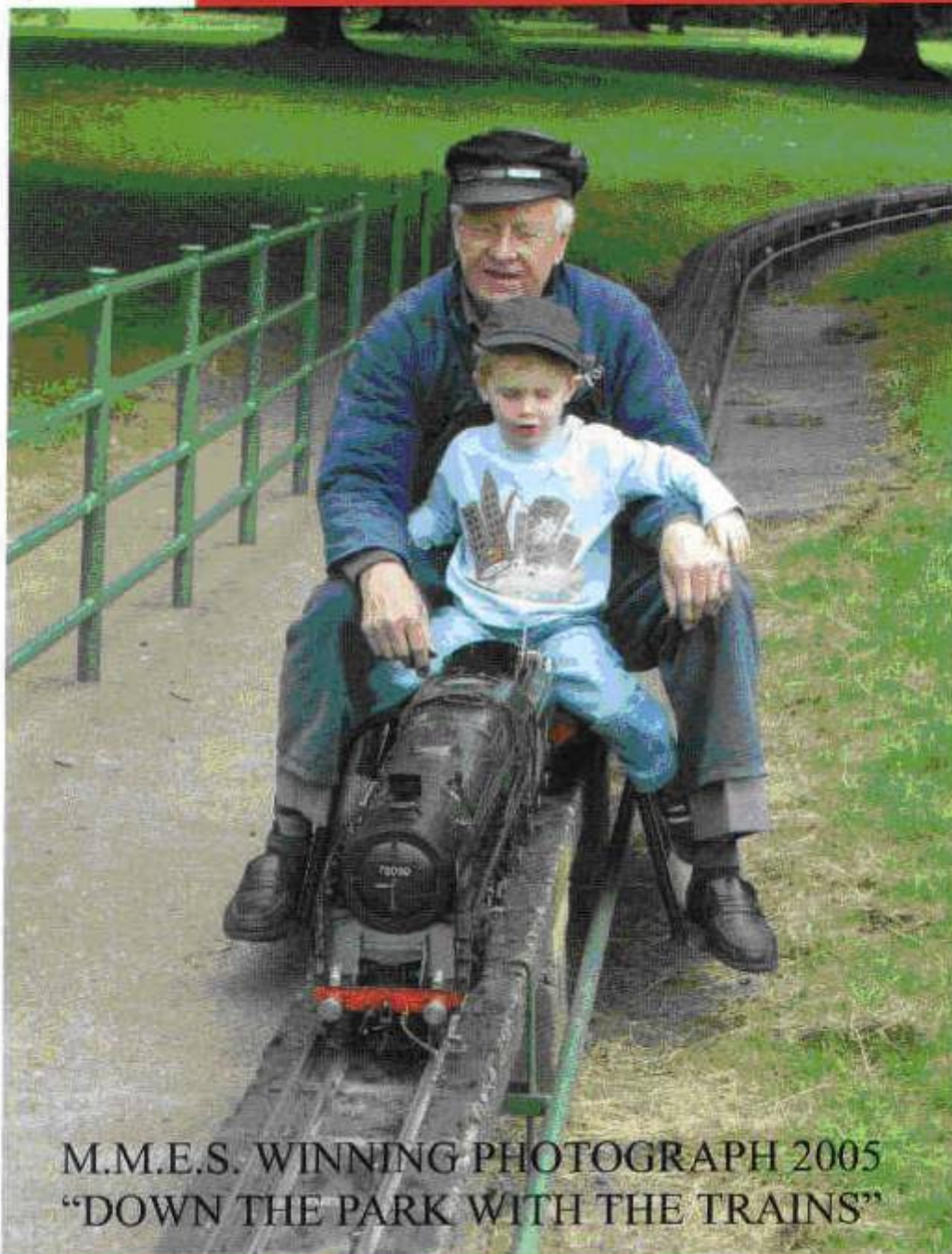




MAIDSTONE MODEL ENGINEERING SOCIETY

NEWSLETTER CHRISTMAS 2005



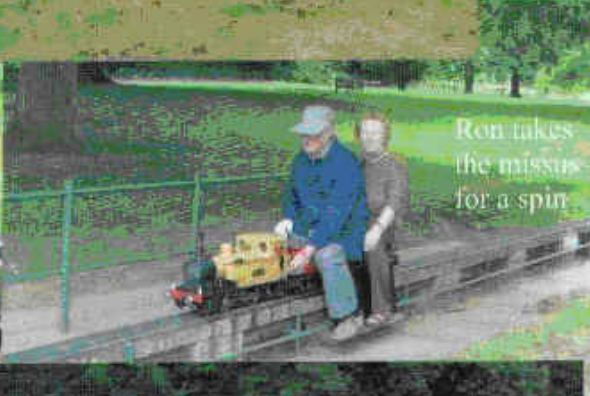
M.M.E.S. WINNING PHOTOGRAPH 2005
"DOWN THE PARK WITH THE TRAINS"



JB lets his sons have a drive



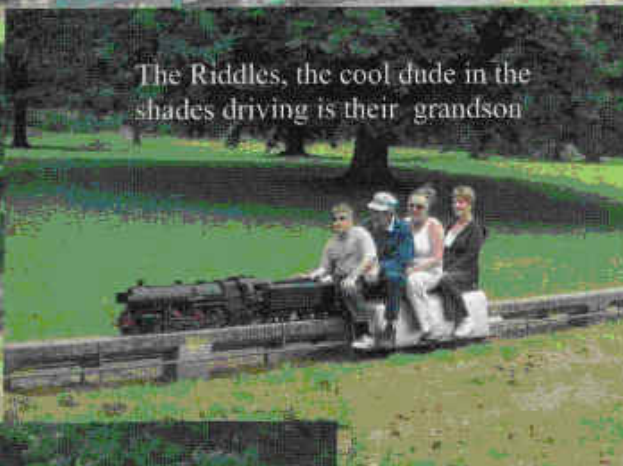
Tom with his Dad's great-nephew (you work out the relationship!)



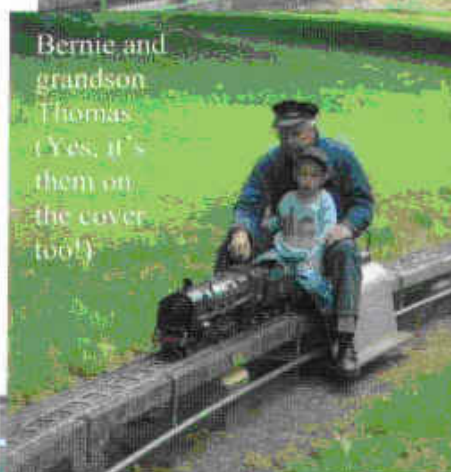
Ron takes the missus for a spin



Grandson, Jack, and son



The Riddles, the cool dude in the shades driving is their grandson



Bernie and grandson Thomas (Yes, it's them on the cover too!)



Now there's something wrong with this picture, not just that it's got Martin in it, instructing his nephew Clinton. Have you spotted it?



To cap it all, Tom lets Gemma Hawkins have a go



Rex with daughter Beryl and his neighbour

FAMILY AND FRIENDS DAY 11TH JUNE 2004

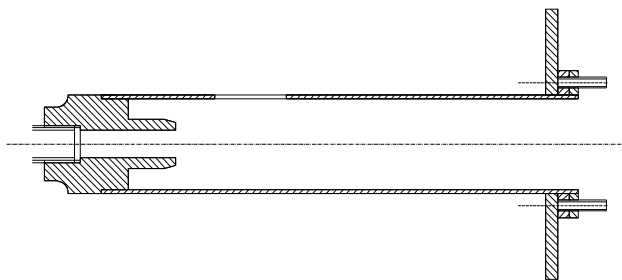
(Apologies for not managing to picture everyone there)

AN ALTERNATIVE REGULATOR

This idea for an alternative regulator came about when the 'disc-in-tube' arrangement on my 'Firefly' leaked badly, and I had to strip the loco down to overcome the problem. I thought that it might be worth publishing a few brief details, so here goes.

