

MAIDSTONE MODEL ENGINEERING SOCIETY



NEWSLETTER - Spring 1986

 MAIDSTONE MODEL ENGINEERING SOCIETY
 CALENDAR OF EVENTS 1986

Sun Mar 30: Running Season Starts.

Fri Apr 4: Video Evening.
 Sun Apr 20: Malden Open Day.
 Sat Apr 26: Welling Open Day.

Fri May 2: Odds & Ends Evening.
 Sat May 17: Romney Marsh Open Day.
 Sat May 17: Wealden Pullman Evening.
 Sat May 24: Visit from Sutton Club.

Fri Jun 6: Barbecue & Night Run.
 S/S Jun 7/8: Harrow Open Days.
 Sun Jun 22: Welling Tract. Eng. Day.
 Sat Jun 28: Visit to Bill Hart's Ry.

Fri Jul 4: Preparation Evening.
 Sat Jul 5: Our Open Day.
 S/S Jul 5/6: Malden Open Days.
 S/S Jul 5/6: IMLEC at Bournemouth.

Fri Aug 1: Club Night.
 Sat Aug 30: Visit to Sutton Club.

Fri Sep 5: Evening Meeting.
 Sat Sep 6: Welling Open Day.

Fri Oct 3: Club Night.

Fri Nov 7: Club Night.

Fri Dec 5: Club Night.
 Fri Dec 26: Boxing Day Run.

 All dates advised by time of going
 to print.

ROLLING STOCK

There are a number of members contemplating building their own rolling stock, so we are reprinting an article written by Richard Linkins from the autumn 1974 newsletter which may well be of use.

* * * * *

The latest additions to the rolling stock at Mote Park are the four Society-owned bogie passenger cars. These have been built to replace the old Kennion-bogied trucks which have been in poor condition for several years, despite the efforts of several members to change this. The old bogies have slowly succumbed to a combination of old age, higher speeds and increased loads. This has caused axle and bearing housing wear which has loosened bearings and wheels. Cracks in aluminium frames have also developed, and this has probably been aggravated by the removal of suspension springs from the bogies, in order that they should carry higher loads without sinking too far. The brake gear, and especially the brake blocks, has worn rapidly because it was not designed for the use to which it was used recently.

The new bogies have been designed to withstand the rigours of general usage for several years with little maintenance. Large ballraces (approx. 2" O.D.) are fitted in the 3½" diameter wheels, which are in turn pressed on to tubular axles. This system ensures that no twisting forces are applied to the bearings which therefore prolongs their life and they are double-sealed which will ensure good lubrication. The solid axle is stationary and all of them have been machined to a close tolerance at their outer ends so that all the wheel and axle sets (except two previously constructed) are interchangeable.

The ends of the axles are supported in rubber bushes fitted into side frames. This is the only suspension, but it will provide shock absorption without allowing the truck much lateral wobble. The side frames and top stretchers are made of 1/8" steel and are standard whether the bogies are braked or not. Four 1/2" round cross stretchers are fitted in addition to the top one and these are turned down at the ends and held to the frame with nuts. The two lower stretchers act as guides for the brake plate and the cam which operates this is fitted between them. The brake plate is 1/8" thick and has two elongated U's rivetted to its top surface which slide on the cross stretchers. A spacer is also fitted between the cam and guides in order to accommodate future wheel turning.

