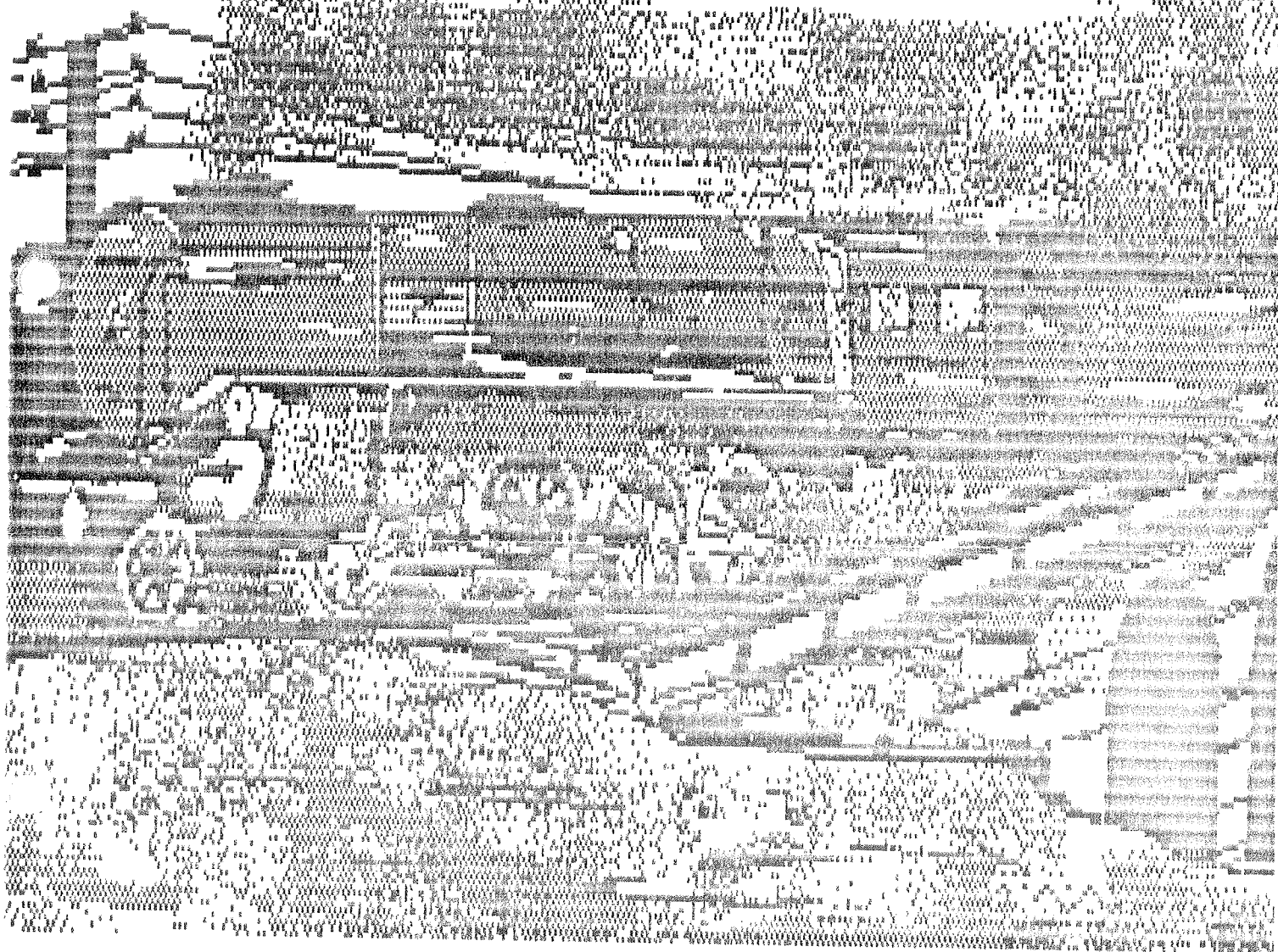


MAIDSTONE MODEL

ENGINEERING SOCIETY



NEWSLETTER

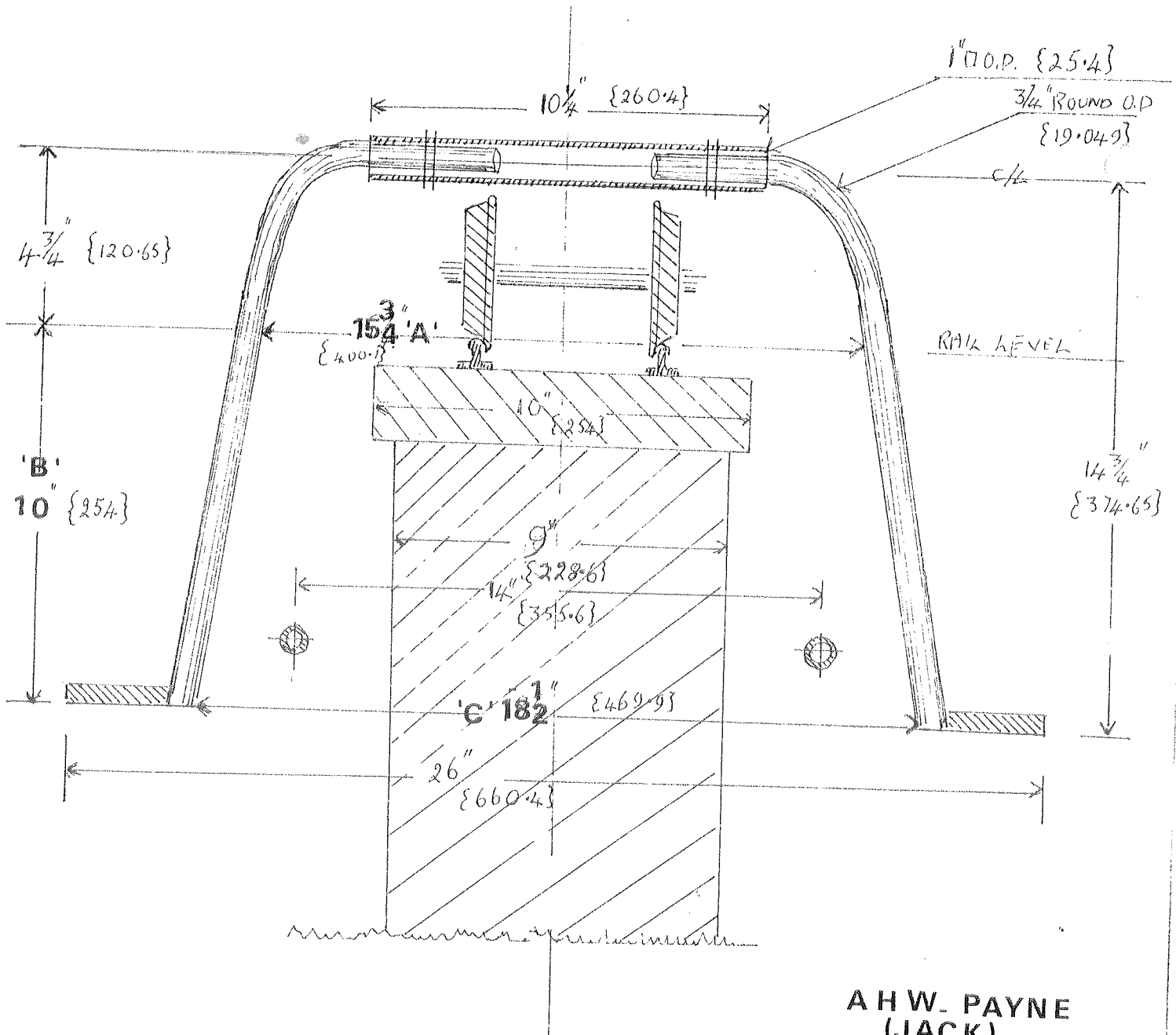
— WINTER 1995

MME S

LEG GUARDS MOTE PARK TRACK

ABOVE RAIL LEVEL $15\frac{3}{4}$ " MEASUREMENTS
CAN SUIT ANY TROLLEY

ESSENTIAL MEASUREMENTS ARE; RAIL
LEVEL 'A', DOWN TO 'B', THEN TO 'C',



A H W. PAYNE
(JACK)
OCT; 1986

SOME UNUSUAL LOCOMOTIVES

By Andy Probyn

Old books are a great source of interest, especially if they deal with technical subjects. I found some encyclopaedia recently, from the 1860's. I did not have the full set but fortunately I did have "L", and there between "Locomaria" and "Locris" was Locomotive, and a nice set of prints to illustrate the section.

As you will see some of the locomotives dealt with are quite extraordinary, in fact nothing like I have seen before. Having said that, the first loco is a very ordinary Manning Wardell 0-4-0T, this loco and its more common 0-6-0T counterpart were the mainstay of this company for the next sixty years. The second locomotive is an early Austrian express loco which at first glance looks quite ordinary, however a closer look at the cylinders shows something unusual. There are two on each side both working on an outside crank and both inclined towards the driving axle. According to the encyclopaedia the idea is to equalise the reciprocating mass to enable the loco to run more smoothly at speed. To quote "Each end of the axle is driven by a pair of cylinders lying side by side, in which the pistons move in opposite directions, and thus a balance of inertia is effected of a much more perfect kind than can be obtained by any system of revolving counterpoise". If that does not say it all then I don't know what does! I doubt that this was a success as I know of no other example of this arrangement, however this loco is very similar to later Austrian engines made with tandem compound cylinders. These engines had outside frames, with outside Stephenson's gear between the crank and frames. Such an arrangement does not look so extraordinary as a development of this earlier pre-compounding locomotive and there is no doubt that they were very successful.

The bowl on top of the boiler is in fact a built-in funnel for boiler filling. In very cold weather locomotives could freeze up solid, to prevent this the boiler was drained and the funnel was ready for filling when the loco was needed again. It would be a most useful addition to a model, no need to hunt for the plastic funnel.