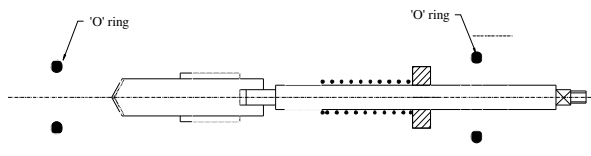
With the 'Firefly' design, the regulator is included as part of the main steam pipe - to repair it entails removing the boiler. You know the drill - remove cab, bunker and side-tanks, disconnect all plumbing to the boiler (including that to the cylinders), remove the boiler and then extract the main steam pipe, complete with regulator. Only then can you start to fix the problem. Of course, you will also have to reassemble the whole thing. Scratched paintwork, and lots of bad language. All very irritating!

In order not to be caught out so badly in the future, I decided to rework the regulator into the form of a 'cartridge', which is sealed into the main steam pipe by 2 'O'-rings. Both the main steam pipe and the regulator have slots at the top to allow steam to pass from the boiler into the regulator itself. The main steam pipe has now become a permanent part of the boiler, and the regulator itself can be removed just by undoing a few nuts and pulling it out.



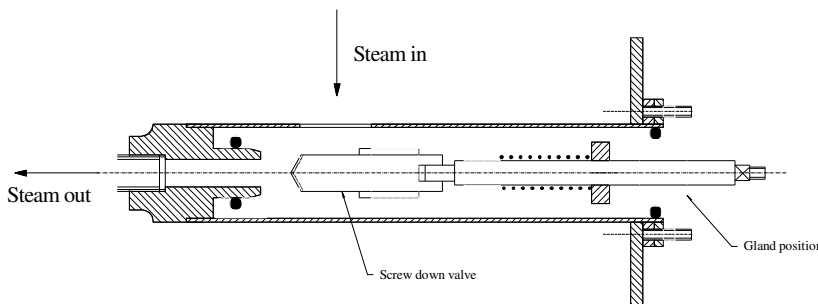
MAIN STEAM PIPE

Sealed to boiler backhead
Held with screws (not shown)



REGULATOR CARTRIDGE

Sealed into main steam pipe
with 'O' rings



ASSEMBLY

Regulator cartridge shown
fitted into main steam pipe

The design shown is Mike Wallace's modification as fitted to his 'Speedy' - Mike has used a 'screw-down' valve as opposed to a 'disc-in-tube', but the desired effect is the same - quick and easy removal.

Engines and Things (Another answer for Vic)

Water.

Funny stuff, water. Made from two of the most active substances in the periodic table, Hydrogen (2 Atoms) and Oxygen (1 Atom), the first, a strong reducing agent and the second, a strong oxidizing agent. Bring both together, and wham! It is love at first sight (actually it's normally Bang! Big style). The offspring is water. There's no such thing as pure water. In the atmosphere it joins with Carbon Dioxide and/or gathers on microscopic impurities, forming raindrops. When distilled, it reacts with the material of the vessel containing it and even dissolves minute quantities of glass! As it freezes it's volume increases!

Power from Water.

It is subject to the laws of physics. Consider a water butt. When full, the base area is pressurised by the weight of the volume of water it contains (lbs./square inch, like a boiler). It contains Potential energy (stored up energy). Open the tap and water rushes out. It now has Kinetic energy (energy from motion) but no pressure. As the level falls in the container, so the speed of discharge decreases. Big Idea; Build a dam, let the water out at a steady rate, place a wheel with paddles round the outside into the moving water, and you have a controlled source of energy.

Steam.

Chap sitting by a boiling kettle; lid hopping up and down. Holds lid down, and notices steam comes out of spout more vigorously. Lid also pushes more forcibly against hand. Notices fingers getting very warm and lets go PDQ! For what happened over the next 150 years, try your local library! (Ashford has a very good steam section).

Steam Stats.

To turn a volume of water completely into steam from freezing point, at normal atmospheric pressure, requires heat energy totalling 1150.7 Btu/lb of water. As pressure rises above atmospheric, the amount of heat required to boil water, and convert it to steam, reduces. When critical pressure is reached (3208 PSI), all the heat input then immediately becomes steam, requiring 899.6 Btu/lb. water, at a temperature of 705 degrees F. (Ref: Dr. Callendars' Abridged Steam Tables. Note: these are ghastly enough; God knows what the full version is like). The laws of physics also apply. Pressure, volume, and temperature are all inter-linked, as are pressure and velocity. For a given mass of steam, if one parameter changes so the others change.

Cylinders.

Consider a slide valve steam chest, connected to a boiler. This may be considered to be the end of the steam feed pipe, but a different shape, with a lump of metal moving to and fro within it, acting as a switch, turning the steam on one end while off the other. It's volume should be a minimum to prevent any expansion of the steam within. It's cross section area, viewed side on, need be no bigger above the valve than cross section area of the pipe feeding it. The regulator is opened admitting steam. Pressure builds up quickly but is lower than in the boiler. Work energy to overcome resistance to flow (all the bends in the pipe work) is required, and metalwork requires heating up, (Volume constant, temperature drops, then pressure must fall) and steam is in motion (Kinetic not Pressure energy). The piston starts to move and as the volume to be filled increases, steam flows at speed from the boiler (pressure falls) until, say at 70% stroke, the valve cuts off the supply. Pressure then rises in the steam chest. In the cylinder the trapped volume of steam continues to expand in volume, as work energy is being extracted from the steam. Both pressure and temperature fall. At back centre, the valve then opens the cylinder to atmospheric pressure. The residual pressure becomes velocity, so steam, at little or no pressure, escapes at high speed through the exhaust system and up the stack. The cavity on the exhaust side can be shallow because it is the full width of the ports and exhaust steam moves rapidly. At most there is about 70/80% of the cylinder volume (less at shorter cutoffs) to flow through the valve.

In full size practice, speed is near supersonic (the exhaust noise). The regulator is opened further, the engine moves faster because pressure builds more rapidly in the steam chest (more volume is supplied), but because it is in motion, constantly supplying both ends of the cylinder, the pressure in the steam chest will always be less than boiler pressure.

Steam Flow.

We are all aware of the need to provide big enough exhaust ways and feed pipes, to and from the cylinders. The GWR found that out at the beginning of the last century! Because of the size of our engines we can “get away” with something less than best prototype practice. Puffing Billy had crude cast iron cylinders that were anything but round and parallel, with pistons and glands packed with hemp and tallow. Steam engines have a habit of working, when designed, constructed, or maintained badly. After all you only have to chuck enough coal and water in and it will generally wheeze along the track. LBSC (like him or hate him) designed, and told us how to build engines that could easily be made to work by anyone. It would still go even if the standard of engineering were less than good.

Cylinder Capacity.

Or Swept Volume for a reciprocating engine of the steam or suck, bang, blow, variety is the same, a purely arithmetical entity to the formula:

$$\frac{\pi D^2}{4} \times L$$

D: Diameter, which can be measured directly. L: Stroke from top/front to bottom/back dead centre. Doesn't matter whether you're Imperial or Metric as long as both are measured in the same units. For multi-cylinder engines, capacity is the sum of the swept volumes of every cylinder in the engine, however many, and in the case of a compound, whatever the diameter of the bore. In a double acting steam engine there are two, power strokes/revolution, and technically, the swept volume on the piston rod side, is the swept volume minus the exposed volume of the piston rod, at front dead centre.

Volume changes as a Linear function of stroke size, but as a function of a change in Diameter Squared.

e.g. Stroke: 1" to 1.25" 25% increase in Volume with same Diameter.