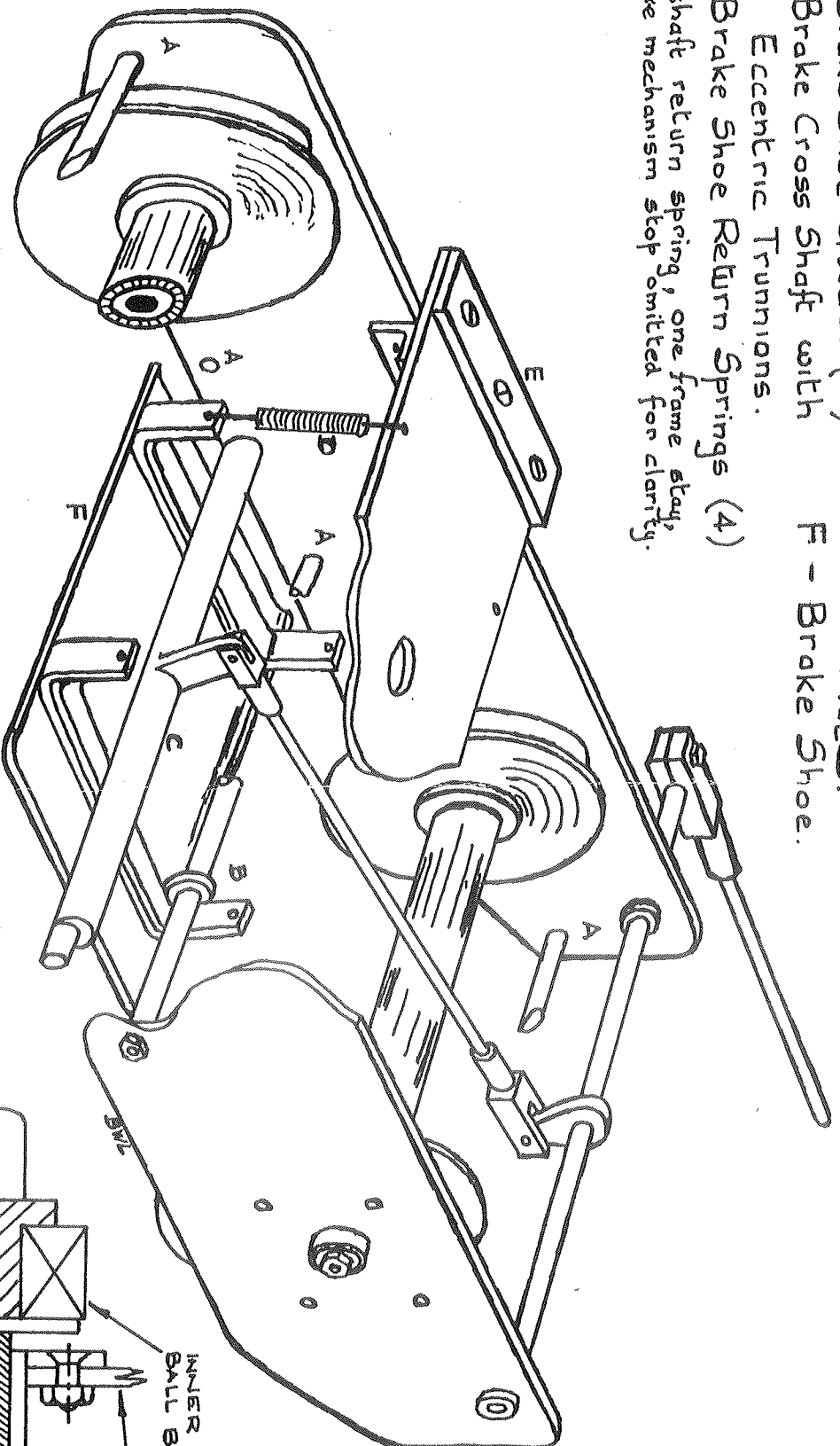
The brakes are operated from a cross rod at the front of the bogie. This is fitted with a handle and a travel limiting stop outside the frame, on the left hand side. The stop is adjustable and stops the wheel flanges being lifted clear of the track. As the brake handle is fitted to the bogie, the bogies do not have to be permanently fixed to the truck frames and therefore the vehicles are more manageable.

The actual rubbing plates on top of the bogies are made of P.T.F.E. These wear on the underside of the bogie plates on the trucks, to which the swivel pins are also fitted. The truck frames themselves are made of 1" square, 1/16" wall steel tube welded together, and the end pieces are arranged so that the conduit supports of the leg guards slide into them. The guards themselves are clad with sheet material and have wooden footboards under which the conduit is bolted. The truck seats are made of 1/2" plywood and handles are fitted front and back to prevent loss of passengers, although the front handle is lower to facilitate driving of tank locomotives.

