

SOUTHERN FEDERATION NEWS



MARCH 2007



Photo: Mike Leahy

ABOVE: Seen earlier this year, on the Tonbridge MES stand at the London Model Engineering Exhibition, Alexandra Palace, is at first glance what appears to be a Southern Railway, River Class 2-6-4T but is in fact a stretched Super Simplex much modified, particularly above the running boards. Completed in 2006, the locomotive is owned by Chris MacDonald, the locomotive being built by Tony Broad, Welling & District MES.

BELOW: Exhibited at Brighton ModelWorld 07 was this half-scale 1903 'Preston' type, four wheel open-top tramcar. Built for two foot gauge, the car operates at 48 volts DC, is powered by two 2.25hp ex-forklift truck motors, and carries eight passengers on each deck plus the motorman and conductor.



Photo: Mike Leahy

FRONT COVER: This fine model of a 5" gauge 4-4-2T Adams Radial Tank locomotive was built by Peter Fagg and exhibited on the Brighton & Hove SMLE stand at Brighton ModelWorld 07

Photo: Mike Leahy

SOUTHERN FEDERATION NEWS



March
2007

Editor
MIKE LEAHY

Views and comments expressed in this publication are not necessarily those of the Southern Federation of Model Engineering Societies

EDITORIAL

A YEAR HAS PAST since the introduction of the new Boiler Test Code. No doubt it took a while for boiler inspectors to get used to the new paperwork but, now that the dust has settled, feedback shows that the revised Test Code has been well accepted; that is excepting some difficulties with small boilers. To overcome these problems a revision to the Test Code has been made and the revised text is published in these pages.

Once again your Editor makes a plea for club magazines and journals to be sent to him, for it is from their pages that the bulk of the content of this magazine is gleaned. For some reason some clubs that previously sent in their journals have stopped doing so – is it something I have said? Some say that their newsletter doesn't feature in these pages - perhaps it's because the newsletter contains nothing but parish notices or reaches this desk at a time such that the delay between receipt and the publication of the next edition of this journal means the events they advertise have passed. A few clubs have started to produce e-mailed versions of their newsletter, and this can be a problem if the files are on the large side and the recipient doesn't have access to broadband (your Editor is one of these, as I am on the extremities of the lines from my exchange and the very small gain in download speed is not worth the extra cost). However, please don't let that stop you sending me your electronic version!

Here's hoping that the forthcoming running season goes well for you all.

Mike Leahy
February 2007

Items for inclusion in the June 2007
edition should be sent to the Editor
by
30th APRIL 2007



From the Chairman

Welcome to another rendition of 'From the Chairman' written a few days after the Alexandra Palace exhibition; it was a pleasure to meet up with so many of our friends whether it was just a hello, goodbye or a longer chat on topics of a mutual interest. Once again we had the pleasure of Barry Glover, President of the Australian Association of Live Steamers, over the weekend.

The exhibition itself was well supported, as ever, throughout all three days, and Meridienne Exhibitions deserve a 'pat on the back' for a well-organised event at an interesting and historical venue. There were plenty of exhibits to be admired, in a whole range of disciplines that caught the eye.

Within a few days of you receiving this edition of our newsletter, another Annual General Meeting will be upon us, as ever at a very prestigious venue. This is a very important meeting in the Federations calendar; I look forward to meeting as many of you that can make the journey.

The Federation's sales stand will be in attendance, and in addition will be supporting the following events before the next newsletter is due in June, so watch this space, for all your needs.

Milestones (Basingstoke) Exhibition April 21/22 - New Event

Harrogate Exhibition May 11/12/13.

Federation Spring Rally – Oswestry May 19.

Brian Thompson

SOUTHERN FEDERATION

AGM

10th March 2007

2.00pm

COVENTRY TRANSPORT MUSEUM

MILLENNIUM PLACE

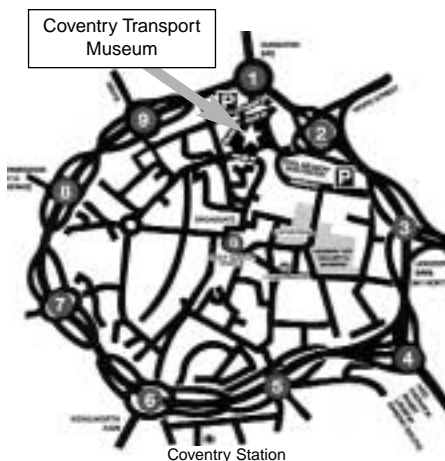
HALES STREET

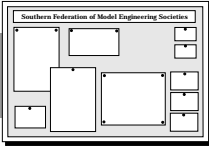
COVENTRY

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Free Admission

Parking in adjacent Public Car Parks





NOTICE BOARD

As you may be aware, a number of problems have arisen with regard to the testing of small boilers under the code for *The Examination & Testing of Miniature Steam Boilers (New Edition 2006)*. Because of the confined space in small model locomotives and boats it is almost impossible to include two independent means of water feed arrangement. To resolve this issue a revision to the Test Code has been agreed. As you will see the minimum bar-litre exemption level has also been increased. It is proposed that an addendum sheet will be printed and distributed to all those wanting a copy.

REVISION TO BOILER TEST CODE WITH REGARD TO SMALL BOILERS

Introduction, Page 3, paragraph 4 Delete existing paragraph and replace with:

Small boilers (i.e boilers with a capacity of not more than 3.0 bar-litres) are exempted from the requirements of this code. However, it is recommended that small boilers be fitted with, at least, a safety valve and a pressure gauge and that these be tested every 12 months in order to ensure correct operation at the correct release pressure. The boiler and the pipework installation should also be checked at least every 12 months.

and also

Page 11, Section 10 Steam Test Delete the whole section and replace with:

10 Steam Test

10.1 An examination under steam pressure shall be undertaken, a) before first placing the boiler into service, b) after every hydraulic test, and c) at intervals not exceeding fourteen months.

10.2 The boiler shall be steamed and further examinations carried out as pressure is rising and whilst the boiler is at working pressure.

10.3 Correct operation of the following items shall be verified:

- Boiler water feeding arrangements by at least two independent means (hand pump, injectors, mechanical pump, etc.)
- Pressure gauge
- The water gauge(s) should be blown down and the water should be seen to recover to its level without delay

Continued overleaf

- 10.4 On boilers of less than 10 bar-litre capacity with a total internal volume not exceeding two (2) litres it is acknowledged that the provision of two independent means of water feed arrangement may not be possible. Therefore for the purpose of testing these boilers:
- a) One (1) means of water feed arrangement is acceptable.
 - b) Water in the gauge glass must recover its level without delay following movement of the boiler. Water gauges fitted to boats whose boilers fall within this size category do not have to be capable of being blown down.
 - c) The water gauge and pressure gauge should be clearly visible.
- 10.5 The boiler shall then be steamed at maximum firing rate and with full blower operation. The test shall be continued for sufficient time as to allow the Inspector to be satisfied that stable conditions have been attained. The operation of the safety valves shall be checked to ensure that they operate at working pressure and that pressure does not rise by more than 10% of the working pressure during safety valve operation

One of the requirements for those testing boilers under the Southern Federation auspices (and for that matter the other national organisations, eg, the Northern Association and the 7¹/₄" Gauge Society) is that a register is kept of all boilers tested.

