family doing the honours of cutting the ribbon and unveiling the plaque in memory of Adrian Gurr. At this point I thank all our members who were involved with this, huge thanks also to Richard Cook for the Milling machine he found, and also a big thank you to the team that went to collect it.

Now to our ladies; a very big thank you for the refreshments you provide for us and our visitors at all of our events that we arrange, without your sterling efforts the days would not be as enjoyable.

Pete Kingsford and his team have been carrying out our usual maintenance of the permanent way at the end of the last season. He tells me that the track is in very good condition, it just needs the usual adjustments, and we have cast two new beams over the last couple weeks to be put into store for the future. His team does a very good job, that's what makes the track such a delight to run on. Boxing Day Run, which I missed (I was sitting out by the pool in Florida, such a hard life), went very well with our members taking over £200 in donations from our loyal public.

Now onto our BIG project: the loo for the club. We did start well by managing to obtain planning permission and thought we had the go ahead from the council. We arranged for a contractor to do the job and a cost was agreed, this was with a view to start work at the end of the running season (early November 2007). All I can say is we have fallen foul of the usual bureaucracy that comes with these jobs where the council has involvement, with many letters, meetings and phone calls all round. We now think we can see light at the end of the tunnel. The club was invited to attend a meeting at the Mote with all users of the Park i.e. the Model Boat Club, Fishing Club, Sailing Club, The Friends of the Mote Committee and the Council Landlord for the Park. This was facilitated by the consultants hired by the council with a view to improve the Park's uses and facilities.

This meeting went very well for all, with the agreement of more communications relating to events within the park. We also managed to have our own meeting with the current Landlord over our problems with the project. After a heated discussion to start with, we hopefully solved the problems and agreed that work should be able start soon and ended with handshakes and smiles from all.

From this meeting the Committee has decided that we will attend any further meetings the Friends of the Mote Park hold in the future. With the Loo Project in mind we are still looking for members donations. If you feel you want to help in that way please see Treasurer Peter Roots who loves taking money.

At this point I would like to thank some of our members. Gus and Keith for their work on the SNCF club petrol hydraulic loco. The time they spent working out how the hydraulic worked and repairing the fault, turned out for them to be quite a project, well done chaps.

MORE THANKS

Two of our Committee Members who have decided not to stand next year: John Barrow our Public Running Officer and Pete Kingsford our Permanent Way Officer, the Committee would like to thank you both for all the hard work whilst serving on the Committee.

Now on to our annual club lunch, well what can I say, a very enjoyable event - food good, company brilliant, it's so good to see so many of you. Such an impressive turnout, over *50* of us. Well done Pat and a big THANK YOU for all the hard work in organising it all. Have you booked next year, if not why not?!

To all I haven't seen this year so far I wish you a Happy New Year. Let's hope it's a good one!

Thank you for reading my waffle.

Your Chairman

John Hawkins.

PS. Ground breaking news; after meeting with Jason from the council, and our contractor, it has now been agreed that we can start work on the Tuesday after Easter.

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MMES COMMITTEE 2008

Officers:

President Peter Chislett

Chairman: John Hawkins — Vice Chairman: Graham Kimber

Treasurer: Peter Roots — Secretary: Martin Parham — Press Officer: Sue Parham.

Committee Members:

Tom Parham — Edgar Playfoot — Geoff Riddles

Pat Riddles — Paul Rolleston — Jack Ruler

SQUARE HOLES

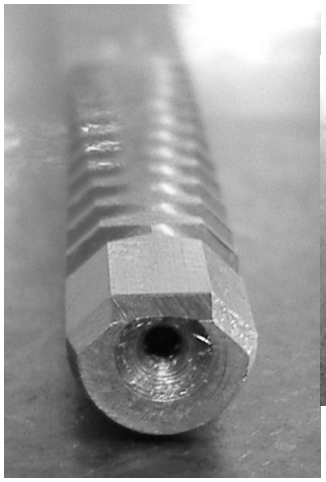
I am referring to the Newsletter article by E.W. Playfoot. I add that I am not a member at the Maidstone MES, but I am at Romney MES & Canterbury & District MES. I do visit Mote Park and I do enjoy reading through the Newsletter via the website.

So Square holes...I am sure that your membership has plenty of people that can offer the required advice. For my part my first piece of advice would be to try using a 'three-square' file (*Triangular to those not knowing*). Easier to file flats to the sharp corner.

Moving on, it may not be only square holes that are required...at Instro we produce a simple lever that locates on a machined 'D' shaped shaft. The aluminium alloy lever is machined from solid and an undersize rounded corner form 'D' shape is milled into it. With the milling operation complete we use a 'D' shaped 'Push Broach' and a fly press. The Push broach has the required form created from rough undersize to finished form along its tapered length. The lead of the 'push-broach is located in the levers undersize hole, it is pushed by the fly press through the aluminium lever and on exiting through the lever produces the required finish 'D' form, to size, time after time.

Whilst we at Instro do this as a manual fly press operation, Push-Broaching machines can be used should quantities warrant their use...they are expensive...having said that the broaches are not cheap pieces of tooling! Although some standard key-way broach sets can be purchased at reasonable cost.

We have in the past made our own push-broaches, simple single edge tool steel ones. More akin to the action of a shaping machine in that the tool is used in multiple passes to produce a sharp corner, moving the tool or work piece over by a manageable increment after each pass until the required form or sharp internal corner is produced.



http://www.wdsltd.co.uk/Broaching/

Pictures here show the Push-Broach (supplied by WDS MARLCO) and the lever before and after broaching.