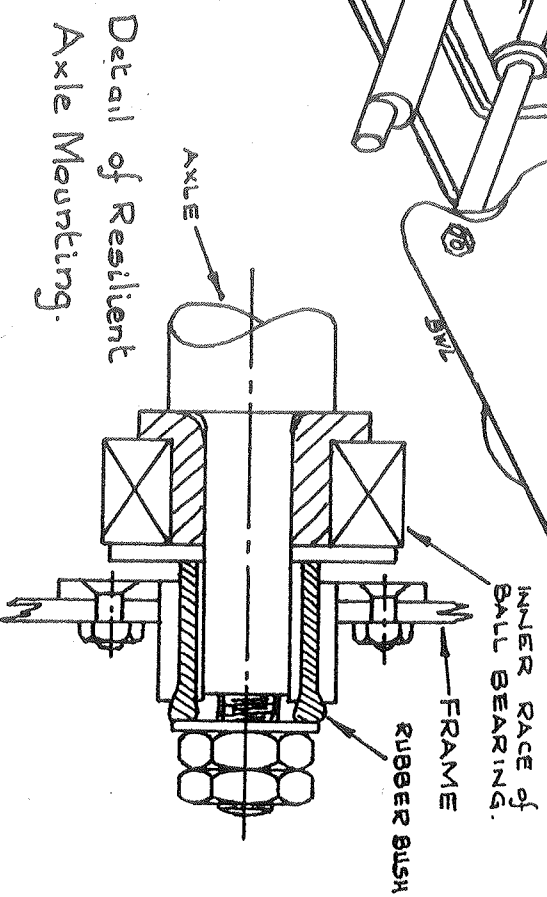
A great deal of both mental and physical effort has been used in the construction of these trucks, and it is hoped that their users will both appreciate this and take care of the vehicles, considering that the more gently they are used the longer they will last. Members using the trucks would do well to recall as they come quickly to a halt, the hairier moments during braking with the older trucks, when it was likely that the train would not stop in time, let alone in the right place!

Richard Linkins.

- A - Frame Stays (4).
 - B - Brake Shoe Guides (4).
 - C - Brake Cross Shaft with Eccentric Trunnions.
 - D - Brake Shoe Return Springs (4)
 - E - P.T.F.E. Load Bearing Plates.
 - F - Brake Shoe.
- Cross shaft return spring, one frame stay, and brake mechanism stop omitted for clarity.



5" GAUGE BOGIE for
Passenger Cars (Braked).



Photography

by

J. Ewins

A change of topic this time. I have been interested in photography since about the age of ten when I watched my father and brothers who were active in the art at that time. I well remember pestering my mother to buy me a box of quarter plates (size 4½" X 3 1/4") for use in a box "carbine" camera. This box of tricks held I think six plates in carriers which were propelled into position by pressing a knob which produced a resounding clang as the exposed plate fell out of the way and a fresh one came into position. The first photo I took with this contraption was of the Brighton line from a foot-bridge near Forest Hill station. I wish I still had this photo which came out quite well and I wish even more that I still had the camera! I suppose our family interest in photography sprang from one of my uncles who was a professional and took remarkable photos the quality of which I have yet to see better. It is a fact that many of these early photographers were able to produce work which bears favourable comparison with the best that can be produced today. One has only to look at photographs of locomotives taken towards the end of the last century and compare them with modern efforts to become aware of this. The main reason for the fine results of this by-gone era was the fact that large plates were used and usually contact printed. A common size was whole plate (8½" X 6½") but even plates as large as (12" X 15") were obtainable. Added to this the emulsions used to coat the plates were very insensitive which meant that grain size was so small that it was not a term in the photographic vocabulary. Large format cameras are still made and used for specialised technical and architectural work, but now cut film is used instead of plates.