On the bottom of each boiler certificate is a slip that should be filled in, with the relevant information, and returned to the Boiler Registrar. The system has now been up and running for over a year and there are some clubs/societies, known to hold boiler certificate pads, who have not yet made any returns. Is your club one of them? These clubs/societies will be pursued with regard to their tardiness during the next few weeks.

Additionally some clubs have retained their slips and forwarded them, just recently, as an annual batch. This has caused the Boiler Registrar to spend many late nights pounding away at the keyboard making entries in the database. Please send in your slips periodically, say every three months, so that the Boiler Registrar may continue to enjoy some time in his workshop!

SUBSCRIPTION SERVICE

Did you know that as an individual subscriber you can receive your own copy of *Southern Federation News*? The present subscription rate is UK - £7.50 (incl p&p) for four copies each year. Overseas - £11.50 in Sterling (incl airmail p&p).

To subscribe please send a cheque payable to SOUTHERN FEDERATION OF MES, together with details of your name and address to

The Membership Secretary

Mr J Walker, 23 Redwing Close, Stratford Upon Avon, Warks. CV37 9EX

SOUTHERN FEDERATION SPRING RALLY

at the

OSWESTRY MODEL ENGINEERING SOCIETY

OSWESTRY SHOWGROUND, PARK HALL

OSWESTRY, SHROPSHIRE

Saturday, 19th May 2007

Open Day - Sunday, 20th May

Light Refreshments available

BYO Barbecue and Evening Steam-up is planned for the Saturday evening

On site camping and caravan space available

Pre-booking for sites is essential

Contact: Glyn Davies Tel: 01691 650352

Continued from page 15

References

- (1) E.L. Ahrens. The British Steam Railway Locomotive from 1825 to 1925. p.6
- (2) J.J.G. Koopmans. The fire burns much better ... 200 years of steam locomotive exhaust research. 1804 – 2004. p.25
- (3) Ibid. p.37
- (4) Ibid. p.45
- (5) E.A. Phillipson. Steam Locomotive Design: Data and Formula. pp.180-181
- (6) Ibid. p.182
- (7) Ibid. (118) p.183
- (8) Ibid. (119) p.183
- (9) Locomotive Engineer's Pocket Book. 1931 p.308

A number of pages from the printed version of Southern Federation News, which is circulated to all clubs/societies affiliated to the Southern Federation of Model Engineering Societies, have been omitted from this electronic version as they contain information that is subject to the Data Protection Act.



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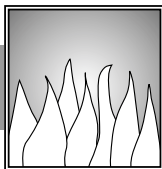
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THE DEVIL'S JOB

David Boughen continues his series of articles which first appeared in the *CRITERION*, the journal of High Wycombe Model Engineering Club, and is reproduced with their permission.

KEEPING THE FIRE ALIGHT

Part 4

Blast pipe and Smokebox Design

The previous three parts of this series have looked at the combustion process and the proportions of the ashpan, grate and firebox, which may be simply described as the 'burning' or 'hot' end of the locomotive boiler. In this part we need to look at the draught producing components, the blast pipe, chimney and smokebox, located at the other end of the boiler.

There has been much debate about who actually invented the blast pipe. In Trevithick's Penrydallen locomotive of 1804 the exhaust steam was discharged into the chimney. In a letter to David Giddy, later President of the Royal Society, dated 20th February 1804, Trevithick wrote "The fire burns much better when the steam goes up the chimney than what it do when the engine is idle ..." (1) (2). However, it is now generally accepted that it was Timothy Hackworth who invented the narrow orifice blast pipe, which we know today, to improve performance of the early Stephenson locomotives on the Stockton and Darlington Railway, where he was the Locomotive Superintendent (3). Robert Stephenson was well aware of Hackworth's work on the development of the blast pipe, and this was incorporated into the design of the *Rocket* for the Rainhill Trials on the Liverpool and Manchester Railway in October 1829. Timothy Hackworth's *Sans Pareil* was also fitted with a blast pipe. The ultimate success of the *Rocket* however, was due to a combination of three key factors, a separate firebox, a multi-tube boiler and double blast pipes in the chimney (4).

There is an old saying, which I am sure most of you are familiar with, "Nature abhors a vacuum", but creating a vacuum is the function of the blast pipe and smokebox. The exhaust steam discharging at high velocity from the blast pipe displaces a portion of the hot gases in the smokebox which induces a partial vacuum. as a consequence of atmospheric pressure air is forced through the ashpan and passes through the firebed and boiler tubes in an attempt to fill the vacuum in the smokebox.

There should be no abrupt changes either of form or in direction of the exhaust steam passages, which must be as direct and free from bends as possible. The combining point of the exhausts from the individual cylinders must be as low as possible, and the angle of convergence as small as possible. It is also important that the combining point is vertically below the centre of the blast orifice, which in turn must be located centrally below the chimney.

The area of entrainment, i.e. the surface of the exhaust steam jet presented to the smokebox gases for the purpose of eduction, should be as large as possible. This is usually achieved by increasing the distance of the orifice below the centre line of the smokebox, which increases the mean draught obtainable from a given orifice diameter.

This in turn reduces the range of fluctuations in the draught, and also equalises its effect over the whole of the surface of the front tubeplate. However, care needs to be taken to ensure that the orifice does not become blocked by ash collecting in the bottom of the smokebox. Under favourable conditions around 1% of weight of coal burnt in the firebox will be deposited as ash in the smokebox. As an example, if five tons of coal are burnt on the journey, around 112lbs. or 1 cwt., will be deposited in the smokebox, occupying a volume of around 4cu.ft (5).

A more even draught is also obtained by increasing the distance of the blast pipe from the front of the tubeplate towards the smokebox door, and this also reduces the tendency to spark throwing which is also affected by lowering the blast pipe nozzle.

The natural diametrel taper of the exhaust steam jet leaving the nozzle should not exceed 1 in 6, giving a subtended angle of $9^{\circ} 18'$. However, in many cases it can be 1 in 8, which gives an angle of $7^{\circ} 8'$, which is often taken as 8° (6).

The diameter of the blast pipe orifice for use with two cylinder simple engines, using superheated steam, can be calculated from the following formula: $A=0.25d$ (7) where

A = diameter of blast pipe orifice in ins.
 d = cylinder diameter in ins.