Diameter: 1" to 1.25" 56% Increase in volume with same Stroke.

Clearance volume.

Bit necessary this item in all reciprocating engines.

1. As bearings wear the piston tends to over travel at the end of each stroke, so, if there were no clearance, the piston would tend to clout the end cover/ cylinder head. You may imagine the result on a full size machine, let alone a 1" scale job.
2. In most steam engines, due to the lead function of the valve gear, clearance is also needed, to stop the piston over compressing the incoming steam at the end of the stroke, causing internal resistance and loss of power (and a loop at the inlet point on the indicator diagram). The passageways in the cylinder block count as part of the clearance volume each end.
3. In internal combustion engines, it can be used to control compression heating of the air charge (pressure compression ratio). Big enough to prevent pre-ignition in petrol engines, small enough to cause ignition in a diesel engine and in both cases just enough to generate maximum power from a given amount of fuel.

After all that, if your masterpiece goes okay, why worry about the above!!

Brian Harris.

Cranbrook Windmill

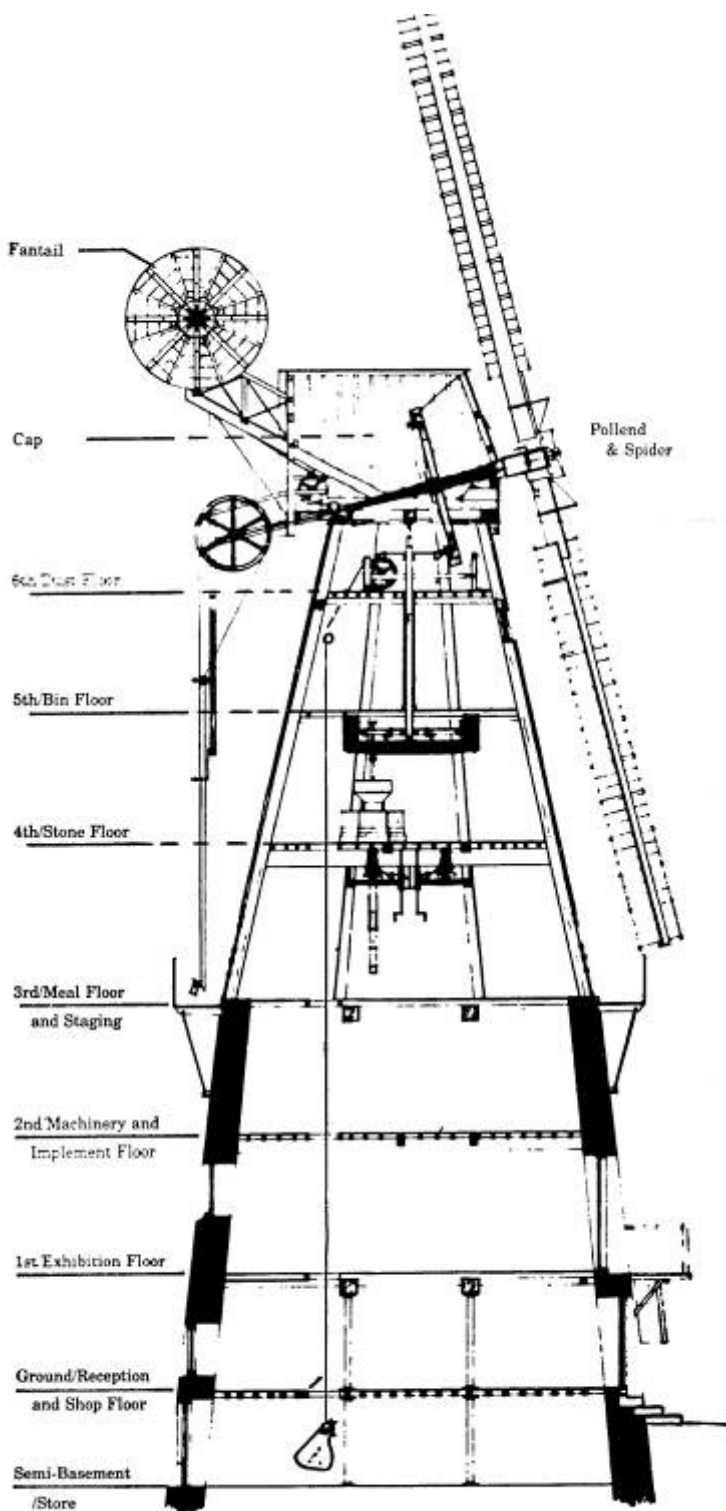
Cranbrook Windmill was built in 1814, during the period of the Napoleonic wars. There was an enormous demand for flour in the South East of England at this time, not only to supply the huge naval and land forces raised to defend against the threat of Napoleon and the possibility of an invasion. Henry Dobell decided to build a new windmill in Cranbrook and engaged a noted local millwright James Humphrey. The mill cost £3500, a considerable sum in those days but there were already three existing mills in the locality and the only remaining hill had houses on it, so a three story base had to be built to lift the mill above the surrounding roofs. The result of Humphrey's work was to be the best example yet of a smock mill as it is 75 feet tall.



In 1815, after the battle of Waterloo, most of the Navy and Army were disbanded and a great economic depression led to a collapse in the market for flour. Dobell managed to struggle on for four years but eventually was made bankrupt in 1819. The business was acquired by five of his creditors who had lent money to him to build the mill. They formed a Union of Creditors to run the business until the debt was repaid in ten years time. This led to the name Cranbrook Union Mill. In 1832, the mill was sold to the Russell Family who came from Sussex. In 1840, they modernised the mill by replacing the common cloth sails by the Cubbits Patent shuttered sails, introducing iron gearing and erecting a fantail instead of the manual chain and Y-wheel used for turning the cap to wind. In 1880, the present staging was erected to replace the original wider timber one. In 1863 a ten horsepower Middleton steam engine was installed to drive three pairs of millstones in the base of the mill. In 1919, a suction gas engine replaced the steam engine and this was replaced by an electric motor in 1952. It was however most fortunate that the Russell family did not remove the wind driven equipment and repaired the timber work as necessary. John Russell who took over in 1918 was presented with the first ever certificate by the Society for the Preservation of Ancient Buildings in 1935 as a mark of his dedication to the upkeep of the mill. John Russell died in 1958 and in 1960; Kent County Council purchased the mill for £1. Following a restoration by Dutch millwrights, the building was leased as an animal feed store but when the lease ran out in 1982 the Cranbrook Windmill Association was formed to open the mill to the public and restore the interior. By 1985 grinding of flour by wind power was commenced.

The Cranbrook Union Mill is now opened to the public on a regular basis when stewards on each floor give explanations to the visitors on the work that used to be carried out, and when the wind blows, the mill grinds wholemeal flour. The windmill has been listed as a grade 1 building. Behind the windmill stands a two story wooden building which used to be a workshop and office. This is the only other remaining structure of the original milling complex and was acquired by the Cranbrook Windmill Association in 1998 with the help of The Heritage Lottery Fund and generous donations from Kent County Council and others. This acquisition has enabled the Association to extend its activities as it is an ideal meeting place for its members and visiting groups and has other facilities, Exhibition and workshop. The building has been named The Russell Building in memory of John Russell.

The machinery of the mill has many interesting aspects as it represents an advanced stage of development and engineering refinement. All the gearing has wooden teeth driving metal teeth or cogs. The wooden teeth, made from apple wood, are all replaceable, and to even out wear, there is a "hunting" tooth. This arrangement prevents sparks- flour dust is explosive, and does not require lubrication. The gap between the stones is one of the critical factors in grinding grain and the control of it is called tentering. The lower of the two stones is called the bedstone and this is fixed in place on a substantial framework of timber.