Improvements in photographic emulsions and lenses have together made it possible to produce high quality work with much smaller format size but it will always be that with conventional photographic techniques the larger the format the greater the ability to resolve detail. Miniature cameras are very convenient in use but they have their limitations. One of these is brought about by the fact that they have lenses held in such a way that they can only be moved in a direction perpendicular to the film plane for the purpose of focussing, whereas large format cameras usually have various "movements" which allow the plate and lens to be tilted at various angles so as for instance to correct for converging perpendiculars when a tall building is photographed from ground level. If such a photograph is attempted with a miniature camera the parallel sides of a steeple will converge towards the top. This is in fact exactly what the eye sees but in photography and art generally this is not acceptable (or it wasn't in my uncle's day). Now however we are being conditioned to accept converging perpendiculars because it is not possible easily to avoid them with modern equipment. Another advantage of these movements is the facility of obtaining good focussing of objects like locos when these are taken in 3/4 view in which there is considerable difference in the distance of the nearer and farther parts from the camera. With miniature cameras this effect cannot be compensated for and reliance has to be placed on the greater depth of field provided by their small format, an effect which I shall mention later. For many years I averred that 2 1/4" square was the smallest format which produced acceptable results in terms of resolution (the ability to reproduce detail).

As time has gone on the gap in performance between this format and the 35mm size has narrowed to the point where there is now little to choose between them, what the 35mm loses in sharpness is to some extent offset by greater depth of field. When we as model engineers try to make an assessment of different cameras we have to distinguish between two uses we might call upon the camera to perform. On the one hand we need to take what might be described as "social" photographs such as portraits and groups or views taken on holiday and on the other the need to record fine detail in models and prototypes. For the first purpose fineness of detail is not too important provided the results are not obviously fuzzy, whereas for the second use the sharper the definition the greater will be the information captured. For social photography the 35mm size or even smaller is now-a-days adequate but for the more serious business larger format still yields better results provided the camera is held on a solid stand. To explain this this last statement it is necessary to introduce the technical concept of "depth of field".

Depth of Field

When a lens focuses objects onto the surface of the film the image is only at maximum sharpness for those objects which are at a precise distance from the camera as determined by the position of the lens from the film. When we focus a camera we pick an object or part of an object and adjust the lens position until we judge there to be optimum sharpness for this part. Objects nearer or farther from the camera are less well focused depending on how far they are away from the focussed point or more technically the "focal plane". Now, due to fact that the human eye has its limitations, objects nearer or farther from the focal plane are within limits perceived to be perfectly sharp when in reality they are not. There is thus this latitude which is called depth of field. It can be shown that depth of field increases as the lens stop diameter decreases (larger 'f' number) and also that it increases as the image size decreases. This latter effect as intimated above places the small format cameras at an advantage, but it also induces misconceptions even among professional workers. One such notion is that enlargement of a negative has some bearing on depth of field. This is not the case. Enlargement is a artifice which enables one to view a photograph at a convenient distance. It is not practical for instance to view a photo from the correct distance of 50mm if it has been taken with a 50mm lens! One needs to enlarge some five or six times and view it from a comfortable distance of about a foot when the relative positions of the separate parts of the scene will be correctly perceived i.e. the perspective will be right. Having done this the depth of field criteria will be just as before which, using technical jargon, is explained by saying that the angular resolution remains unchanged. Another misconception in this matter arises when cameras with interchangeable lenses are used. It is thought that changing to a shorter focal length lens increases the depth of field. This is a misleading idea and stems from the fact that the shorter focal length lens throws a smaller image onto the film and this would yield greater depth were it not for the fact that in order to fill the format the camera has to be moved nearer to the subject whereupon the depth of field would be as before albeit with a changed perspective. The true situation is that if one considers two identical photographs taken on a large and small format respectively, the larger format will have needed a larger focal length lens to fill this format with a resulting smaller depth of field. It is therefore the format size which governs the depth of field.

Earlier I mentioned that large format cameras need to be held rigidly to obtain the full benefit of the larger size. This is because the reduced depth of field associated with the larger image size has to be compensated for by reducing the diameter of the lens stop i.e. using a greater 'f' number. This in turn demands longer exposure necessitating a more solidly held camera.