Thus for an engine with 18" diameter cylinders, using superheated steam, the blast pipe orifice diameter would be $4\frac{1}{2}"$. If the engine was designed to use saturated (wet) steam, the orifice diameter would need to be increased by $\frac{1}{8}"$ to $4\frac{5}{8}"$ to allow for the greater weight (mass) of steam discharged in a given time. Using a constant of 0.267 in the above formula is often preferred, and this would give a blast pipe orifice nozzle diameter of $4\frac{3}{4}"$ for superheated steam, and $4\frac{7}{8}"$ for saturated stem (8) (9).

Having looked at the blast pipe design for a simple two-cylinder engine, in the next part we look at the calculation for three- and four-cylinder engines, and some other options for calculating orifice sizes.



CLUB PROFILE

OSWESTRY MODEL ENGINEERING SOCIETY

The Society was formed in 1987 from members of a Model Engineering class at the North Shropshire College. Their late President, Robert Morris, who was a Mechanical Engineering lecturer at the College ran the class and many new members were encouraged to join the Society.

Within twelve months of establishing the Oswestry Model Engineering Society, the Society could be seen at many local events and were supporting as many charities as was possible with their portable track. As time went on the Society was looking for a permanent track and many locations were visited before construction began at the Oswestry Showground. Since then it must be said that the Society has not looked back and the co-operation and encouragement of the Show Committee has allowed the Society to continue to develop.

The Society has a dual 3½" and 5" gauge raised track, approximately a quarter of a mile long with some testing gradients for novice drivers.

This year the Society hosts the Southern Federation Spring Rally on Saturday 19th May 2007 and all are welcome to come along and join them at their site. For those that prefer road

vehicles an extensive paved area is available on this old army camp. On Sunday 20th May 2007, the track will be open to all, and publicity for the Open Day will be made to encourage members of the public to visit.

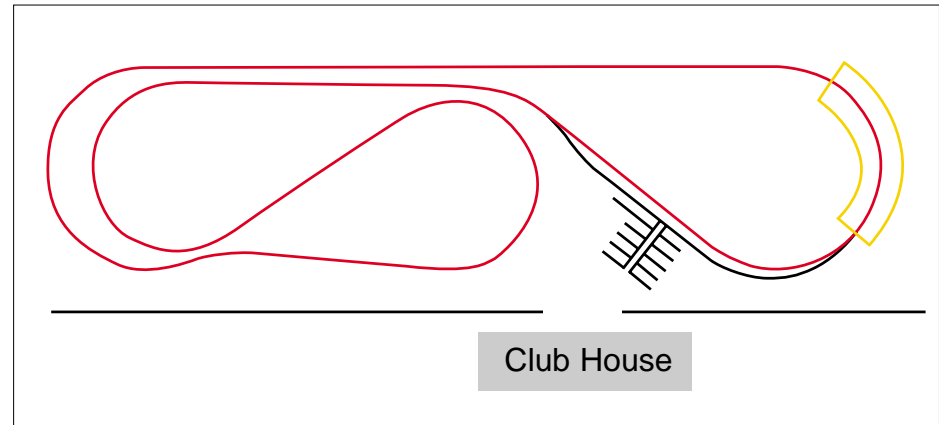
Oswestry, not uncommon to other Societies, holds dual affiliation and soon after this event, will be hosting the Northern Association's Narrow Gauge Locomotive Efficiency Trial. The first was held at Oswestry in 1998 and will now be returning for the tenth event on 25th/26th June 2007. If you are a narrow gauge buff come along as a competitor or a spectator. The load will be slate wagons, chain coupled with a maximum speed of 5 mile per hour.

Whilst on a visit to the Federation's rally why not stay and enjoy an evening amongst like-minded enthusiasts, with an evening run and BYO Barbecue.

On site Camping and Caravanning by prior arrangement with the organisers.

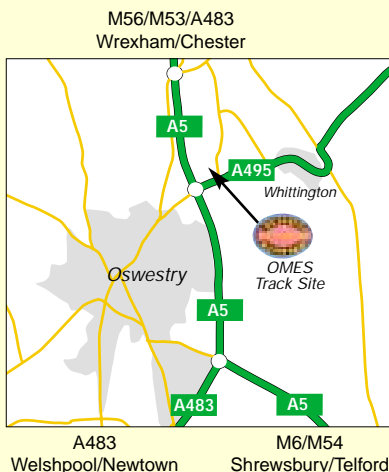
Contact Glyn Davies on 01691 650352 or via the Society's web site:

www.oswestry-mes.co.uk



OSWESTRY MODEL ENGINEERING SOCIETY

Location of premises	Oswestry Showground, Park Hall, Oswestry, Shropshire
Permanent Track	Yes
Elevated/Ground Level	Elevated
Length of Track/Gauges	1,350 feet, 3 1/2" and 5
Maximum Gradient	1 in 100
Minimum Radius	35 feet
Voltage available	6V and 12V
Public/Private ground	Private
Parking/Distance	Yes – adjacent
Public Running	Yes – Saturdays and Sundays
Track	Steel
Guard Rail fitted	No
Width over Guard Rail	–
Min Ground Clearance	10 inches
Trolleys for Visitors	Yes
Distance from London	200 miles
Website	www.oswestry-mes.co.uk
Club Secretary	Mr Glyn Davies Tel: Oswestry (01691) 650352



DIRECTIONS

From the Midlands, South and Southwest: M6/M54 and A5 to Oswestry

From South and West Wales: A483 and A5 to Oswestry

From the North: M56/M53/A483 and A5 to Oswestry

Then take A495 towards Whittington and take first left to the Oswestry Showground

AROUND THE CLUBS

Much of the content of this section of the magazine is gleaned from the various club newsletters, journals, e-mail magazines, etc, submitted to the Federation. Not all clubs have a magazine but that shouldn't stop you from letting others know about your activities. Reports from clubs are most welcomed. Please submit your article or magazine to the Editor.