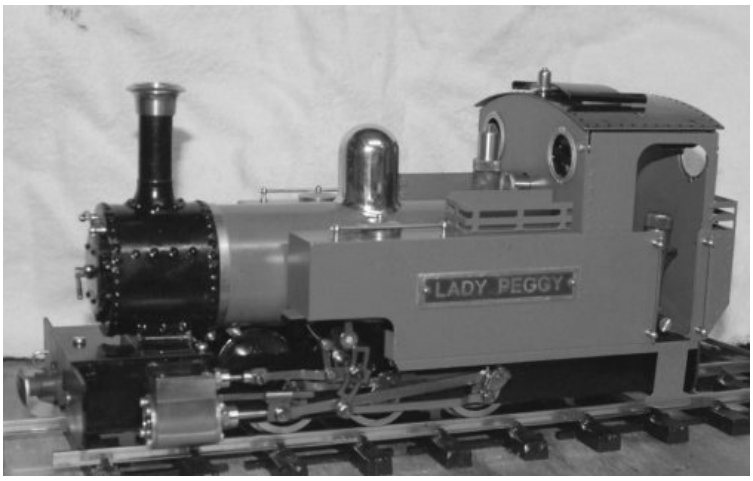
I hope that this is helpful to someone, although as I said at the beginning...you probably have all the knowledge you need with the Maidstone MES membership.

With best wishes that 2008 is good to you all.

Peter Wilson,
Production Engineer,
Instro Precision Limited,
Broadstairs, Kent.

Track "SUPERELEVATION" and

"Lady Anne" by Charles Darley



Having had three occasions when Lady Peggy has taken a roll off the track on the sharp bends 600mm radius I decided to investigate the reasons why.

It has to all be associated with the speed going round the bend and of course going too fast round the bend. Chatting to a scientist friend of mine he told me that I needed to find the Centre of Gravity of the loco and from there as experiments develop it will be possible to find the max speed around a bend of certain size before the loco rolls off the track.

He continued to say:-

“The easy way to obtain a good approximation of position of C of G by reference to the rail head is to:-

Set the loco on track that can be superelevated and held at the position of tilt where the loco just does not fall over.

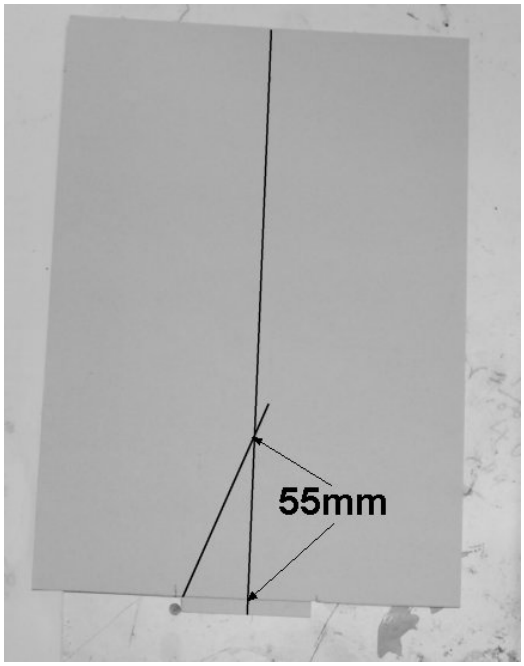
Make up a card that fits snugly between the rails. Mark on it a centre line through the centre of the gauge to the top of the card.

Make up a card which has a known good right angle to be used to mark the original card.

Line up the second card to the rail head inner surface and draw a line up to meet the centre line drawn previously.

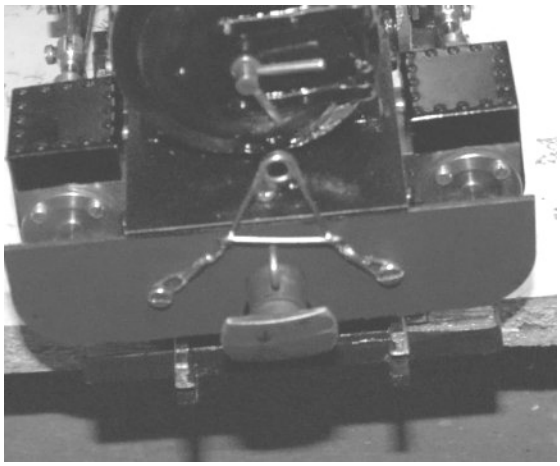
Measurement, on the centre line, between the rail head and the intersection of the two lines will give a very good approximation of C of G."

So I did this and found that my Lady Anne is a C of G of 55mm with the boiler full of water.



Next it was suggested that I used a spring balance held at the point of the C of G and with the track level note the weight needed to start to lift the loco off the track.

Two linkages were devised to attach the spring balance to the loco.

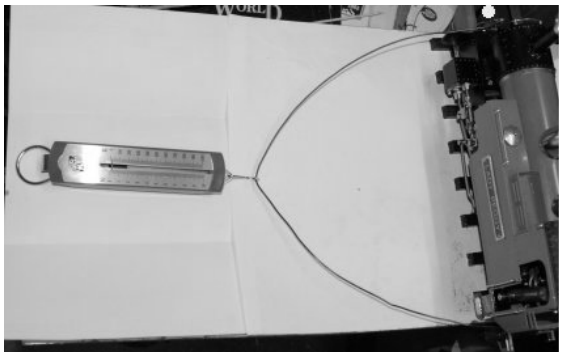


The spring balance was connected to the fixing points and a measurement made.

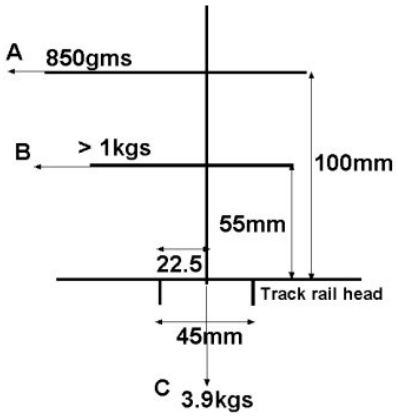
RESULT over 1 kilogram.