The third locomotive almost defies description, it is a French 0-2-6-2-0T with the driving wheels at the ends and the carrying wheels in the middle. This makes it a "double single" as expounded by Webb on the L.N.W.R. about twenty years later but there the similarity ends. There are four cylinders (apparently without crossheads) and four sets of outside Stephenson's gear. The locomotive is described as being "like two engines fixed end to end with an enormous boiler between". There are separate regulators for each set of cylinders. The top boiler would appear to be a sort of steam reservoir and dryer, it was not unusual on French locomotives of this time. Both the regulators and safety valves are mounted on this boiler and must be at full boiler pressure, unlike the "Crosti" boilers used in Italy and experimentally on some 9F 2-10-0's. The crosti boiler looks similar but is simply a large feed water heater and does not work at boiler pressure. It usually runs beside or as on the 9F's under the boiler proper, I suspect this top mounted dryer must have died out when the boilers got too large to allow room for them. The only modern counterpart of this steam dryer I can think of is some large American Mallett locomotives where the front section of the boiler was used as a reservoir and re-heater for steam passing from the rear high pressure unit to the front low pressure, though even here this was a separate item from the boiler and works at a much lower pressure. Back to the illustration, note the tank under the boiler, elaborate injector on the boiler side, the sand box mounted on the chimney and the chimney cover with its convenient handle in the cab. It can't have improved steaming if this was left closed! This loco is a passenger type and is noted as having unusually small driving wheels. The freight version is said to have two sets of 0-6-0 engines and must have been even more impressive than the locomotive illustrated.

Once again an interesting parallel can be drawn with later locomotives in particular the Du Bousquet articulated 0-6-2+2-6-0 tanks built in the early 1900's. These were most successful, some still working into the 1950's. They must have looked very similar to the earlier freight engines, though the cylinders are in the centre working outwards rather than on the ends working inwards, and a larger conventional boiler was used.

All the locomotives were on show at the 1862 London Exhibition and obviously represented the most up to date ideas of the day, there are a number of other interesting locos illustrated, more of which in the next instalment.