NATIONAL CLUBS

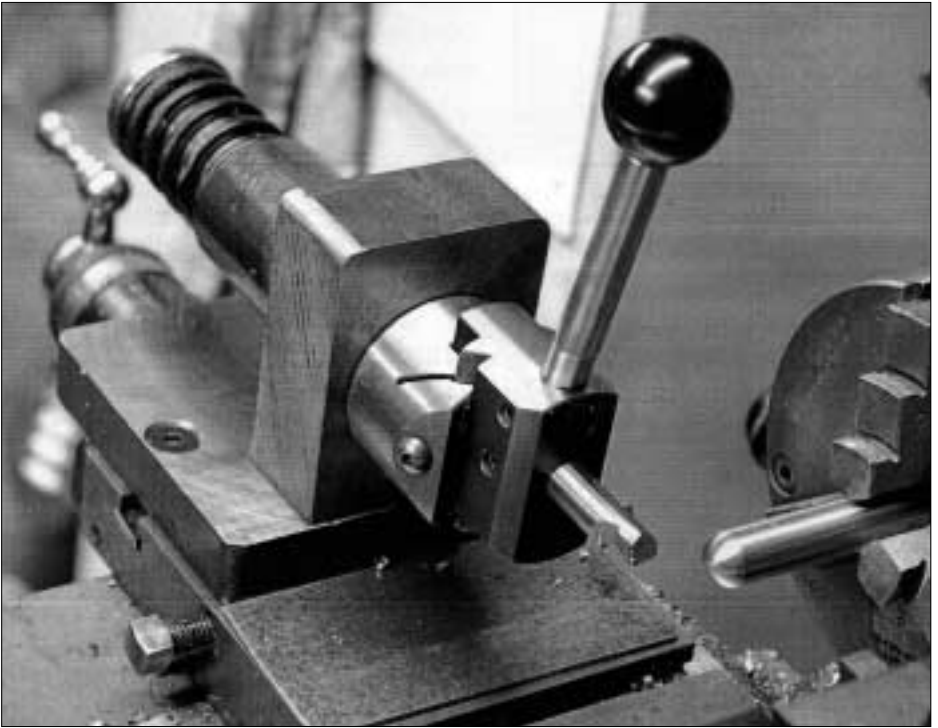


The magazine of the **Model Steam Road Vehicle Society** seems to be going from strength to strength and the number of issues is to be increased from four to six per year. Enclosed with the latest edition is a check sheet for Hazard Assessment at MSRVS rallies; limited to one side of an A4 sheet it contains a list of possible hazards that may be encountered on the rally field, their risk factor and consequence and simple controls to minimise the risk. All written in plain English and simple to follow, a similar exercise could be undertaken by other clubs/societies.

Elsewhere Eric Lindsey writes on how to register a steam road vehicle. There seems to be a belief that registering a miniature for road use is difficult. It isn't so long as you remember one or two important points -

- 1) You are dealing with civil servants who are sometimes very uncertain about the unusual: appear confident in the procedure and they will usually do what you want,
- 2) Decide if you will be happy with a 'Q' plate or if you want a year related number; if this is the case then you will have to prove

that the vehicle is 'new'. The DVLA doesn't recognise 'model' or 'miniature', it's just a 'steam vehicle'. Visit your local DVLA office and ask for a V55/4 form and complete it to the best of your knowledge; for fuel write 'coal', taxation class is 'steam vehicle', cylinder capacity write N/A, for engine number put your boiler number. Initial registration is about £35 and road tax is zero. If you want an age related plate you will have to prove you vehicle is new. They will send an inspector to examine the vehicle and to see 'evidence of newness'. Receipts for castings, boiler and other materials are essential here. You will eventually be issued with a registration number, a tax disc and a VIN number which has to be stamped on the chassis. They will send out another inspector to satisfy themselves that you have stamped the number correctly. Don't expect it to be quick and remember to think like a civil servant and tell them what they want to hear. This will ensure that they die of boredom before you die of frustration. *(Apologies to those civil servants amongst our fraternity - Ed)*



An Arrand Boring Head used as a Ball Turning Attachment. Pete Marker shows his effort at making such a tool; it is simple to use and gives good results. MSRVS Newsletter

The MSRVS 22nd Annual Rally will be held **23rd/24th June** at the usual venue in Tewkesbury. Details from Steve Orchard, Tel: 01453 546830. Although membership is predominately in the west of England the MSRVS committee reminds us that it is a national society and that it wishes to encourage a branch network nationwide.

The group involved with Gauge 1 activities within the **Society of Model and Experimental Engineers** report a recent very successful meeting when a section of the new track was set up and tried out. It is hoped the group will continue to expand and speakers on G1 topics are invited.

The Society's *Journal* reports on the recent re-issue of the *MEW* 'Engineering Plans Special', which is a list of plans available from the publishers, but without any articles or technical content. It was revealed that this was released as part of subscribers paid for copies, and, not as has previously been the case, as a free supplement. It is understood that the publishers have had a change of heart, and if you contact them they will increase your subscription copies by one. (The issue un-numbered went out between editions 120 and 121)

Future meetings at Marshall House include talks on Railway Braking for Model Engineers and Choosing the right CAD systems.

Writing in *Road 'n' Rail*, the magazine of the **Maxitrak Owners Club**, Bill Reynolds relates his experiences of building a ground level 'ride-on-railway'. Initially, convincing the wife that only a 20 x 20 feet area would be needed it has expanded to a 50 x 22 feet area that permits continuous running. Assuring the wife that track laying is now complete a station building is

currently at the planning stage. Currently, three locomotives plus carriages make up the rolling stock and more locomotives are a possibility. Bill concludes by saying, "just two years ago ride-on-railways were just something that one would consider being in other people's gardens or on country estates. Now I know differently".

SCOTLAND



A 'Midsummer Night Steam Up and Bar-B-Q' from 12.00 hrs Saturday through to 17.00 hrs Sunday, **23rd/24th June** is on offer at the **Eskvalley MES** tracksite at Vogrie Country Park, Dalkeith, Midlothian, between the A7 and the A68 about seven miles south of Edinburgh. No doubt as such northerly

latitudes, at that time of the year, it will probably not become fully dark overnight. Caravan and camping facilities are available within a 100 metres of the track and all are welcome. Minimum radius of the triple gauge track (3½", 5" & 7¼") track is 43ft. For further details, contact Brian Hird, Tel: 0131 660 3898

NORTH OF ENGLAND

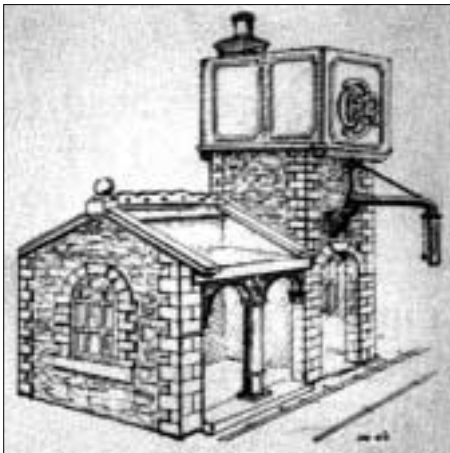


Ruminating in *Leedslines*, the newsletter of **Leeds SMEE**, the Society's Chairman, John Hunt compares their track, a purely 'a bring your loco and drive it track', with that of another club where, because of the tenure of the site, it is geared up for public passenger hauling. The Leeds track is

not built for ease of driving or robustness but for pure pleasure, it is purely functional, safety orientated and labour saving and the locos, in the majority of cases, are accurate scale models. Whereas at the other tracksite the station is very ornate with gates to control the passengers, a tunnel and a bridge

over a valley are there to give appeal to the public and the locomotive stock also reflects the need for continuous reliable passenger hauling. Battery powered locos can be drafted in at a moments notice should any problems arise and the steam locos seem to be of 'unburstable' practical designs. This is in no way meant to be a criticism of either Society but purely reflects that we tend choose our preference of driving conditions and, indirectly, build locos to suit. Whatever, our hobby is a very diverse one and is there to be enjoyed. The Leeds SMEE August Rally is **11th/12th August**.