The spring balance was connected to a higher fixing point and a measurement made.

RESULT over 850 grams.



The figures are shown in the diagram opposite.



From here I would like to thank a contributor, who sent me an email, for his help in showing me the way to the understanding of the forces acting on a loco both on a flat (horizontal) track and a superelevated track

Firstly on a horizontal track

There are 2 forces acting on a loco going round a bend:-

The **vertical downwards force** due to it's Mass "m" and Gravitational pull "g",

mathematically m x g

The **horizontally outwards force** due to the Mass of the loco "m", the Speed it is travelling "v" and the Radius of the curve "r",

mathematically m x v x v / r

By Pythagoras these can be resolved into a single force the **Resultant force**

$$rf = \sqrt{((m.v.v/r)(m.v.v/r)+(mg)(mg))}$$

From the triangle of forces:

tan α = (m x v x v / r) / m x g

tan α = v^2 / r x g

at the special case of the point of tipping over the resultant force will act through the c of g (c of m some say) and down through the outside rail,

tan α = half the gauge / the height of c of g above the rail head (h)

tan α = 22.5/h

Thus v^2 / r x g = 22.5/h

hence v^2 = 22.5 x r x g /h

$$v = \sqrt{(22.5 \times r \times g / h)}$$

As this is at the point of tipping over the v = max speed before tipping is calculated to occur thus Vmax.

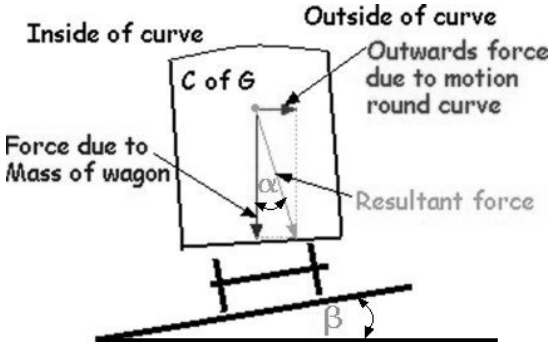
Secondly on a superelevated track

r = radius of track

g = gravitational force

h = height of c of g above the OUTER rail head

$$vmax = \sqrt{(\tan(\alpha + \beta) \times$$



In fact this actually doesn't make a huge difference!

And now for some maths which I hope is correct

Then by calculation for maximum speed :-

Taking moments.

Loco weight 3.9kgs with boiler full.

Half width of gauge 22.5 the amount the C of G would have to move to topple the loco gives

3.9 x 22.5 = 87.75kg.mm

Imperially I achieved :-

at a height of 100mm

850gms (0.85kgs)

which is close to a calculated amount 87.75 / 100 875gms

which gives a moment of

0.850 x 100 = 85 kg.mm

at a height of 55mm

greater than 1kg (I only have a spring balance that can achieve 1kg)

which is close to a calculated amount

87.75 kg/mm / 55mm = **1.59kgs**

Vmax = SQRT(22.5 x r x g / h) (equation given to me on the G1MRA forum)

22.5 (mm) is half the gauge (the down force has to move from the middle i.e. when stationary, to just outside the outer track edge to tip the loco over.)

r is the track radius in mm

g is the gravitational constant in mm / sec / sec; the value I used was 9728

h is the height of C of G

My radius of track is 600mm and C of G is 55mm

Vmax = SQRT(22.5 x 600 x 9728 / 55) mm/sec

Vmax = 1545mm/sec

Speed in mm / sec x 0.00224 gives actual mph. (equation given to me on the G1MRA forum)

Vmax = 1545 x 0.00224 MPH

Vmax = **3.46 MPH** and good walking pace!!!!

Centripetal force = mass x velocity^2 / radius

velocity in m/sec and radius in m

Applying that to my loco of 3.9kgs

3.9 x 1.545 x 1.545 /.6 newtons

=15.51 newtons divide by g gravity 9.81

15.51 / 9.81 kgs

= **1.58kgs**

Thus my loco should be able to take a 600mm radius curve at 3.46MPH without tipping over and would require a centripetal force of 1.58 kgs to tip it over.

Well, it cannot, as far as I can tell, take the curve safely at that speed so the wheels must ride up the rails and also contribute to rolling over.

Editor (trying to wear intelligent expression): I had difficulty lining this up so if it's slightly out in places I apologise.

BOILER TESTS

A list of boilers tested by the Society and their expiry dates is on the Club Noticeboard. If your model is on this list and no longer in use, or you have sold the model, then please inform the Secretary so that the record can be corrected. Models that are not in use or are tested by other Societies are not shown on the list.

Members wishing to have a boiler tested by the Society to the Southern Federation Test standards, **MUST MAKE PRIOR ARRANGEMENTS WITH TWO** of the following for the test (in other words, please book an appointment!):

John Barrow	Telephone Number 01634 863915
Dave Deller	Telephone Number 01732 841194 (unable to book much this year)
Graham Kimber	Telephone Number 01732 845931
Peter Kingsford	Telephone Number 01233 712086
Martin Parham	Telephone Number 01622 630298
Bernard White	Telephone Number 01634 841899 (Wednesdays best)

Kindly note that boiler tests will not be carried out during Public Running or Members Playtime Runs so please don't ask for a test between 2pm and 5pm on a Sunday, Bank Holiday Monday or on the Third Wednesday of each month from April to the end of October.

Thank you.

Just one "funny" this issue:

WORDS WOMEN USE - and their meaning!