A Grade I Listed Building

The upper stone or runner is supported by a metal spindle from below and this is supported by a series of levers which allow very fine adjustment of the gap by hand. There is also a method of automatic adjustment by a governor which lessens the gap as the speed increases, thus variation in wind speed does not affect the quality of flour. James Watt adopted this governor for use on his steam engines to regulate speed.

Windmills are designed to work with the sails (called sweeps in the S.E. of England) facing directly into the wind. When Cranbrook Mill was built, the cap had to be rotated by hand to “wind” it. Later a fantail was added so that winding is automatic. The cap itself weighs about 12 tons and is supported on fifteen bronze bearing plates which slide on a circular steel plate set on top of the curb at the top of the smock. In order to ensure that the cap revolves round a fixed centre point, truck wheels are provided to take side thrust onto the inside of the curb. The shutters on the sweeps are linked together and controlled by the striking gear. Each shutter bar connects through a bell crank to a rod through the windshaft. This arrangement is called the spider. The rod is called the striking rod and is fixed to a rack at the back of the cap and this rack is moved forward and backward by a pinion which is on a shaft carrying a chain wheel. An endless chain over this chainwheel is operated from the staging below.

There are many other interesting items to see at the Cranbrook Union Mill and hopefully this description will whet the appetites of those who have not yet visited. The mill is open from 2.30 to 5.00 pm on Saturdays from April to the end of

September and Sundays from July to the end of August. Also Bank Holiday Mondays during these periods. It is also open to Groups throughout the year at mutually convenient times by ringing 01580 712256 or 01580 712984. Admission is FREE but donations towards further restoration and repair costs are appreciated.

Tony Jones.

MURPHY'S LAW (Anything that can go wrong, will go wrong)

Anything good in life is either illegal, immoral or fattening.

The light at the end of a tunnel is the headlamp of an oncoming train.

Celibacy is not hereditary.

Never sleep with anyone crazier than yourself.

Beauty is only skin deep, ugly goes to the bone.

Never play leapfrog with a unicorn.

A Smith & Wesson beats four aces.

If everything seems to be going well, you obviously don't know what the hell is going on.

Never argue with a fool, people might not know the difference.

A short cut is the longest distance between two points.

Friends come and go, but enemies accumulate.

Everyone has a scheme for getting rich that will not work.

The other queue always moves faster.

Murphy's Golden Rule: Whoever has the gold makes the rules.

The race is not always to the swift nor the battle to the strong, but that's the way to bet.

Anything you try to fix will take longer and cost more than you thought.

The repairman will never have seen a model quite like yours before.

In order to get a loan, you must first prove you don't need it.

No longer how long and how hard you shop for an item, after you've bought it, it will be on sale somewhere cheaper.

The chance of a piece of bread or toast falling buttered side down is directionally proportional to the cost of the carpet.

MURPHY WAS AN OPTIMIST.

(Taken from an Irish tea towel by the Editor – I'm sure you can think of many more!)

Vodka & Red Bull Christmas Cake

Ingredients

1 Cup water
1 Cup brown sugar
1 tsp baking soda
1 cup sugar
1 tsp salt
Lemon Juice
4 large eggs
Nuts
1 bottle of Vodka
1 can of Red Bull
2 cups dried fruit
Butter

Method

1. Sample the Vodka to check the quality.
2. Take a large bowl, check the Vodka again.
3. To be sure it is of the highest quality, pour one level cup, mix with a little Red Bull and drink.
4. Repeat step 3.
5. Turn on the electric mixer, beat one cup of butter in a large fluffy bowl.
6. Add one teaspoon of sugar. Beat again.
7. At this point it is best to make sure that the Vodka is still ok.
8. Flavour with Red Bull to taste.
9. Try another cup – just in case turn off the mixer.
10. Break two legs and add to the bowl and chuck in the cup of dried fruit.
11. Pick fruit off the floor.
12. Mix on the turner.
13. If the dried fruit gets stuck in the beaters, pry it loose with a screwdriver.
14. Sample the Vodka to check for consistency, flavour with a little Red Bull.
15. Next sift two cups of salt, or something - who givesh a sh**
16. Throw a pinch of Red Bull over your shoulder.
17. Pick up the can and mop the floor.
18. Check the Vodka
19. Now shift the lemon juice and strain your nuts.
20. Add one table.
21. Add a spoon of sugar, or something, whatever you can find.
22. Turn the cake tin 360 degrees and try not to fall over.
23. Don't forget to beat off the turner.
24. Finally, throw the bowl through the window, finish the Vodka and snog the dog.
25. Fall into bed

Cherry Mistmas

VALVE SETTING

I have never been entirely happy with my 5" gauge Royal Scot locomotive. Since I first ran the engine early in 2004 I have thought the exhaust beat of the three cylinders has been slightly irregular.

The valves are piston valves and have no visual setting ports. I therefore set them with compressed air. I listened for the opening and cut off events of each valve via the drain cocks. I did have great difficulty in getting the bobbins in and out at each adjustment so I probably took less trouble setting the valves than I should have done.

A couple of months ago I decided to try and improve the valve setting. Off came the cab, running boards and boiler. I made several minor adjustments and all seemed fine when running on compressed air. So reassembled again. It was a great disappointment when I steamed the engine at the track to find that the exhaust beat was more irregular than previously.

Back in the workshop the following week I dismantled the engine again. This time I dismantled each cylinder and carefully and delicately machined a nice bevel to the piston valve liner so that the ringed bobbins would enter and exit easily. Previously it had been very difficult to persuade the rings to close on both entry and exit, particularly over the centre steam voids. I also drilled and tapped 2 no. 2 BA holes to accept two 3/16" dia stubs in the front end of each bobbin to enable me to pull the bobbin out once the nuts had been released.

I could now easily adjust each valve bobbin by just removing the valve front end, undoing the large and small nut with a double box spanner (one inside the other) and changing the thickness of the washer. However on this engine I still have to remove the cab, running boards and mechanical lubricator. I will ensure that my next engine will be even easier to get at the valve bobbins.

Having now made the actual adjustment much easier, I still had the problem of calculating the correct position for each bobbin. I continued to try and set it up listening to compressed air emerging from the drain cocks with a stethoscope. I tried drawing up graphs recording the steam entry, cut off and exhaust events. Making adjustments to get all cylinders, front and rear to record equal graphs. I also made patterns of the valve liner and bobbin out of stiff cardboard to help me calculate the correct bobbin position from the valve open end. I test ran on air. It all seemed good. Notched right up almost to mid gear and still ran on about 10 p.s.i. So I re-assembled it all again, but in steam on the track it ran very well, no shortage of power but those exhaust beats were not regular.

I took it home and put it away, having now spent many hours trying to improve the engine; I concentrated on my present project. However mid week came and my mind wandered back to those offending exhaust beats and I suddenly thought of another way of checking the valve events and this is my reason for writing this as I have not read or heard of this being done before. You need to clear your bench or do it on a longish bit of track, or steaming bay. It needs to be quiet and you need a stethoscope. Put the stethoscope to the top of the chimney and with all valves, drain cocks etc closed, push the engine along slowly and you will hear the exhaust pop at each exhaust opening event. At each pop put a small blob of blue tack on the bottom edge of one of the coupled drive wheels, I used the rear left hand wheel. Carry on for each exhaust pop so that you have each 'pop' marked around the rear wheel. With my three-cylinder engine I had six blobs around the wheel and immediately I could see why my exhaust beat was irregular.

I then transferred the blue tac 'blob' points to paper. I drew a full size circle to represent the wheel rim and with dividers marked the position of the blue tac 'blobs'. I always positioned the inside cylinder (piston front event) at the bottom of the paper. This put the inside cylinder rear event at the top of the paper with the outside cylinders to each side. With a ruler I then drew a line to join each cylinder front and rear event. This created six segments on the paper, which should have been equal, but they weren't!