Members of the **Beamish ME Group** continue to add to the infrastructure of their site and recently the kitchen extension was completed. The increased space allows them to provide hospitality to visitors and lunch and tea times give ample opportunity for reminiscence. Mechanical



*Water Tower project drawing by Jimmy Mountjoy.
Signal - Beamish MEG*

topics or past working practices, now largely illegal, are discussed and reputations are brought out and burnished or destroyed as appropriate. Work has recently started on a

NORTHERN BRIEFS

Work continues apace on the new ground level track at **Tyneside SMEE** with over half the trenching now completed.

TSMEE Spring Rally, **19th/20th May** and the Late Summer Rally, **1st/2nd September**.

City of Sunderland MES now have a web site. It is still being developed, so please be patient - www.csmes.co.uk.

Open Days - **17th June** and **9th September**.

Attendance at meetings has increased over the past year at **York City & District SME** with an average of 51 members being present (approximately 35% of the membership).

water tower for engines steaming near the engine shed.

The **Stockholes Farm MRS** is renown for the encouragement it gives to its Junior Members and the Editorial of its recent *Newsletter* comments on a recent study that has found that youngsters who associate with people of different age groups are better behaved and have a better outlook on life. It then goes on to comment about the tendency for magazines not to publish photographs with children in the picture; a shortsighted view in its opinion. When the *Stockholes Farm Newsletter* is handed out the first thing the juniors do is to see how many times their photograph has appeared. What is wrong with showing the juniors enjoying themselves? It can only encourage them. It then questions if we will soon find ourselves prevented from taking photographs of a locomotive or a place if a child happens to be in the frame? While acknowledging the need for the Child Protection Act it questions if we sometimes go a step too far; if the trend continues we

are in for sad times ahead.
 Stockholes Farm MRS Open Days are
 Easter, May Day, Spring and August Bank

Holiday Mondays, **9th April, 7th May,**
28th May and **27th August** and their Rally
 Weekend is **30th June/1st July.**



This photograph, taken by his father Roger Sully, shows a safety conscious son Rhys with goggles driving his father's superb 7 1/4" A4 Mallard at last year's Stockholes Farm Rally

Photo Roger Sully

THE MIDLANDS & EASTERN COUNTIES



While one view with regard to photography of children is outlined above, the **Kings Lynn & District SME** has adopted the opposite stance and does not permit the taking of pictures of children and from this year will request parents and guardians that have rides on the railway not to take any pictures that include other people's children. Arrangements can be made to take pictures of their childrens at

the station after they have had their ride. *(Your Editor has no particular axe to grind on the topic but reports these two polarised opinions in the hope that it might encourage further debate).*

At a recent committee meeting of **A Peterborough SME** it was voiced that there was likely to be a large proportion of the society's members who were unable to

put a name to a face (or vice versa) when identifying the committee. To assist members a 'Rogues Gallery' by way of a couple of pages of photographs of committee members was published in the *Club Chat*. The society's annual loco rally will be held **9th/10th June** and their Sacrewell Traction Engine Rally will be on **21st/22nd July**.

Chesterfield & District MES is celebrating its 75th Anniversary with the opening of the ground level track woodland extension on **21st July** at their Hady Hill tracksite. The track now has some 20 feet in height difference from top to bottom, through mature woodland with a diamond crossing, viaduct, tunnel, bridges, and many sets of points. In addition they will be having Open Weekends, **19th/20th May** and **1st/2nd September**.

Public running for 2006 ended somewhat abruptly when heavy rain brought operations to halt on Sunday, 22nd October at **Norwich & District SME**. Having had their new ground level track in operation for the season it was time to reflect on the great success of the railway; not to be judged solely in financial terms but perhaps even more in the amenity value to enhance Eaton Park. Those who have become regular passengers on the railway, returning week after week, are evidence that the Society's activities have been appreciated. Construction of a new loop has been agreed, which along with the building of station canopies will keep the members busy for the months ahead.

An EGM at **Northampton SME** was well attended and produced some lively debate on the two propositions. Most of the

debate was centred around timescale and how far into the future plans should stretch. The development proposition was finally amended to include an aim to reduce the development timescale to less than 10 years, if possible. Some development activities have already begun. A site survey is being undertaken to establish exact site dimensions, levels and location of tracks and trees. This will be used to plot the revised track layout and be used as the document to be put to the Borough Council for planning approval. Hopefully approval will have been attained by the Spring of 2007. Those of you who have been down to their site recently could not fail to notice the excellent progress that has been made by the Tuesday slash and burn team. Brambles, nettles and dead wood have all been cleared at the bottom of the site enabling all to see the potential for the future.

Avon Vale MES are frequently asked exactly where the Club is situated, as its title is not very specific. The Avon Vale running track is at Hilliers, Dunnington, Warwickshire, just off the B4088 and about 2 miles south of Ragley Hall near Alcester. For those with computers and/or SatNavs, the postcode is B49 5PD but please remember there is no postal facility for the Club at the running track.

During the winter period the club members have been busy constructing more passenger trolleys and a new carriage shed in which to house them. A new turntable for heavier engines has just been completed along with upgrading the power supply for the signals.

The Society's Gala Weekend is **12th/13th May**.

LONDON & THE SOUTH EAST



Owing to building work due to take place at the Kingfisher Country Club, the **Milton Keynes MES** has vacated this site and is now operating at the Caldecotte Park, Bletcham Way, Milton Keynes. At the present time they only have a portable ground level track in place, on which they have been running on Sundays, but by early January a start should have been made on constructing a raised 3½" and 5" track of 200+ metres in length, which will hopefully be completed by September. Once the raised track is up and running it is proposed to draw up plans for a 5" and 7¼" ground level track.

Last year **Southampton SME** had to abandon plans for their annual Open Days as they were unable to be sure of having any track to run on due to water mains work in Riverside Park. Had the pipes been situated where they were drawn

on the plans it would have dissected the track in four places. As it was, excavations were at least 20 feet away from the supposed position and the contractors contrived to move a valve box so as not to affect the track area at all. Although the work was completed on time it prevented the club from announcing to visitors that they were up and running as usual. So having had a break from them for a year they invite you once more to return to their site for an Open Weekend 14th/15th April. Apart from the 3½"/5" raised and 7¼" ground level tracks, a continuous run of approximately two miles, on tarmac'd paths, is available for those wishing to bring a Traction Engine.

Three members of the Society also belong to The Mechanical Horse Club and last year took along their large scale models to the Giants of Steam event at the Bluebell Railway, in support of the TMHC stand.