1. **Fine**: This is the word women use to end an argument when they are right and you need to shut up.
2. **Five Minutes**: If she is getting dressed, this means a half an hour. Five minutes is only five minutes if you have just been given five more minutes to watch the game before helping around the house.
3. **Nothing**: This is the calm before the storm. This means something, and you should be on your toes. Arguments that begin with 'nothing' usually end in 'fine'.
4. **Go Ahead**: This is a dare, not permission. Don't Do It!
5. **Loud Sigh**: This is actually words, but is a non-verbal statement often misunderstood by men. A loud sigh means she thinks you are an idiot and wonders why she is wasting her time standing here and arguing with you about nothing. (Refer back to #3 for the meaning of nothing.)
6. **That's Okay**: This is one of the most dangerous statements a woman can make to a man. "That's Okay" means she wants to think long and hard before deciding how and when you will pay for your mistake.
7. **Thanks**: A woman is thanking you, do not question, or faint. Just say "you're welcome".
8. **Whatever**: Is a women's way of saying *** you!
9. **Don't worry about it, I got it**: Another dangerous statement, meaning this is something that a woman has told a man to do several times but is now doing it herself. This will later result in a man asking, "What's wrong?"(For the woman's response refer to #3).

You may send this to other men, to warn them about arguments they can avoid if they remember the terminology, or send this to all the women you know to give them a good laugh, because they know maybe it's true!

HORSESHOE PASS TEST by Norman King.

In the 1950s, Britain was called **GREAT Britain**, and was the title, not four separate countries, well, those days have gone. So have some of the great engineering names, of industry and the old types of practices, for what is now called progress. Sentinel steam waggons were built at Shrewsbury, Shropshire, situated close to the border of Wales. This firm looked after owners and drivers of their vehicles in a publication called a "News Letter" and "THE SENTINEL DRIVERS CLUB". Steam waggons are no longer made, but the club is still alive and active.

During their production, vehicles were being modified continually, so customers received the most up to date vehicle available. Also each vehicle was constructed by a single team of workers, and each vehicle had an individual serial/identification number, making every part traceable in relation to the construction, including factory overhauls and rebuilds. Upon completion each vehicle would be tested, under load conditions, and covering all types of road running conditions, before being delivered or collected by the new owner. The training of drivers was undertaken; they were trained and instructed on the best use of that particular type, and good practices of steam waggons. This included road traffic laws and regulations, and showing consideration to other road users. The Sentinel Drivers Club publication provided the latest information to keep drivers and owners up to date with new developments. Now it keeps member of the club in touch with each other, and prints articles on waggons, including problems and the search for spares, and items required for repair or rebuilds. One of the club's events is the re-running of the Horseshoe Pass Test Run, which occurs about every three years, and this has become a highlight of the local Shropshire Steam Rally.

The construction order of a vehicle started with the identification number and specification type of vehicle to be constructed, like tipper, flat bed, (long or short), etc., which makes it possible to trace a particular vehicle's details through it's working life, and it's history. It also matches this identification and original registration number from the Vehicle Licensing Authority (County Council), which has become the DVLA. Work starts with the correct type of chassis being manufactured, complete with springs, axles and wheels, with steering gear added making it a moveable unit. Then the main components are added like water tank, engine, and boiler; then it is pushed into the assembly and fitting out area. During the building process any engineering advancements were incorporated, making very few Sentinel waggons the same. A stage is reached when the complete body is fitted and the cab, both then finished in the colours of their prospective owners. Finally the big day comes when the completed waggon is pulled out of the workshop ready for its first steaming. The water tank is filled and steam coal put in the bunker, and the boiler filled with water to the bottom of the sight glass. A load of concrete blocks/water tanks filled up to the maximum carrying capacity is loaded onto the body. The day of the test is scrutinised by suited gents armed with clipboards, and brandishing an array of clocks and stopwatches. They note every little detail down, from the lighting of the fire until its final disposal on completion of the test run. The test starts from lighting the fire; how long it took and the amount of coal consumed to reach full steam pressure. Then off onto the road, with a slow start through Shrewsbury town centre, crossing the bridge over the river Seven, and onto the main A5 heading north-west and following the river valley, with its gentle undulating countryside towards Oswestry.

Modern progress has change the original road route of the main A5 (London to Holyhead) road. Over the years it has been improved, with towns and villages bypassed. The original route passed through Shelton to Mountford Bridge, then onto the new A5 which has been widened and levelled out passing through Nesscliffe and Weirbrook. Water would have been taken at this point or just to the north, or, alternatively, at the Queens Head. Both are no longer any use because the road has been raised too high making it impossible to reach the water in the stream, also access to Mr Telford's canal is restricted. So water is taken from a convenient fire hydrant. This is done either by using the Sentinel boiler water lifter or water mains pressure via stand pipe and hosepipe. The old A5 route goes via Babbinswood to Whittington, then

rejoins the current A5 just to the north of Gobowen, not staying long before leaving at Preesgweene and passing through Chirk. This is where some great views can be obtained of Mr. Telford's engineered canal, and his aqueduct, which crosses the valley. I understand that, if one wishes, it is possible to walk over the aqueduct on the towpath, having done this there is only one drawback; you have to come back the same way, or return via a longer walk at the bottom of the valley.