Lenses

I am sure that many people are inveigled into buying a variety of lenses without understanding why or indeed if they need them. When photography was first being developed it was soon realised that the positioning of the camera in relation to the subject determined the perspective of the result. If the camera were too close parallel lines converged too sharply giving an unnatural, some would say distorted view, in which circular objects like locomotive wheels appeared bulged out at the front. If the camera were placed too far away the result was uninterestingly flat. It was soon realised that using a lens of focal length about equal to the diagonal of the plate and then placing the camera so as to fill the format with the desired view gave a very satisfactory compromise. And so to this day "normal" lenses are 50mm for 35mm format and 75mm for 2 1/4" square. Why then do we ever need lenses of different lengths than these? The reason for this is that either deliberately or by force of circumstance the camera has to be placed in a position where the object if it were photographed with a normal lens would either not fill the format or be so large that some of it would not be recorded. Extreme examples of this are (a) the use of a telephoto lens and (b) a short focus so called wide angle lens. In the case of the telephoto lens the requirement is to record a distant object which would with a normal lens give a result too small to be of any use. The telephoto lens serves as a telescope magnifying the image to fill the format. With the short focus lens which does not magnify so much the camera may be placed close to the object taking in a wider angle of view and for this reason such lenses are usually called wide angle which indicates that apart from being short focus they have their components computed to cover to the extremities of the format without loss of quality. A point to be noted is that no matter what type of lens is used the picture recorded for a given position of the camera will be the same except that more or less of it will be captured depending upon the lens used. If a distant scene were taken with first a telephoto lens and then with a normal one and after suitable enlargement of the latter result it was superimposed upon the former and the two would fit exactly. Users of zoom lenses should note this result. In this connection the following will indicate how even professional workers do not understand this situation. Some time ago there was a series on the television in which various professional photographers were studied going about their work. In one episode the professional had his camera located on a bridge over a stream whilst his subject was reclining on the far bank. At one stage the photographer said he needed to change the lens to improve the perspective. In fact the subject was too far away to fill the format he was using and he needed a longer lens to do this the perspective would not have been altered. Professionals take better photographs than we amateurs because they do so much of it and waste a lot of film to obtain a single result. Their technical knowledge is usually pretty scanty and they achieve good results without really understanding why.

Exposure

A problem which used to bother both amateur and professional alike was that associated with giving the best exposure. Now-a-days cameras of even modest cost are provided with sophisticated T.T.L. measuring to the extent that it takes a considerable amount of ingenuity to produce a poorly exposed result. Having said that it amuses me to see the professional boys prancing around with incident light meters knowing full well that they are going to take a number of exposures of different values and pick the best. A T.T.L. meter is just as likely to be near the optimum as anything they can obtain with an incident light meter.

Exposure becomes more of a problem these days when flash is used. Computerised flash guns do not seem to be able to cope very well with the unusual surroundings one encounters at exhibitions for instance and the result is usually a

'splodge' of light with surrounding shady areas and blatant high lights. In former times when I was active at Model Engineer Exhibitions I got over this problem by placing an auxillary shutter in front of the camera lens. When this shutter was momentarily opened the flash was set off. In use I held the camera on a firm stand setting the main shutter on 'time' with the lens at such a small aperture that the effect of the ambient lighting was insignificant. Using my Vivitar 283 gun with a bouncing card I found that five or six exposures with the gun in various positions provided a satisfactory spread of light. When photographing locomotives the problem is usually to get enough light down under to show up the motion work. When taking full size engines it is best to get up early when the sun is low or wait until the evening otherwise one gets harsh highlights along the top of the boiler with the wheels and motion in darkness. For models the problem can be solved very satisfactorily by using the technique of "fill in flash" in which a flash exposure is added to the ambient lighting. The flash gun is held low down and given an exposure which would tend to under expose if used on its own. The exposure component due to the ambient light should be as normal and adjusted by the duration of the exposure whilst the flash component is adjusted by the stop used. This is particularly convenient with a camera providing aperture priority but unfortunately such cameras use focal plane shutters which limits the exposure duration to a minimum of about 100th sec. in most cases, otherwise the full frame is not exposed to the flash. I find my Mamiya 2 1/4" square particularly suitable for this sort of work for although it has interchangeable lenses the shutters are between the lens components.