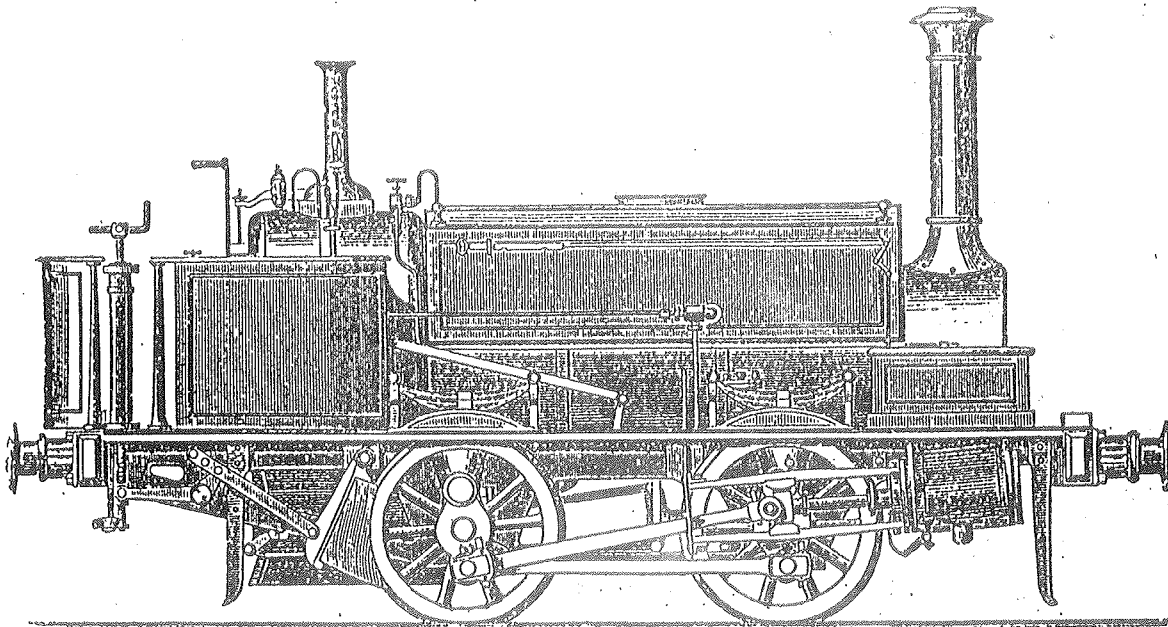


FIG. 1.—MANNING, WARDLE, & CO'S SMALL LOCOMOTIVE—ELEVATION.

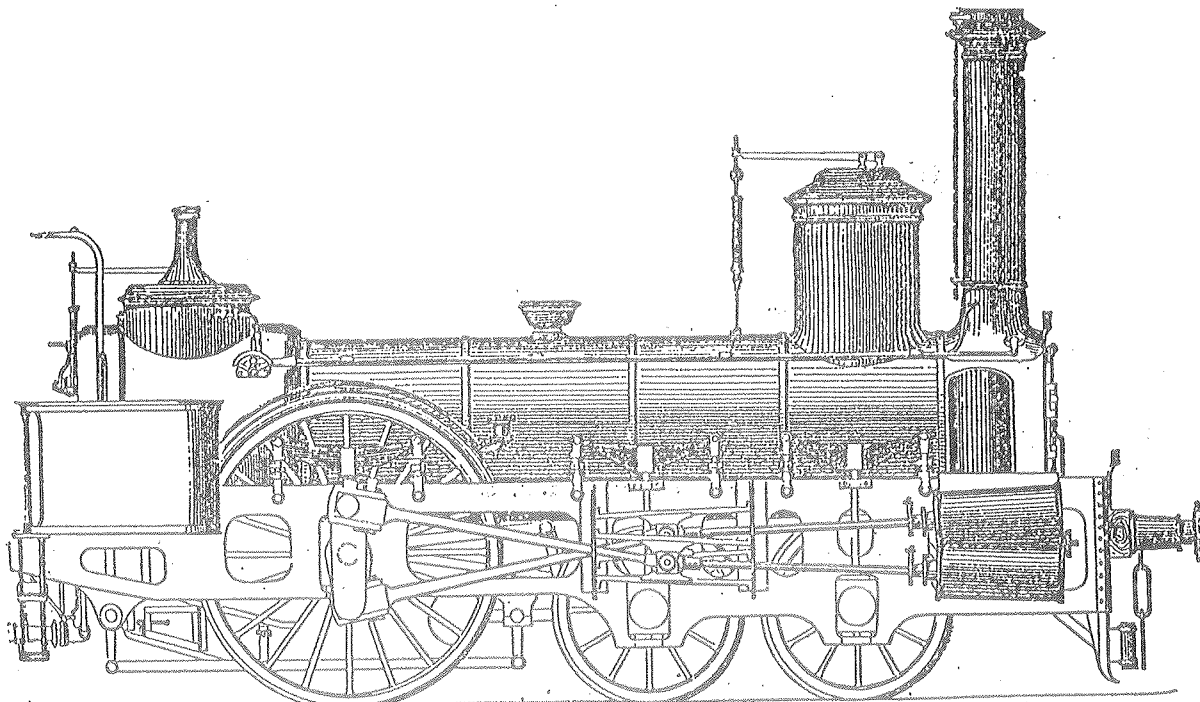


FIG. 2.—AUSTRIAN EXPRESS LOCOMOTIVE—SIDE ELEVATION.

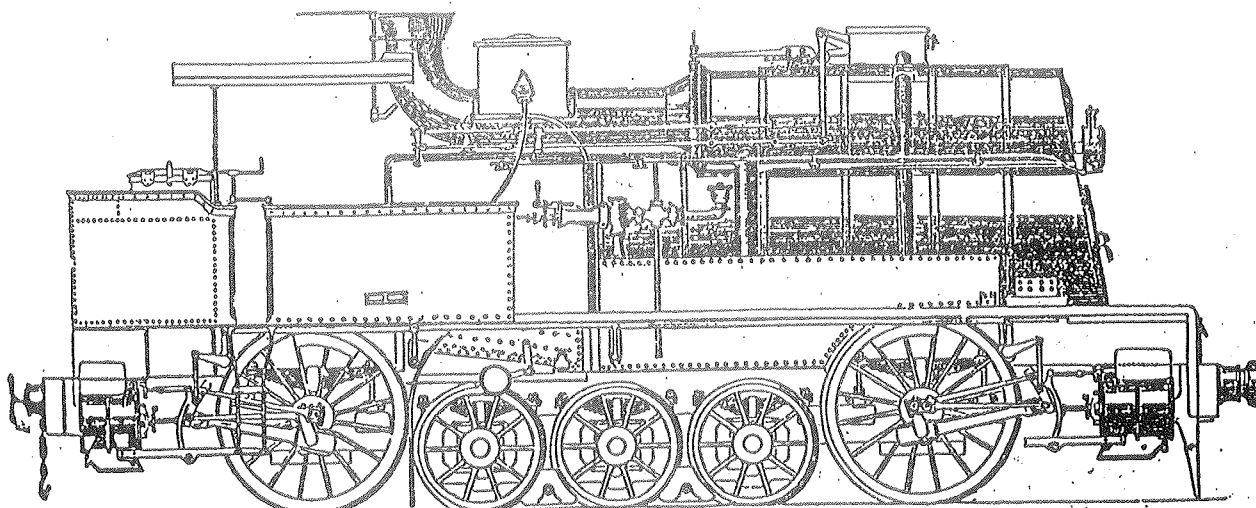


FIG. 3.—FRENCH TEN-WHEELED FOUR-CYLINDERED LOCOMOTIVE—ELEVATION.