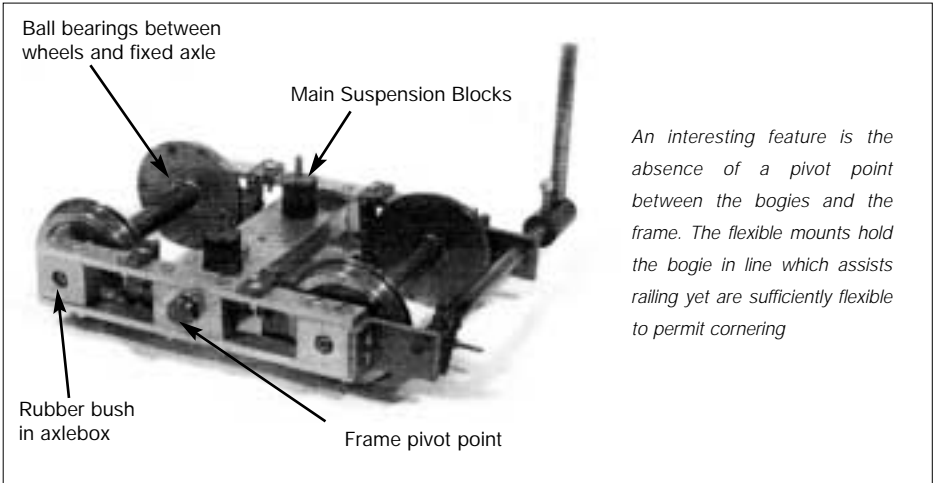


The three miniature Mechanical Horses pose in front of the trailer of a full-size version.

Photo Don Hoad

Writing in *Smokebox*, the annual newsletter of **Harlington LS**, Ralph Mainwaring describes an undertaking by several members who wanted to build trolleys for taking to 'away day events'. A modified Peter Hissey design with rubber

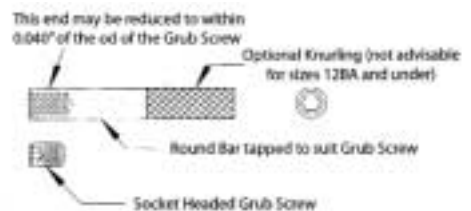
Faced with being unable to obtain socket spanners for the very small BA sizes Pedr Goch, writing in the *Ashpan*, the Society's journal, describes making his own using hex socket grub screws. Generally, small BA fixings are the following sizes:



suspension was chosen. The bogie frame is made of dural with rubber in the axleboxes and centre bearing. the wheels have ball races on their fixed axles. Trolley frames are made from 40x40mm angle and are made to a length of between 3ft and 4ft; the front bogie is braked and the rear one unbraked making it perfectly adequate as a personal driving trolley with perhaps one passenger. Visiting Clubs Day at the Society's tracksite is **June 16th**.

A slightly unusual project was carried out by members of the **Ickenham & District SME** when they manufactured a number of Christmas Tree holders. The holders were fixed over local shop facias and to the front of buildings to support both trees and festive lights for the biennial Ickenham Festival, just prior to Christmas last year.

14BA 2mm AF, 12BA 2.5mm AF, 10BA 3mm AF although this can vary depending on the manufacturers source of material. The grub screws he used were for 10BA - 1/4"BSF, 12BA - 3/16"BSF and 14BA - 2BA. To make the socket spanner, drill and tap a hole, to suit the grub screw, in the end of a short piece of round bar, put some locking compound onto the grub screw and screw into the bar until flush with the end of the bar - that's all there is to it. The diagram is self explanatory.



BATTERIES

Those of you that use rechargeable batteries for one thing or another are probably aware that Nickel Cadmium (NiCd) Cells are being phased out and from next year the manufacture of them will cease. In future, once the current stocks of NiCd batteries have been sold, only Nickel Metal Hydride Cells (NiMH) will be available. This is no bad thing as they are, although more expensive, a better battery. Because of this change some of the new battery chargers on sale are suitable only for NiMH Cells.

This is a reminder to take care when buying a new charger to make sure that it is suitable for your existing batteries, or if buying new batteries that your existing charger is suitable to charge them.

Peter Reynolds

ASHPAN

Ickenham & District SME

This year's Rally and Exhibition at **Guildford MES** will be held over the weekend of **21st/22nd July**. As it is the 40th rally it will be a Ruby Jubilee event. It is hoped that the event will be something of a celebration of past events and achievements. Apart from the usual birthday cake, it is proposed to put on a very special display of member's models in the exhibition. Hopefully, this and other ideas will highlight the fact that the Rally has been running for such a long time.

Having completed and opened the extension of their 10¹/₄" gauge track and with the rebuilding of Stopham Road Station almost complete **South Downs LRS** members are now looking to the future. With no fewer than four new narrow gauge steam locomotives in the

course of construction by/for various members there will be the need to improve and expand their workshop facilities and so they are tentatively exploring the possibility of a new loco shed and workshop.

Instead of the five day Steam Gala they have previously held it is intended for 2007 to spread events throughout the year. Apart from Mothers Day and Fathers Day Specials they will be holding a two day Steam Gala, **15th/16th September**, when everything that will run - will run!

*South Downs
Light Railway
track layout
at Pulborough*



So Balsa is a Hardwood? – Roger Curtis

As model engineers most of us know the differences in the properties, appearances and uses of various metals, but when it comes to timber it tends to be a different story. Most of us know that there are hardwoods and softwoods and many of us assume that this means if we press a thumbnail into a piece of softwood we will make a bigger dent than if we press into a piece of hardwood. This is often true but by no means always the case. Balsa which we all know is about as soft as any timber, is in fact a hardwood and yew which is very hard on the thumbnail test is a softwood.

There are over six hundred species of timber in common use, the majority of which are hardwood. Identification can be a problem but there is available a very clever punched card system that compares various visual traits but clearly this brief résumé is not the place to go into such detail. The hardness of a timber using the thumbnail test is largely, but not wholly, dependent on the density of the timber. Some timbers like balsa, obeche and western red cedar are very light indeed whilst at the other end of the scale timbers like greenheart, lignum-vitae and some boxwoods are so dense that they will not float in water.

Another misconception often heard about hardwoods and softwoods is that hardwoods are more durable than softwoods. Durability is the ability to stand up to the elements without rotting away or being eaten by bugs and may be measured on a scale of one to five, with five being the most durable. Oak is about halfway up the table. Beech, which is a hardwood, only scores one; it is a lovely timber to work, with a silky smooth finish from a plane. It is quite hard by the thumbnail test and if you bang a nail into it you will have quite a job to get it out but make a fence post out of it and it will probably fall down within a year.

On the other hand both Douglas fir and western red cedar, both of which are softwoods, are of a rare group that has a durability of five. Douglas fir is reasonably dense and hard on the thumbnail test but western red cedar can be almost as soft as balsa and is 'orrible stuff to work (it's a bit like trying to plane cotton wool) yet is the preferred timber for roofing shingles and when used for these will last many decades.

As a matter of interest, many timbers will last centuries if completely immersed in water with a low oxygen content, which is quite fortunate as many of our historic buildings are built upon elm piles driven below the water table and are still as good as the day they were put in.