VIC'S PAGE

BOOK REVIEW: "Squirrels, Nuts and Flying Rivets" by Brian Trevis, published by Turbo-Brain Publishing, available from Camden Books at £7-95 ex. p & p. Paperback, 90 pages, some coloured, some black and white photographs with amusing line drawing cartoons.

A very difficult book to categorise. It is certainly not a technical treatise on the restoration of a Foden C-type wagon. There are no technical drawings, no plans or elevations. It is more a "how Richard Vincent did the job". It all started with the acquisition of just a boiler and how he made, acquired, purchased and bartered for the remaining missing bits. Hours and hours of dedicated hard work, the trials and tribulations, ably supported and advised by good friends and acquaintances from the world of full size steam resulted in a truly magnificent machine. Tales of the goings on are amusing in themselves as are the cartoons.

The only small criticism I have is the rather tiny font size in which the book is typeset, not quite so easy to read, if like me, the old eyes are getting a bit tired these days.

All in all a very good read, even if the workings of a steam road vehicle are a bit of a mystery. The reason for the title? You will have to read the book yourself to find out!

Vic R.

THE USE OF CORRECT LANGUAGE (OR: HAVE YOU GOT EYES IN THE BACK OF YOUR HEAD)

From time to time the use of a particular word or phrase can have one or more meanings depending on the context in which that particular phrase is used or, the person expecting to hear a particular set of words, thinks HE/SHE is the one being addressed and places his/her own interpretation of that phrase and acts accordingly. In some cases disasters have happened as a result.

The use of clear unequivocal language is therefore essential in most cases if unforeseen results are to be avoided.

For example: - you are sitting behind your engine being loaded with passengers. Advancing years make it difficult to twist your head round to ascertain if loading is complete, particularly on a two set train. (Hence the advantage of having eyes in the back of your head). You hear a voice say "OK, mate" and you start to pull away. However the voice you heard was not being used to give you information but someone using that expression in response to a question from someone else. Again it could have been "alright George⁰ and you being George thought that was for you and you start to pull away. Oh calamity, Granny is only just struggling to get her leg over (the passenger car I mean) and is liable to take a tumble if prompt remedial action is not taken.

How about the clear instruction "Clear away driver", or less formally "Clear away Fred" or some such name as yours. Is there any doubt in your mind then that you are the one being addressed and that you are clear to "pull the handle". You see, the latter expression is reasonably understandable by the driver to mean that you can open the regulator. However it could mean something entirely different.

Far be it for me to level criticism at any present, past or future member of the club for the use of unclear language but, in this day and age of hazard awareness, I venture to suggest that "clear away *****" leaves nobody in any doubt as to what is intended.

Vic R.

M.M.E.S. 4th Annual Sunday Lunch on 29/01/06 - £15 per person
(Grangemoor Hotel, Maidstone, NOTE from 12-15 for 12-45 start)

Fresh Home Made Soup of the Day

or

Prawn & Pineapple Salad in Marie Rose Sauce

Served with Brown Bread & Butter

or

Chilled Honeydew Melon Boat

or

Deep Fried Mushrooms

Served with a Garlic Mayonnaise

Roast Sirloin of Beef with Yorkshire Pudding

or

Roast Leg of Lamb with Mint Sauce

or

Roast Breast of Chicken with Sage & Onion Stuffing

The above main courses are served with

Roast Potatoes & Vegetables

or

Deep Fried Fillet of Sole

Served with French Fries & Salad Garnish

or

Stir Fried Vegetables & Tagliatelle

With a Sweet Chilli Sauce

or

Cold Ham with Mixed Salad

Home Made Apple & Apricot Pie with Cream

or

Meringue Nest filled with luxury Strawberry Ice Cream,
Coated with Strawberry Puree & topped with Whipped Cream

or

Selection of Ice Cream, Vanilla, Strawberry, Chocolate

or

Warm Chocolate Fudge Cake served with Whipped Cream & Vanilla Ice Cream

or

Apricot & Chocolate Cup

Chocolate cup filled with Vanilla Ice Cream, topped with Apricots,
Coated in Apricot Coulis, finished with Whipped Cream

or

Cheese & Biscuits

Coffee or Tea

Cash or cheque (payable to M.M.E.S.) and Menu choices to Pat Riddles (or Sue if Pat's not around) by Friday Club Night 6 th January At the latest please

NEVER FAR AWAY

Perhaps I had better first of all return to the tale of Uncle Tommy. Newer members who are unfamiliar with the story so far may be able to obtain the relevant back issues of the MMES Newsletters from Sue for a modest payment or gift (flowers, chocs, champagne, flattery).

Uncle Tommy's house had suffered some significant changes by my hands, and the next job was also going to be a major one with, again, an element of anticipation and trepidation. Anyway, come the day when work started on removing an upstairs bricked-up fireplace and chimney breast; I started in the loft by installing an RSJ onto the rear outside and central load bearing walls to support the flue and chimney stack. It wasn't that I wasn't expecting anything untoward to happen, I was just passionately hoping and praying that nothing would. I kept telling myself that nothing would happen, and nothing did, the self fulfilling prophecy prevailed. A good start.

So! Stage two was in the bedroom where I stood and contemplated the 'Tomb' and noticed that there wasn't an air vent in the wall for flue ventilation as there normally would be and at the same time I thought of course not - if I was going to brick someone up in a fireplace I wouldn't want the smell wafting through into the bedroom. This heightened the apprehension and so I tried to apply the self fulfilling prophecy again by talking my thoughts aloud for about two hours whilst I covered everything up with dust sheets, sealed the door to an adjoining room with tape and gathered together all the equipment that would be needed. I had a good supply of rubble bags, all the tools I needed, dust masks, goggles and a radio, there was no reason not to get started. So I went downstairs and made a cup of tea. I sat on the front door step sipping tea and wondered if Mrs Wilson did ever get a hearing aid. If a train went by I didn't notice so there were no wagons to count and no reason not to get on with the job, especially as the tea was finished. Right! Here we go then, I'll just wash the cup, dry it, put it back in the cupboard, and hang up the tea towel. Perhaps I should talk to Snowy and Alf for a few minutes before I go upstairs. What was I thinking of, talking to the cats? They were probably thinking fer gawds sake get on with the job. So I did eventually get started.

Right! Stage three; the plan was simple; open up the original fire place, discover the corpse of Uncle Tommy, call the old Bill and then go home.

Wrong. Well, not quite right anyway. What actually happened (will be explained in the next edition).

As in previous episodes, I am listening to music as I type and amongst the many pieces selected I find myself listening to Ravels Bolero. And, as in the past, it evokes memories. On this occasion it conjures up not one but two scenarios; Torvil and Dean on ice in the 1984 Olympics, very cool and no steam, or Dudley Moore in bed with Bo Derek in the 1979 film '10', no trains but looaadsasteeaaam. I'm now tapping the keys in time with the music. Wot woz Dudley doing in time to the music? Whoops! Going off the rails a bit, better get back on track, N.B. two puns in one sentence.

Anyway! That's got that done, so let's go further back in time now to when I were a lad.

As already explained my own personal railway was 'never far away' and I also enjoyed other railways; Gillingham Strand, Livingstone crossing and loco sheds, RHDR. There was another source of train mania and that was the model shops, quite a few of which featured at the very least a modest OO gauge layout and in some shops, something bigger. The house I lived in my early years backed onto the now infamous Twydall Green shopping centre, but in those days it really was quite respectable with the Copper Kettle tea rooms, World Stores, Trembeths the bakers, Rix's hardware and Sedges, a cycle/toy/ hardware shop that also sold Hornby train sets and accessories. Needless to say, I window shopped at this fine emporium many times. The layout in the window was small, but it had a tunnel and I liked tunnels (I also liked bridges).