This'n'That
by
J.Ewins

There has been some time since the last full News Letter appeared, time in which to ponder upon a number of diverse topics which have cropped up during a period when I have at last progressed with my 'Schools' to the point of giving it some trial runs on my home track. Testing the Schools has uncovered some new effects which I can add to a number of points which have arisen during the period covered by the appearance of these notes. Members and others should understand that the material presented to them and indeed all my writings are accounts of my own experiences in the field of model locomotive construction, operation and experiment, built up over a period of well over half a century. I do not engage in surmise and conjecture presented as fact as do some other writers in the media. I am well aware that to fill the pages of the various periodicals each month or fortnight as the case may be it is necessary to pad out the copy but it is unfortunate that the uninitiated have no means of separating this padding from hard fact. How nice it would be if editors could persuade contributors to indicate what is actual experience and what is other wise. It would help also if the 'credentials' of contributors could be published and pseudonyms disallowed. The credentials should include such items as the number of locomotives built, the period of activity in the field and the extent of track experience. I always say that newcomers should take notice of what people do and not what they say. While carping in this vein, the reason why most long established contributors continue to present designs little different from those introduced by L.B.S.C. many decades ago is that they do not make and run models themselves and are therefore not in a position to detect faults and short comings perpetuated by their plagiaristic activities. Time marches on and fresh thought is brought to bear on all the facets of design contained in model locomotives. I have experimented with new materials as they have appeared and have introduced a number of ideas and used them in my locomotives which, with one exception, are available for inspection and to be tried out by members so that they may form their own opinions as to their efficacy. This may sound like blowing ones own trumpet (which it is) but I have come to realise that this is necessary occasionally, in order to pre-empt those who will use other's music to blow on their own trumpets!

Materials

Over the years I have tried many new materials and processes as they have become available but one by one I have rejected them in favour of those available when I first started with the hobby. There are some exceptions, Easy-flo silver solder being one and free cutting steels including stainless steel another. High speed tool steel was just becoming available when I started and I have stuck with this. Oxy-acetylene was available but not to the likes of me and bottled petro-gas was not yet introduced. All these things are taken for granted by today's model engineers but what is not generally appreciated is that the high performance now obtainable from model locos could have been had 80 years ago when Greenly wrote:- "1 1/4" to the foot is the smallest scale giving an engine which may be ridden upon conveniently; and its adoption is to be recommended to those who wish to construct a locomotive of the smallest dimensions and of sufficient power to carry one person at least, at a high speed continuously". What would Greenly have thought if he could witness I.M.L.E.C now! It is a fact that the current performance of locos could have been obtained all those years ago using available materials and techniques, it was only the know-how which was missing. New materials which I have tried as they have appeared often flounder at the temperatures encountered in a model locomotive the exception being P.T.F.E. Adhesives and 'O' rings should be avoided except where temperatures are low and even here there are snags when 'O' rings are used against brass in the presence of water. 'O' rings are treacherous things as was discovered with the Space Shuttle. The trouble is that they look

very nice on the drawing board but they have nasty habits in use. Rubber, being high incompressible, demands application experience to get things just right and certainly the beginner should leave them alone. If motor car designers make a mess of it what chance have tiro model engineers? 'O'rings are sometimes advocated for piston rod seals but they have the disadvantage that when they need renewal the piston or crosshead must be separated from the piston rod which can be quite an extensive operation. In my article on Kinematic Design which you have had I showed an alternative to an 'O'ring in the form of a P.T.F.E. gland such as I have used on my 9F and the Riddle with every satisfaction. I have used these seals again on my Schools but one of them gave trouble which I was not able to rectify readily for the reason given above. I have solved the problem by inserting graphited yarn to back up the P.T.F.E. The lesson here seems to be to use the good old fashion graphited yarn in the first place which can be replaced without dismantling anything. I have used this on my 28 year old 0-6-2T and have never replaced the packing during the 3000 miles it has covered. The only unconventional aspect of the glands on this engine is the employment of bronze washers to trap the packing whilst allowing the rod to move laterally in the gland as shown in my article on Kinematic Design. This seems to be the complete solution. I have gone farther on the schools and fared worse!

Injectors

Interest has been shown recently by some of our members and one in another Society in my improvements on the basic Linden design. Linden was responsible in the thirties for introducing in a commercial way an injector vastly superior to any then existing and this has now become the prototype for most of those commercially available today. In addition, designs have been published from time to time intended to be used by individuals wishing to make their own. These designs often bear a superficial resemblance to the original Linden but lack certain important details not readily visible to would-be copiers. Linden never published details and it was left to C.M. Keiller to lift the curtain on what was then somewhat of a secret. Unfortunately Keiller never got to the bottom of it and was unaware of details in Linden's design associated with the ability of his injectors to suck water even when that water became hot and steam was leaking back from the delivery clack. I have a letter from Keiller saying that I could not operate injectors above the supply water level because injectors will not lift hot water. He evidently had not mastered this aspect of design as indeed others more recently have not. Keiller was the only one to publish accounts of research with injectors and said in 1943 that "finality has by no means been reached and a fresh mind on a job generally approaches the problem from a different angle" I did just this in directing my attention to the conditions which exist as the injector starts up. It is at this time that it functions as a vacuum pump and whether or not it will lift hot water depends on its pumping rate. I was familiar with vacuum pumps in connection with my work at University so I was able to optimise this aspect of design with the result that I can now produce injectors which will start against the most adverse conditions because they will pump away water vapour produced in the water feed pipe at a rate faster than it can be produced whilst at the same time maintaining sufficient vacuum to draw cold water through. In addition this action can proceed even when there is 100% blow-by from a stuck-up clack valve. Looking at Linden's design it seems that he came very near to achieving this result but failed to press far enough along the lines indicated above. Even the best commercially produced injectors do not have satisfactory starting performance with the result that unless conditions are favourable they jib. It is essential that for anything approaching 100% reliability that injectors must operate when conditions are against them. It is not sufficient that they just "work". The design modifications necessary to produce the above superior performance are quite easily carried out and concern the combining cone in the vicinity of the gap between the two halves of this. Our Fred LaRoche and Eric Mills of the Chelmsford Society have now both succeeded in carrying out these modifications with similar results to my own. The great advantage in this improved design lies not only in reliable starting under adverse conditions but also in the

possibility of using the injector above water level and thus being independent of the water valve.