Things start to change; the road starts climbing, with inclines increasing into the Llantysilio Mountains. The current A5 bypasses Froncysyllte; the boiler works hard to maintain steam pressure and speed. Continue onwards to Llangollen, turning right and leaving the A5, crossing the road bridge over the river Dee, then turning left onto the A539. Time for another water stop at a fire hydrant, which is conveniently positioned 4 feet out from the road edge, just past the entrance to the now preserved Llagollen Railway. Steam whistle greetings are exchanged with those steam engines constrained by two strips of steel. Now the heavy steaming starts, getting the fire white hot, not quite blowing off, with a boiler water level at or about two thirds. The trick is being able to maintain this all the way, while climbing up the Horseshoe Pass, which due to the direction being travelled, and the front of the vehicle being higher than the back, indicates a full glass of water in the boiler, when it is often less than that. So judgement, together with careful observation come into play, and whenever a level section is reached the water level is checked and adjusted. However, the nature of hills is that a gradient is not nice and steady, but variable in steepness and length throughout the climb, so life is very interesting for the fireman. Plus it is dependant on the help and consideration given by the driver. This being in relation to how steam is used, which helps with the maintaining of a good water level in the boiler. It has been known for firemen and drivers to have disagreements, and strong language to be used. Also there can be steam waggons that need to have to a stop, so boiler pressure can be built up, and get the water levels up in the boiler, before continuing the climb. Well, if everything goes to plan then the summit can be reached with full pressure and about half a glass of water in the boiler. With completing the climb of 1514 feet approximately, the fire needs to be closed down, and the boiler filled with water, stopping the safety valve from blowing off, and should cause the boiler to simmer until required to make steam again. Then a refreshment break is taken and the crew drink a copious quantity of fluid.

Time for judgement does not come yet, even after the test run of 37.5 miles, but is left until after the descent back down the Horseshoe Pass, and the steam rally field is reached. The Sentinel Drivers Club does not discriminate against Sentinel Diesel waggons coming on the test run and rallies with the steamers, in fact they can be very helpful in the transporting of coal and spares about.

ORIGINAL TEST RUNNING DETAILS

Sentinel Double Geared (6 Wheels)	Sentinel S4 (shaft drive 4 Wheels)	Sentinel Medium (6 wheel) Diesel
Solid rubber tyres (doubles on rear bogey.)	Pneumatic tyres (double on rear)	(doubles on rear bogey)
Test:-December 20th 1927	**Test: - June 16th 1933**	Rear wheel bogey with trailing axle.
Raise full steam 53 mins.	Raise full steam 68 mins.	Under floor horizontal 9.12 Litre Engine, with Fuel injectn
Steam coal required 48 lbs.	Steam coal required 72.5lbs.	Fitted with David Brown 557, five speed gearbox.
Normal boiler pressure 275lbs.	Normal boiler pressure 255lbs.	Air Clayton/Dewandre Brakes, cylinder at each wheel
Coal bunker half a ton (about 150 miles)	Coal bunker 2.75 cwt (about 60 Miles)	**Test: - November 1954.**
Load carried on test 12 tons.	Load carried on test 6 tons 6.5cwt	Loaded 13 tons 7.5 cwt. Unladen weight 6 tons 12cwt.
Length of Test run 37.5 miles.	Length of Test run 37.5 miles.	Length of test run 37.5 miles x 2 = 75 miles.
Time taken on test run 2hrs 12mins.	Time taken on test run 1 hr 20mins.	Time taken on test run 2hrs. 30mins.
Average speed on test 17.05 mph.	Average speed on test 23.06mph.	Average speed 30 mph.
Total weight 21 tons 7cwt 3qrs.	Total weight 13 tons.	Gross weight. 20.25 tons.
12.9 Miles per cwt coal.	38.1 Miles per cwt coal.	Average fuel consumption over 75 miles, 10.05 mpg.
Water tank full 200gallons.	Water tank full 170 gallons.	Fuel tank 48 gallons.
Tank range 37.5 miles.	Tank range 57 miles.	Approximate tank range 480 miles.
Max gradient in top gear 1in 9.	Max gradient in top gear 1in 8.	Gradient of 1 in 5 required first gear.

These test figures gives you some idea of the how much advancement there has been in road haulage vehicles, but these are very primitive when compared to the modern lorry.

Also the comfort of the drivers has been considerable to get the most out of initial vehicle investment. The modern driver could wear a suit if he wished, or like most, just vest and shorts, because of technical developments in engines, gearboxes and advancements like climate control for most lorry cabs.

After the refreshment break and checking the vehicles over, there is generally preparing them for the descent down the Horseshoe Pass. This is harder work than going up. With everything ready the fire is livened up to get the temperature and boiler pressure up to just below blowing off. Remember that the water level will register as high in the boiler, because the steam waggon slopes towards the front when going down hill, which gives a high water level reading, when in reality it can be very low. Now the descent can begin, it is worth noting that steam waggons only have brake shoes on the back wheels. So it is considered that the safest place for another vehicle is behind when going down hill, leaving a good distance between, just in case. Going down hill is hard work for the driver, and the waggon has to be kept under close control. That is keeping the speed down so you can stop the waggon quickly in case of an emergency, this being easy to say but can cause problems in achieving. The braking system is operated on the back wheels by a handbrake lever, through linkage to the actuating lever at the rear wheels. Also by a footbrake pedal which uses steam pressure to also operate a calliper on the rear wheels. The handbrake is used to brake regulating the speed, and for keeping the waggon under control, being released on level sections. The steam footbrake is to assist in slowing the waggon as required, and to finally stop it. There is a saving factor if under close control and things are not going to plan, the steam engine can be put into reverse, **YES REVERSE.** When reverse is engaged a continuous sound is emitted like a person breaking wind loudly. This can cause the waggon to stop very quickly, if the speed is low enough then even to stop dead; the waggon will even skid along with the back wheels locked. When doing this with a Sentinel steam waggon, the regulator should be and needs to be closed, if the regulator is slightly open or is then opened it will cause the vehicle to go backwards. This can result in engine damage, or for the following driver to panic, either deciding to leave the road or run into the rear of the steam lorry.