As a small boy it was my responsibility to go to the shops for whatever Mum needed and that was mostly on a daily basis with the prohibited route being my favourite; up the rear garden, over the six foot wall, across the rear access road, through the alley and there it was, my almost personal retail cornucopia of all that really mattered to this small boy. This would get even better if dad sent me shopping for an item of hardware that I could get from Sedges rather than Rix's, it meant that I had good reason to go *into* this Temple and hang around the end of the queue delaying my turn to be served so that I could spend more time looking at Hornby items in the glass display cabinets. I was fascinated by the wooden box on the counter with a big button for testing light bulbs, without taking them out of their packaging, so being asked to go and buy a 60 watt pearl bulb (mysterious words until dad explained it to me) was an added bonus.

Time for a humour break. Let me slip outside the framework of chronological order to tell a tale from more recent times. I have what I consider to be an Anorak quality in that I am always happy to include in my activities a visit to a museum. On one occasion a few years ago (1996) whilst on the annual family holiday, on a day when the weather had driven us to find an indoor activity, we found a museum and once inside we shook off some water and started exploring with my own two small boys (as they were then) leading the way and me and the missus in tow. At some point I found myself alone in a reconstruction of a Victorian Street scene at night time. I wandered around looking into shops that had lights on, and there was more than one item on the shelves that I could remember from when I was small boy (how old am I? old enough to lie about my age, so don't ask). There were several dummies, dressed appropriately for the period; a Barrow boy and his mobile vegetable store, a railway porter with a sack barrow loaded with luggage, a Gentleman on a Penny Farthing and a centre piece that was a Hansom cab with driver, passenger and a Horse (stuffed). Also, in keeping with the period there were gas lights although they were lit with 15 watt pigmy bulbs, cobblestones for a road, a railway station booking hall with enamel signs on the wall; - Do Not Trespass on the Railway, Platform Tickets, and Gillette – you get the picture – good. I stood, leaning against some iron railings looking at these signs with water still dripping off my Anorak and I probably started to daydream a bit but I did notice out of the corner of my eye a family enter the scene from the right. Well I assumed they were a family, Mum, Dad and two kids but I carried on gazing at the signs, or staring into space. I became aware that 'Mum' was moving in my direction but it didn't bother me, she got closer and closer and I carried on gazing at the signs. She got so close that I thought this woman is now definitely invading my personal space and that did bother me. So I turned my head to face her, she screamed and leapt backwards, her husband focussed his gaze on me, stuck his chest out and started towards me, at which point the lady got her breath back and blurted out 'I thought you were an exhibit'. I was speechless. There was an ambience that would convince anybody with the slightest modicum of intelligence that the setting was a scene from the previous century, and that as I was wearing my best yellow, red and blue survival Anorak, I was a hundred years out of place. But this Dozy Dora thought I was part of the mannequin squad. She who must be obeyed appeared on the scene together with our small boys and garbled explanations were given. 'Time for a cuppa tea' I said and we departed the scene. I had a mind to suggest to the management that future visitors should first be given an intelligence test before being allowed entry.

Anyway, let's move forward now, to the past again when I were a lad. I was a sickly child and from the age of thirteen I had to attend Guys Hospital in London monthly. After the first couple of visits Mum decided that I could go on my own (it saved one adult train fare) and I was more than willing to be doing my own thing. Hospital was not much fun but there were compensations; whatever the time of my appointment I would get an early train and use any spare time for quality pursuits; train spotting at London Bridge station was a real bonus, standing on London Bridge watching Lighters being unloaded onto a dockside railway below, across the river I would always climb the Monument and count the steps every time just make sure that the admission notice at the bottom was correct (311 steps). If the attendant was a lady she used to let me go up for nothing, this saved 6d which would buy a bar of chocolate. I would spend so much time taking in London from a height. However, the icing on the cake was a model railway shop in one of the arches under London Bridge station. This shop sold all makes including Rivarossi which I had only ever seen advertised on the back page of the one and only model railway magazine that I possessed.

Unfortunately this could only ever be window shopping but nonetheless it was the highlight of the day and of course, a railway was never far away and neither was a model railway shop. At the same time, visiting Gillingham Strand with all its attractions had become a regular expedition. En-Route I would call in at Grans for a cup of tea and a chat, it was a Grandsons duty. It was also, or so it seemed, to be a reciprocal duty of Granny to comb my hair before letting me depart. It started with liberally anointing my hair with Harry Freemans Brilliantine, in those days this stuff made a Dude look 'cool'. The actual combing process was painful as Gran's comb was hard with sharp teeth. My hair would be combed forward first and then the frightening bit was the parting where Gran would jam the comb down hard into my scalp at the parting and then gouge half my hair to one side and then repeat the same operation for the other side. In due course my anticipation of what was coming would make me bend ze kneez a little as the comb made contact with my head in order to lessen the possibility of my scalp being punctured.

It was on the return stroll from a train spotting session one lunchtime that I committed my first serious act of wombling. It was dustbin day and on the top of a bin outside a front garden gate in a posh area there sat a radio. I had been brought up to understand that nothing should be thrown away, it must be repaired and used again so, naturally I knocked on the door and asked if I could have it. 'Certainly young man' was the answer and I didn't wait for them to change their mind, it was gone in a flash. It was a Philco push button radio and a very heavy one at that, but luckily another train spotter, also called Paul, caught up with me and we took it in turns to carry it back to my house. Mum wasn't too pleased but my dear old Dad found a space on the bench in the workshop for it. It was then tested. It didn't work, why else was it being thrown away. 'Can you mend it Dad?' He explained that he really needed a circuit diagram to try and sort it out. We removed the back of the set and there it was stuck on the inside; a circuit diagram. To cut a long story short, he changed a valve and base from 7 to 9 pin or vice versa, chucked in a handful of bits n bobs and hey presto it worked. My Dad could mend or make anything. It was installed in my bedroom and lasted for many years until I started to dabble in electronics, but that's another story.

During my growing up process there were two particular fundamental aspects of life; music and humour, that occupied my thoughts, influenced my behaviour and also, as a consequence, probably shaped my personality. Those, together with a mechanical aptitude that I presume was inherited from my Dad created a magnetic skeleton to which only relevant (humorous, musical or mechanical) flesh would be attracted. No apologies for the unorthodox analogy. I looked forward to the lunch time broadcasts on the BBC Light programme of the Navy Lark and Round the Horn and also, if reception was good, radio Luxembourg. In previous editions my reference to music that evoked memories of railways or matters connected to them and my association of scenarios (Livingstone Crossing) and people (my Gran on a day trip to Gillingham Strand) to Giles cartoons really do typify how I used to perceive life. Growing up had also influenced my life in other ways, especially in learning. My Meccano set was the tool with which I learnt so much about mechanics and, in particular, the limits beyond which devices would not work.

There was an inevitable sad side effect to the learning process in that an increased understanding of how things work stole away some of the magic that I had otherwise seen in things as a small boy. Steam is still magic, I don't know why, but it is. Another sad aspect of growing up was the realisation that time was not in endless supply and in due course activities would have to be timetabled and have an allotted portion of this precious resource. This has become a slippery slope with little hope of ever retrieving a small boys' carefree way of thinking when time was of little consequence.

So many other memories that could be recalled if only something would trigger the thoughts to come flooding back. Who can remember what they had long forgotten from their childhood once there has been a little flame of something related. 'Hev Yew Gotta Loight, Boy'. (Allan Smethurst, the Singing Postman).