A "New" Regulator

A feature of the Schools I am building is its regulator using "O"rings. This design was conceived some 32 years ago and was an attempt to produce a regulator which would shut off dead tight but would open progressively with no lost motion. Fig1 shows how this has been achieved. I have refrained from giving details of its construction until I was able to try it out in line with my policy as mentioned above of only writing from actual experience. I have to report now that so far it has worked exactly as intended. Only time will tell if there are any snags, I have for instance made it in brass being unaware at that time of the propensity of "O"rings to becoming stuck to brass under wet conditions. The seating surfaces would be better in stainless steel, or perhaps P.T.F.E. rings might be fitted. No doubt this design will be "invented" by others in due course!

Whistles

In the past I have found whistles difficult to get right, the bothers usually being associated with the phenomenon of over-blowing or screeching. Articles appearing in the Model Engineer some years ago were helpful but did not completely cure the effect. The trouble is related to the range of pressures over which one wishes the whistle to operate. One wants to have a good blast at low pressures with no screeching at high ones.

To obtain good low pressure performance the steam slot needs to be large and some designs put this as much as $1/32$ ". Such whistles will only work at high pressures if the steam supply is limited by a long thin pipe or in some other way which kills the low pressure performance. The solution I have come up with is to introduce a rudimentary pressure control valve in the form of a thin shim brass reed .005" thick and $1/4$ " wide arranged to cover a $3/16$ " hole in the whistle steam chest. At high pressure, this lifts off so limiting the pressure. Experiment has shown that a steam slot of about .012" width extending nearly half way around the whistle tube gives an acceptable bleep at 40 to 50 p.s.i. but does not over-blow at 90 p.s.i. if the reed is as shown in Fig 2. I have found the construction of the steam chest as indicated in this figure to be very effective but one must be careful to make the fit of that part containing the steam slot a sliding fit in the tube and afterwards sealing the side of this opposite the steam slot by solder or Araldite. Making the fit here too tight merely results in the steam slot closing in. If solder is used it is wise to insert a piece of .012 aluminium foil in the steam slot to prevent it becoming filled and to preserve the gap. The other end of the steam chest needs to be a good push fit to prevent the escape of steam. The little "ears" shown are a trick I have adopted from organ pipe practice where it is used to make them "speak" with no hesitation and they also serve to augment the sound by functioning as a short horn. The larger the diameter of the tube from which the whistle is made the more steam the whistle will use and the greater the noise it will make. I have found $5/8$ " dia to give a good volume and have used hard brass telescopic tubing obtained from Gordon Bradford. It is necessary for best results to leave the tube a good deal longer than is shown in Fig2 and tune it to the note you prefer using a good fitting sliding plug. It is a fact however that for a given mouth arrangement the greatest volume may not coincide with the pitch of the note you prefer. I don't know how to deal with this.

Boiler Testing

A friend came to me to with a boiler which had been tested at another club and failed because a weep was discovered inside the firebox. The magnitude of this weep was such that the owner was unaware of its existence because the engine had been steaming in a satisfactory manner. The boiler was failed under the rules of that club which lead me to think whether such a thing could happen in our Society. I was suprised to discover that there is no mention of boiler test conditions in our rules. I feel that this is not satisfactory and might lead to the sort of situation which has occurred where my friend was obliged to strip the engine down unnecessarily. Members will be well aware that our boilers must be tested in