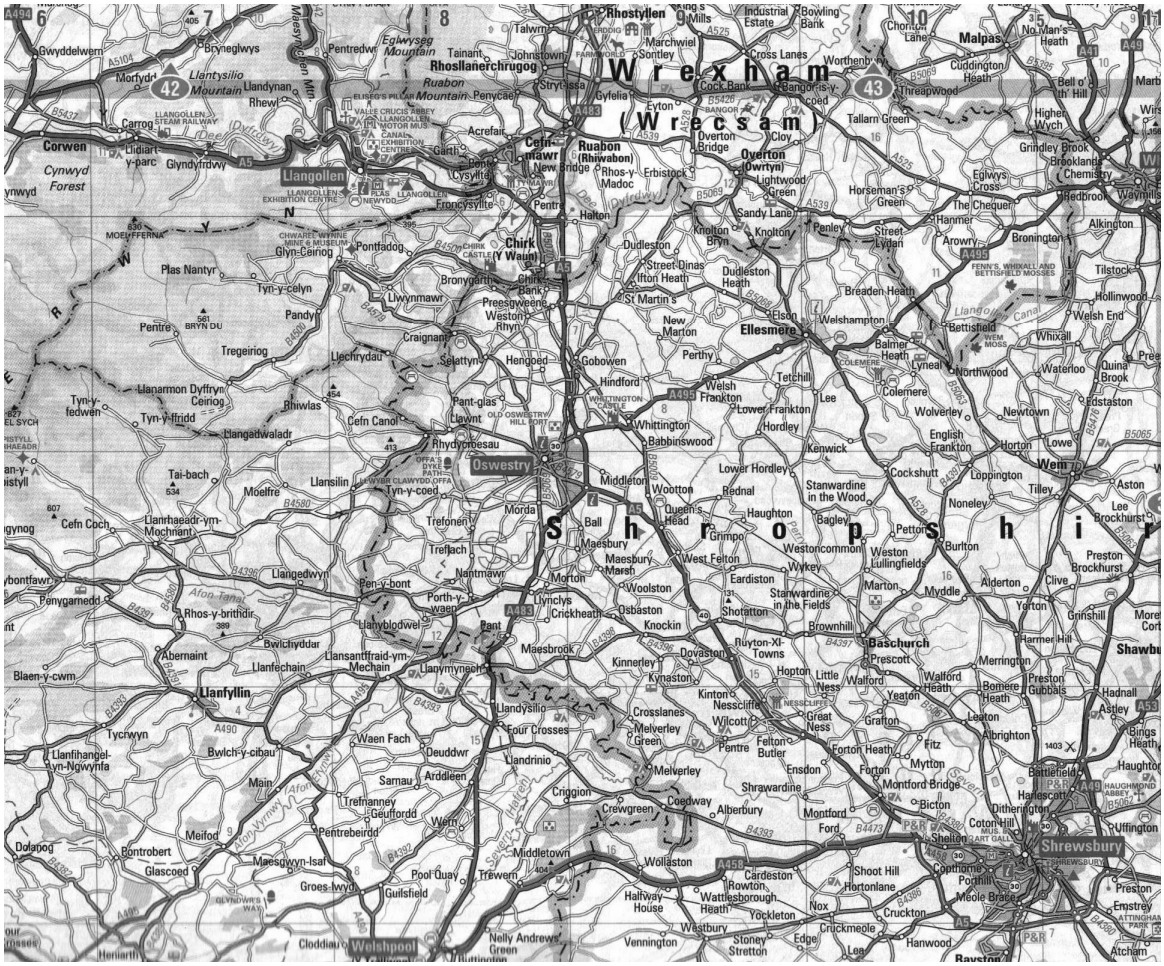
Like most claims, they have to be tried and tested, so an experiment was staged on the large flat and empty car park at the old Sentinel works. At a walking speed of about 3 miles per hour, a brave owner put his steam vehicle into reverse, first with regulator closed, which stopped it dead and the back wheels skidding. It then was repeated with the regulator just cracked open, it stopped dead, the back wheels skidding, and then the waggon started to move backwards. I understand that records have reports of a steam cylinder end cap having been blown off, due to this action with the regulator open. Well, going downhill if the steam waggon is not under close control, is comparable to a roller coaster ride that has came off the rails and the end result and stopping place is unknown. It is bloody dangerous.

Having successfully negotiated the descent down the Horseshoe pass, and reaching Llangollen, the most pressing task is filling the water tank, this is soon done. Most Sentinel crews make a note of the location of watering points, particularly in very useful places, off the road or out of the line of other traffic. With a full water tank the journey continues to the site of the Shropshire Steam Rally. This is normally about the same distance as already steamed, and tends to be fairly close to Shrewsbury. The first thing to do on the rally site is parking up, all the Sentinels in same area, and a place of honour, because of the association. Close down the fire, and then the most important task is having a meal, one tends to get very hungry with the physical activity. This is quite often cooked in the ash pan, and produces some quite interesting results. The repast ranges from baked potatoes, roast chicken, steak pies, sausages, plus bacon and eggs, the all day breakfast. It all depends on what you have remembered to bring with you, the most important item being a roll of aluminium (kitchen) foil to keep the ashes out of the food while cooking it.

During the evening the test run timings and details are analysed, it becomes (after a few beers) surprising to learn the old steam waggons can match the original timings. This also depends on the crew knowing what they are doing, and being reasonable in firing, driving, and most importantly working as a team. Then times are much the same as the original test figures. Steam rallies are fantastic places for meeting old friends and being very lazy or having little activity. Once the rally is over the time has come to say goodbyes, and get the waggon ready for the steam home, generally the next day. Steaming to and from rallies gives you a good sense of achievement in the distance steamed, and the time taken. There is the great satisfaction and a sense of achievement for what you have done, also for living rough on the road. Not to mention for the physical effort, level of fitness and stamina required to steam a Sentinel over a weekend. It gives you some idea and appreciation just how hard our previous generation had to work; and up to 12 hours every day; the working week then being six days.


Norman steaming Sentinel DG6 (1993)

Bye for now,
Norman.



Noel Shelley & the Ringstead Foundry.