SPARK ARRESTORS

I remember a question being asked about spark arrestors at the annual general meeting and thought a few words on my limited experiences on this subject might be useful. Main line steam locomotives have their spark arrestors tested by running a train, usually at night, and being observed to ensure that they do not eject hot coals. I believe spark arrestors fitted to models should also be checked by the owner as what suits one loco might not suit another. I think the best way to do this is to work the loco at least as hard as it will be worked under passenger hauling conditions and make sure that the driver does not get burnt before passengers are hauled.

I remember that sparks used to be an occasional hazard when driving many years ago but they first became a real problem when my Father completed his 5" gauge 0-4-0 Ajax locomotive. This tended to fire bits of hot coal at the driver which was not very comfortable. Father decided that something had to be done. I believe that the problem was that we were working a relatively small locomotive hard and the speed of gas flow through the grate lifted the small pieces of coal. Larger locomotives did not suffer this problem as the gas flow rate was slower and the coal did not get picked up. The Ajax also had relatively short tubes so that the gas borne pieces of coal did not have time to cool down before they reached the chimney.

After speaking to a number of people my Father fitted a steel plate in front of the tubes so that the exhaust gases could not pass directly from the tubes up the chimney. The plate had no holes in it. The gases were made to flow around the sides of the plate. The plate was held in place by being shaped to hook over the superheater hot header at the top and resting on the bottom of the smokebox. It could easily be removed for tube cleaning. It was very effective, probably because any piece of hot coal large enough to burn someone flew forward and hit the plate before passing up the chimney. It was possible to see the impact marks of the coal on the plate at the end of the run. The particles flowing around the sides were too small to burn as there was not sufficient energy in them. I consider that this point is very important. The only problem with this spark arrestor was that it did upset the steaming of the engine to some extent.

Some time later I was lucky enough to come across a scrap oil filter at work. This came out of a large diesel engine (about 2,000 hp) but I have seen similar ones used in turbine oil systems. The filter was a felt type material supported by a woven steel mesh. The mesh looked useful and I retrieved it from the scrap bin. The mesh is made of 1/64" wire on a 1/16" pitch. The steel is some sort of stainless, although it is magnetic. A screen of this material was fitted to the Ajax in place of the steel plate. It was semi circular in plan view and sat between the petticoat pipe and the superheater header. This was most effective. The engine steamed better than with the plate fitted and did not throw sparks. I believe that this was because any particles passing straight up the chimney had to be small enough to pass through the mesh, i.e. they had to pass through a 3/64" square hole. A piece of hot coal this size does not contain much energy and will cool rapidly as it flies through the air. Any pieces of coal that did not pass through the mesh had to fly around the front of it and this must have allowed it sufficient time to cool.

When building my BR Class 2 I felt it was necessary to fit a spark arrestor as the boiler is similar in size to the Ajax and I thought that it would probably throw sparks. The spark arrestor is a complete tube of the filter mesh and sits on the bottom of the smokebox. Its fit around the outside of the petticoat pipe with about an 1/8" radial clearance and 3/4" overlap. It is easy to remove because the petticoat pipe does not have a flare and can be pulled from the top of the chimney. The spark arrestor can then be lifted out of the smokebox door. The edges of the mesh are folded back on themselves by 1/4" to stop it unravelling. The tube is kept together at the joint by 'sewing' some fine stainless wire through the overlapped edges of the tube. There is a slot in the bottom edge for the blower pipe about 5/16" wide but this does not cause a problem, probably because it is to one side and below the level of the blast pipe cap. The mesh has lasted for many years and is rather battered but still works. It needs cleaning occasionally.

SUE'S SPOT

(Picture of me on yet more essential club business.)



Welcome to the Christmas 2005 Newsletter, I had every intention of it being earlier than usual, and nagged my contributors accordingly, they all came up trumps and I didn't. Whilst racking my brains for excuses, the best one I can come up with is that I have been waiting for all the blurb to arrive from the Southern Federation on the new boiler testing rules, and for the December committee meeting to make this as up to date as possible. Acceptable? Look on the bright side - if I was a supermarket, you'd have had the Christmas Edition in August.

So in no particular order, here we go:



Many congratulations to Edgar Playfoot (pictured on the left receiving the award from Barry Glover, over from Australia – don't know the other people lurking in the background), being the third member from Maidstone to win the coveted Australia Award at the Autumn Southern Federation Rally (Martin won in 1993 and Bernie in 2003). A lovely sunny day in September, hence the shadow of a tree over Edgar's fine model of a 5" gauge Princess of Wales. Absolutely no truth in the rumour that we all nagged him to death to go to the rally (why, only some of us did).

Thanks to Tony Jones for arranging a visit for the members to look around Cranbrook Windmill. About two dozen of us made the trip, and really enjoyed it. Thanks to Tony for his article on the history of the windmill.

Tonbridge Club have again offered places on their coach to the Model Engineer Exhibition at the Ally Pally, on 29th January. However, we are awaiting confirmation, the price will be £16 including entry ticket, and if you want to go but your name is not yet on the list in the Clubhouse then PLEASE TELEPHONE MARTIN BY THE END OF DECEMBER (01622 630298). We need to know urgently who wants to go, for if we cannot fill our allocation of seats, the trip may be cancelled. All those on the list will be kept apprised of what's happening.

The following Sunday is the Club's annual Sunday lunch at the Grangemoor Hotel in Maidstone. A copy of the menu is in this newsletter, the spare loose copy you can use to mark your menu choices and return to Pat Riddles (or myself or Martin if she's not around). By January Club Night please, which is the 6th January.

The Family and Friends Day on 11th June was an outstanding success, with everyone really enjoying themselves, so much so that we will be repeating the event in 2006, on Saturday July 1st.

The Sue's Holidays Including Trains Week (commonly known as a S.H.I.T week) is open to all members, although obviously there is a maximum number of people who can participate. But if you don't and you'd like to go and play trains at some different tracks, and have a lot of fun, then please contact me, Sue, as soon as possible, no later than January Club Night 6th January. For 2006 the intention is to stay at a site (self-catering) in Yorkshire, from 17th to 24th June, visit four tracks, two days off for good behaviour (free time, likely places to visit York and the Railway Museum, or a big steam railway). It's an adult only holiday, so nobody has to worry about children, which makes it more relaxing, and is why we don't hold it in the school holidays.

The wives can come as well, and usually relax at the tracks, or do their own thing, exploring or shopping, while the fellas drive their locomotives. We eat out for lunch and dinner so there's minimum to do except enjoy ourselves. Interested?

Another piece of legislation to affect us and every club has been the Children's Act. To cut a long story short, it's obviously to protect children from the nasty people in this world, but it does mean everyone has to be careful as even a well-meaning action could cause enormous trouble if misconstrued. Hence one shouldn't even touch a child to lift them onto a trolley..... Anyway, the safest option for our few junior members appears to be ensuring they are accompanied at the club by a parent or guardian.

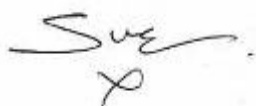
Please keep your up to date e-mail addresses advised to the Secretary at all times. You never know, he might send you something interesting!

Club nights: a small charge is now incorporated to cover refreshments. Where else will you get decent victuals and entertainment for an evening out? The club runs on a shoestring you know, compared to some others, and it is excellent value so I hope no one will see fit to complain. January Club night is a chance to come and show something *you* have filmed of interest during the last year – anything, say, from about 10 to 20 minutes – in case lots of cameramen turn up. There's only a bit from Martin, for a variety of reasons (pick the one you like best): a. he's afraid you're all getting bored; b. he's not shot loads this year; c. it takes years to put together; d. the end of the world is nigh (sorry getting facetious now, but who knows). February: I'm looking for a volunteer(s) to run the Quiz Night, so let me know by January Club Night if you're willing to be question master ("I'll have a P please Bob...") or it'll be me and questions on Bleak House and Star Trek... you have been warned!