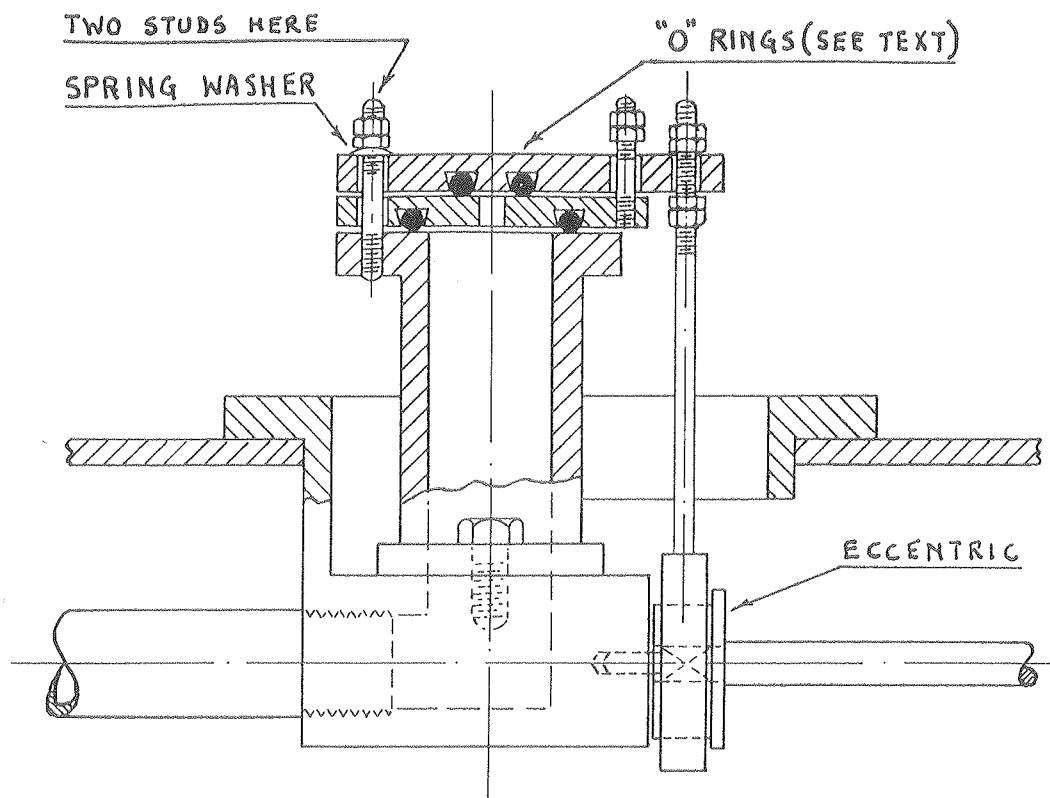


FIG 1

REGULATOR WITH NO LOST MOTION AND STEAM TIGHT SHUT-OFF

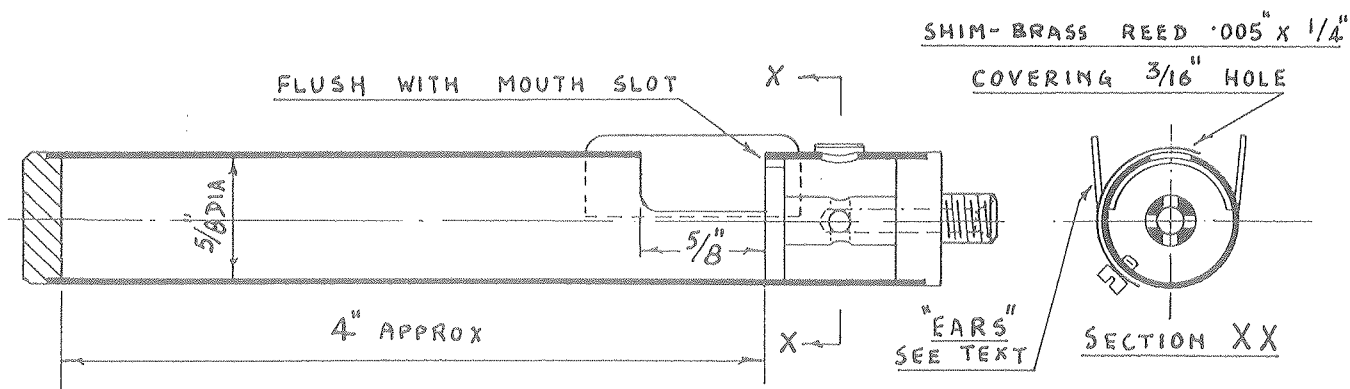


FIG 2

WHISTLE WITH SCREETCH INHIBITOR

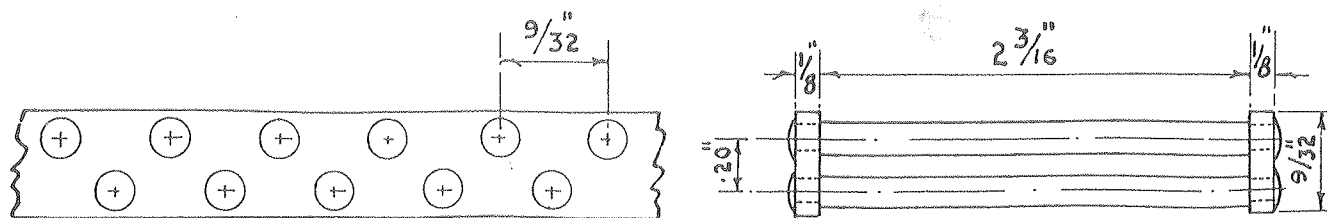


FIG 3

GRATE GIVING IMPROVED AIR ADMITTANCE

conformity with Southern Federation insurance requirements and if this were written into our rules the above situation would not arise. * ~~See~~ OVERLEAF

A New Grate Design

Fig 3 shows a modification to a form of grate I have found very satisfactory over a long period. The idea of using stainless steel (EN 58) rod type bars came to me some 20 years ago and I thought at that time I had "invented" it. About 6 years ago a great friend Mr C.L.Bennett passed away and some of his effects came to me. I doubt if many members will know that Mr Bennett was the first to produce an "0" gauge coal fired loco in 1923. I passed this model to the York Railway Museum and it can now be seen there. This little engine I discovered has a bar type grate which only goes to show that one must be careful in claiming a "first" for "original" ideas. However the modification to this type of grate which I now show has not I think been tried before and has the advantage of providing 40% increase in area available to upward flow of air into the grate whilst the downward path for burnt fuel to pass through is as normal. Some members will no doubt notice that by making the spacing of the top row of bars "normal" a 100% increase in air space can be achieved (by placing the bars at the corners of an equilateral triangle). If you do this you place a double obstacle of normal width in the path of the ash which may be counter-productive. This form of grate is very easy to make, lasts many times longer than cast iron and is cheaper.

Lubricator Drives

There has recently appeared in the Model Engineer an article advocating the use of roller clutches in this situation, the writer claiming that they are "positive". In truth this is just what they are not for they rely upon a critical friction situation between the spindle, rollers and outer race for their action. The diameter of the spindle is very critical and you cannot take any old piece of rod of nominal diameter and use it as was advocated in the article. Lubrication is so important in an engine that one must only employ truly positive arrangements and here again the old fashioned spring loaded click is the best. In the past I have used the short cut method of employing a piece of clock spring to act as both click and spring but the snag here arises from the hardness of the spring being less than that of the wheel it operates against coupled with the fact that it rubs at "n" times the rate that a single tooth gets rubbed on the ratchet (where "n" is the number of teeth on the ratchet wheel). The system soon wears out and fails. A better method if you must use this type of drive is to fashion the click from a solid piece of silver steel with an enlarged head serving as the pawl which is left dead hard whilst the rest of the spring is let down to blue temper. This is not surmise I have tried them all.

Four Facet Sharpening of Drills

Again in the Model Engineer articles are appearing giving details of a jig for the above purpose. This appears to be a well engineered piece of equipment but we have yet to see how the drills are to be accurately located using a Jacobs type chuck (not the most accurate of devices). My article on this subject using a "Reliance" device shows how this can be modified in about five minutes as compared with several week's work, with the additional benefit that the Reliance is intrinsically accurate and provides for the initial location of the drill. This seems to me to be another "tools to make tools" activity which is O.K. if you want to do that sort of thing in preference to making models.

My Amstrad V.D.U. tells me I have 8 lines left on this page and Jean has suggested I use them to wish all members the compliments of the season so:-

Merry Christmas
and
A Happy New Year
To All Members
from
Jean & Jim Ewins

By way of correction to the comments made by Mr Ewins in his article in this newsletter regarding boiler testing and our rules, we would like to point out that Rule number 1 of Section B of our Byelaws states:

"All engines put into steam under the auspices of the M.M.E.S. shall have a current certificate, indicating that the boiler has been tested to a standard at least equal to that required by the Society's insurers."