I have used my camera a lot to obtain detailed information from full size engines and find that for this purpose a 35mm camera using 100 A.S.A. black and white film and a wide angle lens is very satisfactory. A lot of the shots have to be under poor lighting conditions particularly those from underneath and between the frames making it necessary to use flash. A gun having a flash factor of 100 will be found to give satisfactory exposure even when the lens is stopped right down and under these conditions and with the 35mm format an acceptable depth of field is obtained. Many of the shots I take I do not even bother to print but just view the negatives with a watchmaker's glass. If one makes enlargements for use in the workshop there is no need to fuss around masking and trimming just print all the negative so as not to miss anything. As for putting these photos in an album as a recent writer in the Model Engineer does seems to me to be making hard work to no purpose. This same writer closes his workshop during the winter months- what a waste of good model engineering time!

+++++
HAVE YOU PAID YOUR SUBSCRIPTION YET? If not it is now overdue and this is your final reminder.

Unless the Treasurer receives your monies within the next fourteen days this will be the last communication you will receive from the society. Chasing subs is time consuming and costly. Please tear off the slip below and send to Peter Roots as soon as possible.

 I enclose herewith the sum of £..... (£5 per person or £2-50 for retired members) which is my subscription to Maidstone Model Engineering Society for 1986.

.....
 name date
 address.....

+++++

Hallo One and All,

Welcome to the 1986 Spring Edition of the Newsletter. Did you all have a nice Christmas? It seems a long time ago now. The 1985 Boxing Day Run was a disaster! This was because there wasn't one! What with all the torrential rain, the lake flooded the road in Mote Park making it very difficult to get to the track and Clubhouse unless you, your car and engine were fitted with water wings. A few intrepid souls who did make it that morning watched the downpour for a while and then decided that discretion was better than wet valour and made a hasty retreat homewards before lunch. George Barlow took the first club night of the new year showing slides of the 1985 steam scene in Britain. February was the coldest month for many years but despite the snow early in the month Ray Milliken made it to the evening meeting with the entertaining tale of his trip to Japan in 1977. The Annual General Meeting was held in early March and the Clubhouse was packed to near capacity with about fifty people attending. Next year it will be held at another venue (preferably a pub!). There was a question asked about the Club not doing a Charity Run during 1985, and I have been asked to advise that we did in fact have one during the year as we ran one Saturday afternoon in aid of the National Childbirth Trust, who as well as having rides also took charge of the ticket office and collected the monies in aid of their charity. There is at present no intention to hold a charity run on Sunday June 8th which is Maidstone Marathon Day. Rides will be as usual.

Easter is almost here and we commence the season Easter Sunday and Monday. Do not forget to alter your clocks on the Saturday night! The meeting on Friday April 4th (I do apologise for putting the date incorrectly as the 5th in the Christmas newsletter) is a Video Evening and we will be showing the David Shepherd Film that we tried to show after the A.G.M. but the number of bodies and decibel level prevented those watching from enjoying the show. There will also be another short video to fill the time and the usual refreshments to reach the parts others don't. Malden Open Day and Welling Open day are both later in April. For details of visits arranged please see our Hon. Sec. Martin for details. Friday May 2nd is a night of Odds and Ends, so you may bring and show us what you are constructing, discuss any problems, sell any bits you do not want, have a good chat, in fact an evening to do whatever takes your fancy. Romney Marsh Open Day is on the same day as our trip on the Wealden Pullman, I will communicate with the dining participants later. The following Saturday May 24th, Sutton Club are coming to visit us so I hope you will come and see them as they usually bring good weather and we hold a barbecue - which is what we will also be doing Friday June 6, when the first night run of the summer is planned. Harrow Open Weekend follows and Welling are holding a Traction Engine Day on Sunday June 22nd. The Club has arranged a visit to Bill Hart's 5" gauge ground level track at Five Oaks Green near East Peckham on Saturday June 28th - again Martin will have the details for those interested in having a run or just coming along. Please come along Friday July 4th and help us prepare for the Club's Big Event, the Open Day on Saturday July 5th. Unfortunately it clashes with IMLEC this year and the Malden Open Weekend but I hope a lot of people will still come to Maidstone. All assistance, assistants and exhibits will be most welcome so that we can make our day the best. On Saturday August 30th Sutton have invited us to their track for a run and barbecue and Welling have another Open Day on Saturday September 6th. The happenings for the Club Evenings after July have yet to be arranged but do remember there is always something going on the first Friday night of each month.