Skip now to the photo competition..... Honestly, we had 2 last rounds in the 2005 as I was worried about winning, but I won both, so thank you voters (would you have voted for me if you'd known it was my photo.... I wonder!) The idea is to vote for the best picture taken by a member and the topic for 2006 (as suggested by Pat) is "Trains & Boats & Planes" which covers a far wider spectrum than last time, so you can start taking pictures of any of these, any size, anywhere, with or without anybody in them, maybe some might get all of them in one picture! But NO CAPTIONS or DESCRIPTIONS as all we want to see to vote on is the actual picture, and they will be anonymous like last time, and all who attend the night can vote. Again there will be a prize for the best picture; to be featured on the cover of the following newsletter, the runner up will also get a prize, which this year went to Trevor Harley. So get snapping, the competition is a month earlier in 2006, in October. Photos to be either 4 x 6 or 5 x 7 (inches, I'm not a metric person), maximum 3 entries per photographer/member (it's the photographer who wins the prize, but a member can submit pictures on behalf of one who can't make it).

So for December Club Night, this was a suggestion from Vic (to prove I do listen, why sometimes I even remember!). A lot of people have slides of great locos and suchlike from a bygone age before print quality progressed and the digital age pixellated in. So up in the loft everyone, to dig out a favourite few, and we'll show them at December Club Night. Every picture tells a story, so if you've got a story to recount as well, then great! Should be good!

As this now brings me round to next Christmas, and I haven't got through this one yet, it must be time for me to shut up. Next newsletter, well, let's aim for one in May, shall we? Wishing you all good health and happiness in the future.

A handwritten signature in black ink, appearing to be 'Sue', with a small flourish underneath.

BOILER TESTING

The boiler testing code as required by our insurers has recently been revised and the new code comes into effect on 1st January 2006. From that date, no boiler can have a new entry on the old style certificate, but these will continue to be valid until they expire, at which time they must be retested under the new code.

Boilers being constructed by members should be produced for inspection to the boiler inspectors during their construction so that the inspectors can be satisfied that the internal parts of the boiler conform to the drawings and that the soldered joints are sound.

New copper or steel boilers will be hydraulically tested to twice (2X) the working pressure which will be held for at least ten minutes. The hydraulic test certificate will be valid for four years. On subsequent retests, which are carried out at one and a half times (1.5X) the working pressure, the certificate for steel boilers will be valid for two years and for copper boilers, four years. The total water capacity of the boiler will be measured and recorded on the certificate.

All boilers must also undergo an annual visual inspection and steam test, during which the water feed arrangements, of which there must be at least two independent means of feeding water, are operating correctly as well as the pressure gauge, whistle, water gauge and safety valve operation. The safety valve must not allow pressure to rise more than 10% above the working pressure with a good fire, water at normal level and the blower hard on. At every successful annual inspection, a steam test certificate will be issued. The hydraulic certificate is only valid if it is accompanied by a steam certificate issued during the previous fourteen months. When a hydraulic certificate is issued, part of it is sent to the Southern Federation who will maintain a register of boilers tested under the new code. Boiler test dates are also recorded by the Hon. Secretary and the expiry dates are displayed on the club notice board.

All boilers will also be issued with a boiler test record card which contains a log of the details of the boiler as well as a record of tests carried out and any work done on it during its life. This is not a boiler certificate but merely a historic record of the boiler.

This is only a quick outline of the new code. A copy of the full code will be available to read on the clubhouse notice board, or a copy can be obtained from the Hon. Secretary. It is likely that the club will have to make a small charge for every boiler test carried out as the certification now involves much more paperwork which the club has to purchase from the Southern Federation.

Members wishing to have a boiler test must make arrangements with two of the club's boiler inspectors. Tests must be carried out at Mote Park and preferably on a Sunday morning before public running.

The boiler inspectors are:

John Barrow	(01634) 863915
Dave Deller	(01732) 841194
Graham Kimber	(01732) 845931
Peter Kingsford	(01233) 712086
Martin Parham	(01622) 630298

Monday December 26, 2005: Boxing Day Run

DIARY DATES 2006

compiled 10/12/05

Friday January 6:	DVD & Video Night – shot by members over 2005 £1 per head
Sunday January 22:	Coach Trip to the London Model Engineer Exhibition with Tonbridge?
Sunday January 29:	Annual Sunday Lunch at The Grangemoor Hotel, Maidstone
Friday February 3:	The Great Quiz Night £1 per head
Friday March 3:	Annual General Meeting at Mote Park
Sunday March 26:	First Public Running Day (British Summer Time starts & Mothers Day)
Friday April 7:	Bring and Buy Anything and Crumpet Night £1 per head
Wednesday April 19:	Members Playtime Run
Friday May 5:	Bits & Pieces & Fish ‘n’ Chips + Pudding £6 per head
Wednesday May 17:	Members Playtime Run – clockwise running
Friday June 2:	Evening Run & Jacket Spuds £2 per head
Wednesday June 21:	Members Playtime Run
Saturday June 17-24:	MMES 5 th Annual Holiday - S.H.I.T. Week
Saturday July 1:	Family & Friends Day at Mote Park
Friday July 7:	Evening Run & Pizza + Salad £2 per head
Wednesday July 19:	Members Playtime Run
Friday August 4:	Evening Run and Barbecue (Bring your own food for this)
Wednesday August 16:	Members Playtime Run – clockwise running
Friday September 1:	Evening Run & Fish ‘n’ Chips + Pudding £6 per head
Wednesday September 20:	Members Playtime Run
Friday October 6:	Photo Competition, topic: Trains & Boats & Planes £1 per head
Wednesday October 18:	Last Members Playtime Run of the year
Sunday October 29:	Last Public Running Day (British Summer Time Ends)
Friday November 3:	Bits & Pieces and Crumpets £1 per head
Friday December 1:	Members Old Slides Show and toasted teacakes £1 per head
Tuesday December 26:	Boxing Day Run

All evening events start at @ 7-45pm. Please note that events/dates are likely be added before the next newsletter. The copy of this Diary kept on the Club Noticeboard is kept as up to date as possible (when I remember!). The Club website is at www.maidstonemes.co.uk. To cover my butt, I better say dates *may* change or events get cancelled, although this is usually doesn't happen. But who knows in this day and age. If in doubt, please check with us. But we don't claim to know everything!

ANYTHING ANYWHERE ELSE KNOWN ABOUT SO FAR YOU MIGHT LIKE TO GO TO:

- December 29-31: Model Engineer Exhibition at Sandown Park
- January 20-22: London M.E. Exhibition at Alexandra Palace (Coach Trip 22/1)
- February 17-19: Brighton Modelworld at the Brighton Centre
- March 11: Southern Federation AGM at Milestones Museum, Basingstoke
- May 5-7: Model Engineering Exhibition at Harrogate
- May 20-21: Southern Federation Spring Rally then Open Day at Bristol SMEE
- May 27-29: Strumshaw Traction Engine Rally near Norwich
- June 3-4: Vale of Aylesbury MES Traction Engine Rally
- June 10-11: Sweet Pea Rally at Guildford
- July 1-2: I.M.L.E.C. at Fareham & District SME
- July 8-9: Guildford MES Model Steam Rally & Exhibition
- July 15-16 Peterborough SME Sacrewell Traction Engine Rally and Gathering
- July 22-23: Dreaming Spires Rally at Oxford S.M.E.
- August 18-20: Model Engineering Exhibition at Thornbury Leisure Centre Bristol
- September 9-10: Birmingham SME Rally
- September 16-17: Southern Federation Autumn Rally then Open Day at Brighouse & Halifax MES
- September 29-October 1: Model Engineering Exhibition at Pickering
- October 13-18: Midlands ME Exhibition at Warwickshire Exhibition Centre, Leamington Spa

That's all folks!

Merry Christmas and Happy New Year!