The standard clearly laid down by our insurers is as follows :

MODEL COPPER BOILERS
Recommended Minimum Testing Requirements
(Using approved methods of building)

1. All boiler tests are to be carried out by at least TWO competent club members, one of whom preferably should be a qualified engineer, but if not, they should have had several years experience of model boilers and gained both theoretical and practical knowledge of all that is required to build a safe boiler.

2. On all NEW BOILERS a thorough visual inspection should be made before commencing the hydraulic test, which is done with cold water to twice the working pressure or 150 p.s.i. whichever is the greater.

The test pressure should be applied three times (from zero pressure) and the boiler should then be examined for signs of collapse or distortion. Whilst any appreciable distortion would obviously condemn the boiler, any slight leakage need not, as these are easily corrected, whereupon the boiler can be retested.

3. The boiler inspectors should examine all fittings on the boiler during subsequent tests, when these tests are due the pressure to be applied need only be 1 1/2 times the working pressure.

4. The pressure gauge used for boiler testing MUST NOT be the one fitted to the boiler but a reliable, properly calibrated gauge (which should be regularly checked). Also, a red line is to be marked on the face of the gauge fitted to the model indicating its working pressure.

5. Safety valves subsequently fitted to a boiler must be able to prevent the boiler pressure from rising more than 10% above working pressure, however hard the boiler may be worked. This setting to be done at the first steaming of the boiler.

6. All boilers to be tested once every TWO years. After each test, the boiler inspectors should sign the boiler certificate, date it, indicate the working pressure and mark it valid for 2 years.

7. Any boiler built to other than a recognised published design should have its drawings and details of construction examined by the boiler inspectors for approval.

*** *** *** ***

Details of the testing of steel boilers are also laid down by the insurers and a copy of these requirements is available from the Secretary.

This is the Age the Railcard

Shortly after arriving at the University College of Swansea I decided to join the Railway Society. I certainly never expected to become Secretary but that's how it turned out in the third year.

The Society was fortunate in having several knowledgeable persons in the college to give us talks on railway subjects. Mr Jones the Assistant Registrar was a local railway historian, Mr Hooper from Electrical Engineering had worked in the B.R. labs at Derby and Prof. F.T. Barwell (retired) of Mechanical Engineering had been a colleague of "Bill" Stanier as he referred to the LMS CME. I asked him which class he considered to be the best express locomotive to have worked in Britain. "The 9F" was his reply, no doubt thinking of their 90 mph plus runs before authority clamped down on their use on passenger trains.

As important as our formal meetings however were our visits mostly by train to various parts of the British Isles. Here we were fortunate in three ways. The "day return" ticket could then be had over extreme distances even from London to Dundee. Now they are limited to fifty miles with the more expensive savers beyond that. Incidentally if your train arrived after 02.00 on the day of validity you could set off the previous day and as long as your return journey started before midnight you could arrive anytime the next day. This allowed three days travel on a day return and often proved useful. Student Railcards were the second boon allowing half price off peak travel. Finally there was "our man" in the Student Union, the Treasurer himself. The Union had to support with a subsidy any society with more than thirty members. Most fell in the spectrum from "Young Conservatives" to "Socialist Workers Party" and the Union gave them the absolute minimum of one pound per member. This left much more to divided amongst the more intelligent societies such as ourselves and the Motor Club. We received a subsidy of £25 per active member per year. Not bad I thought.

Our first trip was to B.R.'s last steam line the narrow gauge Vale of Rheidol. The route was extremely circuitous, via Newport and Shrewsbury and the start had to be at 00.38 with four hours in Cardiff Central waiting room in order to get a ride on the Rheidol line at all.

It was a Gala Day on the Vale of Rheidol with a brass band playing on the platform as our train pulled in. This was to celebrate the diamond jubilee of the line's opening in 1902. Two of the 2-6-2 T engines, "Prince of Wales" and "Owain Glyndower" were in steam and had been recently repainted in VoR golden ochre and GWR green liveries respectively. Until then they had been painted in rail blue with the B.R. arrow symbol. The third engine "Llewellyn" was under repair and has since appeared in its early B.R. livery. All of the engines have been converted to oil firing and from the front coach the sound of the burners was louder than

the exhaust. Due to our tight schedule we did not have time to visit the falls or triple bridge at Devils Bridge which was probably just as well as by the look of the turnstiles they would have been obscured by crowds of milling Mancunians. We returned straight away to Aberystwyth where the return of an excursion to Lichfield was waiting to depart. The idea was to change onto the following service train at Welshpool thus obtaining haulage from two extra Class 25 diesels. The reason for double heading was due to low power and low reliability. If one engine broke down the other would be left to haul the train, which was important when the nearest rescue engine was at Shrewsbury. Sure enough one engine expired at Machynlleth. The remaining one struggled on up Talerddig bank at about 10 mph until we were so late we were way behind the timings of the following train onto which there was now no point in changing as our last Shrewsbury - Cardiff connection would have long gone. Not stopping at Shrewsbury we continued on to Wolverhampton where one of our number claimed that in view of the extreme delays we had suffered B.R. might hold the last Newcastle - Plymouth HST for us and went off to arrange this with the platform staff. I was sceptical but on arrival at Birmingham there it was, having been held 20 minutes for us. The Cardiff train incidentally could not reasonably have been held as it would have been delayed for well over an hour. The day was saved, reaching Swansea by a connection at Bristol Parkway.

Whilst North Wales has its Great Little Trains preserved railways in South Wales are much rarer animals. We decided that the occasional day working on one would be a good idea. The Brecon Mountain Railway is a new narrow gauge line on an old standard gauge trackbed near Merthyr Tydfil. It was really too far to go from Swansea. The Lower Swansea Valley Line was conversely almost on our doorsteps but this area of dereliction and plastic garden centres was not a pleasant place to spend a day. It also suffered from continual vandalism. This really only left the Gwili Railway near Carmarthen, a line with high hopes and not much else in the way of track or operable rolling stock.