It all started 50 years ago, when as a small boy I stood in the doorway of a large steel foundry in North Yorkshire watching all that went on, and being awestruck at the huge ladles of molten steel carried by the overhead cranes pouring the moulds. The sparks, the flames, the noise, oh the noise! The carbon arc furnace had carbons the size of telegraph poles and the whole place humming! It's all still there, cold and dead, in the middle of a housing estate!!!

As a teenager I played with lead, melted in a bean tin on a fire in the garden. It must have been a catering size tin as I cast what could pass for a cannonball. Then my interest lay dormant for many years as I worked in various fields of engineering, and in a bet which some would say I lost, I ran a small waste disposal business for twenty years. You would never believe the many wonderful things people throw in skips!!!!!

WELL, I got to thinking that there must be something more interesting, if not more profitable one could do with all the brass, bronze & aluminium, as well as the lead, rather than simply take it to the local scrap yard. Having bought and read most of the books on foundry work I could find, as well as saving all sorts of bits and pieces that might come in handy to make a furnace, one day I got a call, telling me of a fellow near Norwich who was selling all one needed to get started in doing your own castings. I bought the lot, a modified propane fuelled casenit furnace, some steel mould boxes, some moulding sand and various bits and pieces. This first furnace was affectionately christened "Puff". It was a fearsome beast with a one horsepower blower and a voracious appetite for gas that breathed fire.

The first attempt was a fairly simple ali casting that came out well, and then having bought a range of proper foundry lettering the second was an aluminium nameplate. This was followed by several more nameplates in brass and various other small castings for a gunsmith. Having now got the hang of things – well, sort of - and after some experiments, one weekend I decided to make a "BABY"!!!!

The by now large collection of bits and pieces from all sorts of places were arranged in an orderly fashion, that by the Sunday evening had become an extremely efficient and fast crucible furnace. The main components had come from a washing machine, a spin drier and a vacuum cleaner. Poor "Puff" fell by the wayside, and although the new "Baby" didn't grow, Ringstead Foundry certainly did!!!!!!!

With a range of lettering from 1/8" to 4" and several styles, nameplates for both scale and full size engines (traction and rail), countless houses, as well as descriptive plaques have been cast. From replica Rolls Royce door handles to very detailed, highly polished items, all have been cast in Mansfield sand.

Those of you who saw the last series featuring Fred Dibnah will have seen some of my work. It was a great honour to have cast the brass plate used to show the title of the programme "MADE IN BRITAIN".

During my evening with you I will endeavour to briefly explain the vast subject that is foundry work and the setting up of a small home made foundry. This includes basic metallurgy, pattern making, sands and mould making, the melting and casting. You will also get to meet The Baby, who can, from cold, have 18lbs of brass up to 1050 degrees C for pouring in 15 minutes.

To the polite I'm a character, to the rest I'm bordering on mad! Why not come and hear me speak, and judge for yourself?

Noel Shelley.

Editor: Noel is our guest speaker on Friday Club Night April 4th and is coming from Norfolk especially to entertain us for the evening, so we hope quite a few of our members can attend too.

LIMITED MODEL ENGINEERING ACTIVITIES by E. Playfoot

My model engineering activities this last winter have been severely limited due to works in our garden. Our main driveway, which we share with our immediate neighbour, is lined with two rows of conifers, about thirty trees in all. I have already topped them twice, the first time just after the hurricane in October 1987 and the second time about three years ago. One of the trees I didn't top then was a light coloured Leylandii now well over fifty feet tall and it was beginning to threaten our neighbours. Several times they made comments about it in a nice way.

All the trees were beginning to look unsightly with a large amount of dead wood so we began to explore the possibilities as to what to do with them. We invited quotations for their removal and clearance. We had several so-called tree surgeons look at the trees and go away with the promise of providing a quote but they never did. Eventually we did receive a quotation close to six grand, which emphasised the enormity of the job and, the amount of wood to be cleared.

I wondered if I could do the work myself. I thought I could fell most of the trees safely but the large light green Leylandii did frighten me somewhat.

However the school half term arrived along with my growing grandsons aged 14 and 16 years who are always hungry to earn money and so looking for jobs to do whilst staying with grandmum and granddad.

So during a lovely bright but cold February morning we started by reducing the height of eight of the smaller conifers. This went well with the grandchildren and their mother and grandmother removing the branches and feeding them through the chipper machine.

The next day dawned and I decided to have a go at the huge light green Leylandii. I could not risk felling it from the bottom because it had a lean towards our neighbour's bungalow. It would have to be cut at least mid height. The foliage was so dense I could not climb it so I cut away branches from its base up to as high as I could reach using my longest ladder. I tied the ladder securely and donned my harness and with my heart thumping in my chest I made the first directional birdsmouth cut with my small chainsaw. I then cut through from the other side as far as I dare. Then with the aid of a long rope we managed to pull it over. This was a great relief and it was now a relatively easy matter to fell the remaining stump and cut it up.

It is now mid March and I have continued over the several weeks felling, chipping and clearing over twenty trees. We must have created over 10 cubic yards of chippings and filled four 6 yd skips. There are now 8 small trees left to fell which I am leaving as a screen until we have planted 27 new mature English laurels. There will then be over 30 tree roots to grind out followed by rotovating, seeding and/or turfing.

Getting Ready to cut

Down it comes

Pulling the Leylandii down

Clearing nearly complete

Model engineering! What's that? I haven't time for anything like that! I have a garden to look after!

Even so I have progressed a little with my 5" A1, done a little on my gauge one Dee, nearly finished sticking together a $7^{1}/_{4}$" boiler and assembled a gauge one guards van kit.

Edgar.