So where does this get us? Well in the end when choosing timber for a particular application it pays to stick with tradition and experience. Ash is a lovely straight grained springy timber that is ideal for making wagons and tool handles and oak is a good strong and reliable structural material with grown crooks that can be very useful for curved elements of the structure. Apple is ideal for the teeth of cogwheels in water and windmills as it meshes well with the iron of the pinions. Beech is excellent for the framing of chairs and horse chestnut is the best timber from which to make milking pails as it is very white and does not taint the milk - but nobody makes them of timber these days, they use stainless steel.

Chestnut splits easily so is good for fencing, whereas elm has interlocking grain and is almost impossible to split so is ideal for chopping blocks. Elm is also one of the most attractive timbers and its loss from Dutch elm disease is very tragic. And finally if you want a new handle for your billhook then you can do no better than use ivy (which is a hardwood) as it will not slip out of your hand even when wet.

We tend to deal with the problem of tight track curves by using small engines, but there are options for providing a larger engine with some extra flexibility.

Writing in *The Oily Rag*, the journal of **The East Surrey 16mm Group**, David Pritchard is currently describing some of the articulated and geared engines seen during a recent trip to Java. In Java, the standard (if anything can be described as a standard) solution is the 0-8-0 tank (usually with a tender) with lateral motion devices on the outer axles. One such engine is an Orenstein & Koppel product with Klien-Linder axles. In the K-L system the crank axle runs inside a sleeve which carries the wheels. The axle is supported in the usual way in the axle boxes with the coupling rods on fly cranks outside the frames. The centre of the axle has a spherical boss which sits inside the sleeve carrying the wheels and transfers weight to the wheels; there is



sufficient clearance to allow angular and transitional movement between the sleeve and the axle, whilst the two are constrained to rotate together by gudgeon pins fixed to the centre sphere. The photograph shows a partly dismantled axle; the axle bearings are just inboard of the flycranks, concealed in this view by the wheels which are further apart than normal to allow separation of the sleeve pieces. The bearings, just inboard of

the wheels, carry the steering yoke which controls the movement of the wheels in the the curve. The steering yoke can be pivoted in various locations, depending on the particular K-L variant being used.

The future of any club or society rests with recruiting young people. By way of encouragement the **City of Oxford SME** has a profile of a couple of their junior members in the latest edition their journal, the *COSME Link*. James Farmer and Dale McMillan are both proving to be a real asset to the Society and both have already qualified as drivers of electric locomotives. Most importantly there is a word of thanks to those engine owners who allow the juniors to drive their locomotives when conditions permit.

If we knew how many hours would be involved in building our next model locomotive most of us would never even start. Ron Head considers you are in for at least 1,000 hours of work to build a fairly basic model from drawings and castings; a complex model full of detail might easily run to 3,000 hours and if researching and producing your own drawings and patterns for castings you might be looking at 6,000 hours or more - even 10,000 hours for some exhibition class work. Convert those hours into years, based on a humble weekly input, and you might wonder if you'll live long enough to complete the task.

So how long did full size locomotives take to build? The LMS Stanier 8F locomotive apparently took some 33,000 man-hours of work to produce although 6,000 man-hours were shaved off when the design was used by the Ministry of Supply for wartime production. To assemble the components into a finished locomotive would have taken a fraction of that time, but exactly

how long? No doubt as a publicity exercise, the L&NWR managed to assemble an 0-6-0 goods engine (minus tender) in only 25½ hours using a gang of twenty-six men and apprentices plus the shop foreman presided over by Francis Webb himself. So approximately 688½ man-hours were expended, which is probably on a par with the time taken to build one of the bolt-together kit models, with a bit of re-engineering of some parts to make it work properly!

The Society's Dreaming Spires Rally will take place **21st/22nd July**.

Harrow & Wembley SME will be holding a number of Open Days this year, one of which will be a visit by the South African Live Steamers, a group who model large narrow gauge prototypes mainly in 3½" gauge. This event will take place over the weekend, **16th/17th June** including a night run on the Saturday. For further details contact: Contact Roy Goddard, e-mail RSGwatford@aol.com

Apparently **Bracknell RS** organise a continental trip each year for its members; and quite cheap it works out too. This year's jaunt is to the Stoomcentrum Maldegem, a railway preservation centre situated on part of the trackbed of the railway line that used to run from Bruges to Gent. From Maldegem, standard gauge trains (steam and diesel) operate in one direction, and narrow gauge (60cm) in the other. As an additional option, those that wish will be able to visit the nearby village of Adegem to see the Canadian War Museum or the nearby French, English, Japanese Garden; on the return journey it is intended to visit the coastal tramway and

perhaps have a ride over part of it. All this for a reasonable coach fare of about £35.00 plus the admission charge to the museum.

Brent House Railway is a ground level 5" gauge layout that operates trains in a prototypical manner. It will be holding a number of Work & Run Weekends in the early part of the running season (18th/19th March, 15th/16th April and 27th/28th May - go along but expect to do some maintenance work). However, the **2nd - 10th June** is their Rally Week when all are invited to come along with locos/carriages/wagons and just enjoy the facilities. For further details e-mail: brent@brenthouse.co.uk

Junior members Euan and Steven were given the opportunity to operate a steam locomotive on a works train at **Malden & District SME**, moving rubble for further use. Meanwhile other juniors, EmmaRose, Goffe and Rhys have proven themselves very good loco cleaners, as well as assisting in light maintenance work on the locomotive *River Rythe*

SOUTHERN SHORTS

Although the **Ascot LS** track opening was scheduled for Spring 2007 work still continues apace at their relocated tracksite, at Ascot Racecourse, and realistically it seems that the opening will not be before May/June.

Refurbishment of their raised track is taking place at **Sutton MEC**. Seriously corroded track uprights are being replaced; originally made of angle from war-time Morrison Air-raid shelters they had been in the ground since the 1960's.

Work has started on the ground level extension at the **North London SME's** Colney Heath tracksite.

In January, eight members of the **Saffron Walden & District SME** took themselves and their locos off on an annual pilgrimage to the Great Steam Up in Sinsheim, Germany. Unfortunately, due to weather conditions, which delayed the sailing of the cross-Channel ferry, the journey was a long one but eventually they all arrived safely.

The next day all of the locomotives were booked into Sinsheim and they found themselves located in Hall 1, around a turntable populated by the English contingent present at the Meet. The event was organised to the usual high standard although the track layout was different this year with only one small section of raised track; the absence of the mini mountain

layout of previous years causing some disappointment for some people.

As usual everyone spent too much money on the trader's stands especially as one of the group had to purchase a clack valve from a trader from Hull! (It was an emergency).

A side trip to a railway museum at Heilbron was undertaken during their stay, where, apart from the exhibits normally to be seen at the museum, a number of locos and carriages which were rescued from the tragic fire at the Nuremberg Museum were also on show.