There is still a short length of guard rail that requires attention from a paint brush, so just a couple more volunteers please and the job will be finished.

For those who bring the much needed victuals (i.e. milk and cakes) please see me when you do as I am also catering officer.

The next newsletter is due in June so PLEASE may I have some articles by my birthday (there's a veiled hint if ever there was one!) being the beginning of the month. Ladies, why not, one from you? I also wish to prod a couple of our members if I say where are "My Travels Down Under" and "Rail Journeys Across Britain". Come on lads, don't let me down!

Best wishes to you all,
— Sue

X

MAIDSTONE MODEL ENGINEERING SOCIETY OFFICERS 1986

President A.H.W. Payne Esq (Jack), 38 Oxford Road, Maidstone, Kent. ME15 8DJ.
Maidstone 57545.

Chairman G. Kimber Esq (Graham), 4 The Stream, Ditton, Maidstone, Kent.
West Malling 845931.

Vice Chairman P.J.A. Chislett Esq. (Peter), 30 Manor Rise, Bearsted, Maidstone, Kent.
ME14 4DB. Maidstone 37407.

Secretary M.N. Parham Esq. (Martin), Bramleys, Old Loose Hill, Loose,
Maidstone, Kent. ME15 0BS. Maidstone 44175.

Treasurer P.A. Roots Esq. (Pete), 97 Tonbridge Road, Maidstone, Kent. ME16 8JN.
Maidstone 58599.

Press Officer Mrs S. Gurr (Sue), 28 Claremont Road, Vinters Park Estate, Maidstone,
Kent. ME14 5LZ. Maidstone 678903.

Committee

Norman Clark, Adrian Gurr, Don Paterson, Geoff Riddles, Robin Spencer
and Chris Williams.

~~~~~

+++++OBITUARIES+++++

The Club is sad to announce the loss of one of its Vice Presidents, Mrs E Wright , and one of its Associate Members, Mrs N Braine. Our condolences to their families.

+++++

[illegible]

March 30th: J Payne. March 31st: A Gurr.

April 6th: R Spencer. April 13th: P Ashby. April 20th: P Chislett. April 27th: N Clark.

May 4th: G Evans. May 5th: G Riddles. May 11th: P Kingsford. May 18th: D Arnold  
(Mr). May 25th: P Clark. May 26th: R Broadbent.

June 1st: T Friskin. June 8th: P Jackson. June 15th: G Kimber. June 22nd: N King.  
June 29th: E Knott.

July 6th: F Deepprose. July 13th: K Linkins. July 20th: L Hulbert. July 27th: R Stagg.

August 3rd: R Vane. August 10th: J Winsor. August 17th: S Ludford. August 24th: D Paterson. August 25th: P Martin. August 31st: M Knott.

September 7th: P Neilson. September 14th: N Nicholls. September 21st: D Osbaldstone.  
September 28th: A Tate.

October 5th: T Stamp. October 12th: R Crane. October 19th: R Milliken.

\*\*\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*\*\*

Douglas Arnold of Rochester, retired government scientist, interested in steam and diesel engines.

\*\*\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*NEW MEMBERS\*\*\*