DUTY DOG & STATION STAFF ROSTER PUBLIC RUNNING 2008

Date	*Traffic Controller*	*Fare Collector*	*Passenger Loader*
April 6			
April 13			
April 20			
April 27			
May 4			
May 5			
May 11			
May 18			
May 25			
May 26			
June 1			
June 8			
June 15			
June 22			
June 29			
July 6			
July 13			
July 20			
July 27			
August 3			
August 10			
August 16		To supervise visiting clubs	
August 17			
August 24			
August 25			
August 30		Family and Friends Day	
August 31			
September 7			
September 14			
September 21			
September 28			
October 5			
October 12			
October 19			
October 26			
December 26			

Public Running is generally between 2-30 and 5. Unless we have volunteers for ALL THREE POSITIONS we will **NOT** be able to run on these afternoons. IT IS A PAIN TRYING TO FILL THESE ROLES ON THE DAY. Check your diaries now to see when you're free. Over 30 running days (hopefully) where the Club could earn much needed funds for maintenance and future projects. (Not to mention the toilet!) Or nobody bothers, the Club gets zero, and before long, ceases to exist. Your choice. Any member can cover one of these posts, no excuses. And if everyone did, you would only have to do it once, and could be proud to have done your bit. The list is maintained on the noticeboard by the door in the Clubhouse. Some slots have been filled, but not many. Jack Ruler is in charge this year, telephone him on 01634 327186 to book your slot. If you have volunteered but cannot make it for any reason, please let him or a member of the committee know, and try to fill a slot another time. And you should be happy to do ANY of the duties – not just Traffic Controller - you can arrange to share with someone else if, say, you only want to do an hourly stint.

YOU JOINED THE CLUB AND THE CLUB NEEDS YOU. PLEASE DO YOUR BIT.

DON'T BE A SLEEPING MEMBER - BE AN AWAKE AND PARTICIPATING ONE!!!

DIARY DATES 2008 *(updated 27/3/08)*

Friday April 4:	Guest Speaker – Noel Shelley & the Ringstead Foundry (note change of event)
Wednesday April 16:	Members Playtime Run
Friday May: 2:	Bring & Buy Anything & Fish & Chips & Cheesecake £6
Wednesday May 21:	Members Playtime Run
Friday June 6:	Evening Run & Pizza & Salad £2 per head
Saturday June 7:	Visit to Canvey Track
Wednesday June 18:	Members Playtime Run
Saturday June 28:	Visit to Beech Hurst (to be confirmed yet)
Friday July 4:	Evening Run & Fish & Chips & Cheesecake £6
Wednesday July 16:	Members Playtime Run
Friday August 1:	Evening Run & Barbecue (Bring your own food to barbecue)
Saturday August 9:	Visit to North London SME
Wednesday August 20:	Members Playtime Run
Saturday August 16:	Canvey & Beech Hurst Societies to Visit M.M.E.S.
Saturday August 30:	Family & Friends Day at MMES

Friday evening events start at @ 7-45pm.; evening runs can be a bit earlier. Playtime Runs from about 10-30am. Donation of a minimum £1 per person for evening meetings please towards club costs.

ANYTHING ANYWHERE ELSE KNOWN ABOUT THAT YOU MIGHT LIKE TO KNOW ABOUT:

April 20: Isle of Wight MES Loco Rally at Cowes, Isle of Wight
April 19-20: Southampton SME Open Weekend
April 26-27: Model Engineering Show at the Milestones Museum Basingstoke
May 3-4: Trevithicks Industrial Dartford Celebration, Central Park, Dartford.
May 3-5: Urmston Mayday Steam Traction Engine & Vintage Event
May 3: Welling Open Day
May 9-11: Harrogate M.E. Exhibition
May 10-11: Romney MES Open Weekend
May 17-18: Southern Federation Spring Rally at the Vale of Aylesbury Society, Quainton, then Open Day
May 17: Merstham Model Steam Show
May 24-25: Littlelec at Guildford (IMLEC for smaller locomotives)
May 31- **June** 1: Peterborough SME Rally (PMLR) at Longthorpe, Peterborough
June 7-8: Welsh Locomotive Rally at Cardiff
June 7-8: Sweet Pea Rally at City of Oxford SME
June 14: Harlington LS Visiting Clubs Day
June 14-15: Harrow & Wembley SME Open Weekend
June 14-15: North Wilts Open Weekend
June 14-15: Narrow Gauge IMLEC at Rochdale
June 21: Southampton SME Electric Open Day
June 21-22: Bournemouth & District SME Open Weekend
July 5-6: IMLEC at Southport
July 12-13: Guildford MES 41st Model Steam Rally & Exhibition
July 18-20: Canvey Long Weekend Open Days
July 19-20: Sacrewell Miniature Traction Engine & Model Engineering Gathering, Peterborough
July 25-27: Chichester & District SME Birthday Celebrations Weekend
July 26-27: Dreaming Spires Rally at City of Oxford SME
July 26-27: Kinver & West Midlands SME Open Weekend & Exhibition
August 23-25: Harrow & Wembley SME Open Weekend
September 7: Fareham DSME Diesel-Electric Event
September 13-14: Birmingham SME National Locomotive Rally
September 13-14: Urmston 60th Anniversary
September 19-21: Model Engineer Exhibition at Ascot Racecourse
September 20-21: Southern Federation Autumn Rally at Bracknell Railway Society, then Open Day
October 4: Welling Open Day
October 17-21: Midlands Model Engineering Exhibition at Warwickshire Exhibition Centre

The small print: Please note that events/dates are likely be added before the next newsletter. Be aware that dates may change and sometimes events get cancelled and we may not know. A copy of the diary dates is kept on the clubhouse notice board and updated from time to time. If in doubt, please check. But we don't claim to know everything! Feel free to contact the Secretary for any details or information on MMES meetings. The Club website is at www.maidstonemes.co.uk