The Society's Open Days are **17th June** and **16th September** and the Society will be hosting a **Maxitrak Owners Club** Rally on the **24th June**.

WALES & THE SOUTH WEST



Taunton **ME** are trying to put together something a bit special for the TME Exhibition this year as a celebration of their Diamond Jubilee. Taking place the weekend **14th/15th April**, at Heathfield School, Monkton Heathfield, Taunton, apart from exhibiting the work of its members a number of other local clubs, Bristol, West Huntspill, Tiverton and Westland & Yeovil, have also been invited to attend. Other special exhibits will include a demonstration of clocks and what can be done with old microphones! A number of trade stands will also be present, supplying a range of tools and materials. For further

details contact: Bruce Nottrodt Tel. 01823 451766 or e-mail brucenottrodt@ouvip.com

Cardiff **MES** are to be congratulated for winning the Club Newsletter of the Year Competition awarded by the *Engineering in Miniature* magazine. The award was totally unexpected - they didn't know their magazine, *The CARDIFF MESSenger*, had automatically been entered because they regularly send it to that publication. As the Editor of the Society's magazine says, "Our contributors make the magazine what it is - no contributors, no magazine".

POSTSCRIPT

Only in Britain ... can a pizza get to your house faster than an ambulance.

Only in Britain ... do supermarkets make sick people walk to the back of the shop to get their prescription, while healthy people buy cigarettes at the front.

Only in Britain ... do people order double cheeseburgers, large fries and a DIET coke.

Stephenson Link - Chesterfield and District MES

EVENTS DIARY 2007

MARCH

- 3/4 Liskeard Model Society - Exhibition – *Liskeard Community College*
 10 **SOUTHERN FEDERATION AGM** – *Coventry Transport Museum*
 17/18 Sarum Model Traction Engine Club - Model Engineering and Hobbies Exhibition
 – *Michael Herbert Hall, South Street, Wilton, Nr Salisbury*
 25 Cardiff MES - *Open Day*

APRIL

- 8/9 Cardiff MES - *Open Days*
 14/15 Taunton MES - Exhibition - *Heathfield School, Monkton Heathfields, Taunton* –
CHANGE OF DATE
 14/15 Southampton SME – *Open Weekend*
 21/22 Model Engineering Show – *Milestones Museum, Basingstoke*
 28 Harlington LS – *Maunsell Locomotive Rally*

MAY

- 5 National 2½" Gauge Assoc. – *South East Area Spring Rally - Romney Marsh SME*
 6 Cardiff MES - *Open Day*
 11-13 Model Engineering Exhibition – *Harrogate Showground*
 12/13 Avon Vale MES – *Gala Weekend*
 12/13 Romney Marsh MES – *Open Weekend*
 19 **FEDERATION SPRING RALLY** – *Hosted by Oswestry Model Engineering Society*
 19 National 2½" Gauge Assoc. – *South West Area Spring Rally - Cheltenham SME*
 20 Oswestry MES – **Southern Federation Host Society Open Day.**
 19/20 Chesterfield & District MES – *Open Weekend*
 19/20 Tyneside SMEE – *Spring Rally*
 19/20 Merstham Model Steam Show
 26/28 Strumshaw Traction Engine Rally – *Near Norwich*
 27/28 Cardiff MES - *Open Days*

JUNE

- 2/3 Vale of Aylesbury MES – *Traction Engine Rally, Quainton Road*
 2-10 Brent House Railway – *Rally Week*
 9/10 Sweet Pea Rally – *Scunthorpe Society of Model Engineers*

- 9/10 Cardiff MES - *17th Welsh Locomotive Rally*
 9/10 Harrow & Wembley SME – *Open Weekend*
 9/10 Peterborough SME – *Loco Rally*
 16 Harlington LS – *Visiting Clubs Day*
 16/17 Harrow & Wembley SME – *South African Live Steamers Meet*
 16/17 North Wiltshire MES – *Gala Weekend*
 17 Saffron Walden & District SME – *Open Day*
 17 City of Sunderland MES – *Open Day*
 23/24 M.S.R.V.S. - *Traction Engine Rally – Tewkesbury*
 23/24 Eskvalley MES – *Midsummer Night Steam Up & BBO*
 24 Saffron Walden & District SME – *Maxittrak Owners Club Rally*
 24 Maxittrak Owners Club – *Rally at Saffron Walden & District SME*
 24 Cardiff MES - *Open Day*
 30/1 July Stockholes Farm MRS – *Rally Weekend*

JULY

- 7/8 I.M.L.E.C. – *Hosted by Llanelli and District Model Engineering Society*
 14/15 North Wiltshire MES – *Charity Weekend*
 15 National 2½" Gauge Assoc. – *South East Area Summer Rally - Worthing & District SME*
 21 Chesterfield & District MES – *Opening of Track Extension*
 21/22 Guildford MES – *40th Traction Engine Rally and Exhibition*
 21/22 Sacrewell Traction Engine Rally and Gathering.
 21/22 City of Oxford SME – *Dreaming Spires Rally.*
 27/28 Canvey Railway & MEC – *Open Days*
 29 Canvey Railway & MEC – *Models Day*
 29 Cardiff MES - *Open Day*

AUGUST

- 11/12 Leeds SMEE – *Rally*
 12-19 Model Engineering Exhibition – *Thornbury Leisure Centre, Bristol*
 25-27 Harrow & Wembley SME – *Open Weekend*
 26/27 Cardiff MES - *Open Days*
 31-2 Sept Bedford MES – *Rally Weekend*

SEPTEMBER

- 1/2 Tyneside SMEE – *Spring Rally*
 1/2 Chesterfield & District MES – *Open Weekend*
 7-9 Model Engineer Exhibition – *Royal Ascot Racecourse - NEW DATE & VENUE*
 8/9 Birmingham SME – *Loco Rally*
 9 City of Sunderland MES – *Open Day*
 15 **FEDERATION AUTUMN RALLY**
 – *Hosted by Canvey Railway and Model Engineering Club*
 15/16 South Down LRS – *Steam Gala*
 16 Canvey Railway & MEC – ***Southern Federation Host Society Open Day.***
 16 Saffron Walden & District SME – *Open Day*
 23 Cardiff MES - *Open Day*

OCTOBER

- 12-16 Midlands Model Engineering Exhibition – *Warwickshire Exhibition Centre*
 14 Cardiff MES - *Open Day*



Photo: Saffron Walden & District SME

ABOVE: This view of Hall 1, Sinsheim, where the 5" gauge track meanders up and down about five times, shows the fog that accumulates towards the end of a day's running. At the busiest times it takes about 30 minutes to complete a circuit. The picture was downloaded from the electronic Newsletter of Saffron Walden & District SME. (see p33)

BELOW: These parts for a Land Rover V8 Petrol Engine were exhibited by Mike Perry on the Reading SME stand at Brighton ModelWorld 07.



Photo: Mike Leaty