It began life as the Carmarthen and Cardigan Railway with every intention of linking these two towns, one on the Bristol Channel the other beside Cardigan Bay. Financial problems eventually led to the route terminating at Newcastle Emlyn in 1881, for want of anywhere better to terminate at, as Cardigan had by then been reached by a branch from Whitland. However enter the businessmen of Manchester who had a dream of an alternative deep water port to Liverpool in far South Wales. They proposed the Manchester and Milford Railway to run from Caersews in mid Wales on the Shrewsbury - Machynlleth line to Pencader Junction on the rural C&CR. The line from there on to Milford was already in existence. Construction began at the Pencader end and the line headed straight for Caersews. Unfortunately they underestimated the barrier of the Cambrian Mountains which lay between. It would have required engineering on the scale of the Settle & Carlisle line to cross this obstacle and their finances would not stretch

to it. Instead an Act was sought and granted giving powers for a "branch" line from Strata Florida to Aberystwyth going off at right angles to the existing route. Once built they quietly forgot they were ever going to Manchester and the "branch" became the main line. As a through route it closed in 1965 after flooding although what is now the Gwili remained until 1973 to serve a dairy. Incidentally the narrow gauge trains at Aberystwyth now use the old M&MR platforms. The Gwili Railway's aim is to reinstate the line between Carmarthen and Llanpumpsaint a distance of 10 miles. When we first visited the line they had 1.75 miles of track with one point and one working locomotive. Eventually we reballasted through the station, installed two points and a siding, painted the diesel shunter and a coach, hacked away at endless fast growing weeds and laid new track on the extension northward. It was hard work but at the end of the day came the ride back to Bronwydd Arms from the extension site in a PW trolley. One good shove at the top and it rolled the whole 1.75 miles into the station. On one occasion the trolley was loaded with two tons of dirty ballast to be dumped at Bronwydd Arms. Drizzle had severely impaired the effectiveness of the one operable brake shoe, a fact not appreciated until the first (and final) application came to be made. The brake's handle had incidentally broken off and it had to be applied by leaning on a five foot ganger's spanner. From a speed of about 20 mph on the falling gradient towards the station we fortunately managed to stop a few yards from the uninviting buffers of the diesel shunter. We always applied the brake earlier after that!

Being fairly close to Fishguard we decided to do an Irish tour going and coming back overnight on the ship from Fishguard to Rosslare, which is the principle port in south east Ireland. It has three stations Harbour, Town and Strand. Changing at Strand illustrated well the rural nature of southern Ireland as only a few houses were visible across the fields. The signals here were of lower quadrant style but painted fluorescent orange. It looked a bit gaudy but was clearly visible from a distance.

Ireland is of course on the broad 5ft. 3in. gauge which could theoretically lead to greater stability at high speed. However high speeds are not reached on many lines, that from Rosslare to Dublin running at the roadside and along a quay in places. This is the equivalent of the London - Dover line running through the streets of Chatham say!

On arrival at Dublin Connolly we made the transfer to Heuston station by CIE bus (they operate both the trains and buses). The bus got stuck in a traffic jam however. The cause turned out to be a Guinness tanker which had crashed outside the brewery gates. The Garda held back onlookers as to their consternation the precious liquid leaked down the drains into the adjacent River Liffey.

The train for Cork was very familiar, B.R. Mk 3's (suitably re gauged of course!) but with automatic sliding instead of slam doors. We would have gone on to Tralee, the furthest west that can be reached by rail in the British Isles, but could not due to

connections with the ship at Rosslare. Thus Limerick was our target and in true Irish style we reversed into and out of Limerick Junction when travelling in opposite directions! There was not even enough time to send a postcard before setting off again for Rosslare via Waterford and thence on to Swansea.

"The Red Dragon" was a former Paddington - Swansea express and was chosen as the title of a steam special from Newport to Shrewsbury to mark the 25th anniversary of the Monmouthshire Railway Society. It was the first main line steam excursion we travelled on and was a disappointment. The train started from Swansea on a Sunday morning one week after the end of term so everyone had to travel back overnight and spend six hours in the waiting room there. When "Drysllwyn Castle" took over at Newport it made a slow run to Shrewsbury and lost time even though run pasts had been cancelled. At Shrewsbury the train was left away from a platform for an hour whilst the loco was watered. It was then shunted into a platform and after five minutes of viewing the loco we were off again. Way behind time we reached 65 mph or more on the way back but still arrived late.

The "Cumbrian Mountain Express" was a different proposition however. After starting on our old friend the 00.38 we joined the special at Crewe. 4472 "Flying Scotsman" took over from Carnforth to Hellifield with a photo stop at Wennington. Then it was the turn of 850 "Lord Nelson", which took the train over the S&C to Carlisle. Being February I expected the arctic conditions in the Pennines to deter an spectators but hundreds lined the route especially at Ribbleshead Viaduct. Few passengers leaned out of the windows for long in the bitter wind, but what was it like on the footplate? The weather could have been much worse than that.

Although no use of a railcard was made I could not conclude without mention of the 3rd year field course to Majorca to investigate various geological features of the island. I naturally selected as my sites those that were at the other end of the two surviving narrow gauge lines out of Palma, where we stayed.

One line ran from Palma, the capital, to Inca and was operated by modern, but noisy, diesel railcars. The other line the "Ferrocarril de Soller" was electrified at 1500v dc overhead and was a real gem. All the rolling stock dated from the 1920's and had wooden bodies. The front of the motor driving coach had huge brass head lamps and the first class accommodation inside was provided with leather upholstered sofas. Best of all were the balcony end coaches. Standing at the back of the train gave an excellent view.

The line departed from Palma by running through the streets before reaching its own separate track. After the principle intermediate station of Bunyola the real climb began. Majorca's north west coast is fringed by the Sierra Norte mountains rising to over 4,500ft. in only five miles from the sea. The town of Soller is on the other side and thus the mountains present a considerable obstacle to the railway. The solution was a 1.75 mile long tunnel through the limestone at 850 ft. above sea level

The running sheds were shared with a tram line that ran from Soller to Puerto Soller on the coast. This line was of the same 3ft. gauge and electrified again at 1500v dc but was even more ancient, the trams and trailers dating from the turn of the century. The main line had not been extended to Puerto Soller because of the extreme gradient of greater than 1 in 20 through the town. At the terminus in Puerto Soller the tram ran round the trailer cars after the ritual of swinging round the pick up arm had been observed. Uniquely to this line however each tram had only one set of brake pipes which had to be transferred from one end to the other by the guard whilst running round. Another pipe would not have broken the bank surely! Travelling on this tram finished off all the lines still open, whilst still doing all the intended work for the college during the week we were there.

Paul Clark

MAIDSTONE MODEL ENGINEERING SOCIETY OFFICERS 1986

Committee

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SUE'S SPOT.

What's on next:

Friday December 26th:Boxing Day Run (afternoon, Clubhouse open from 11 a.m.).

Friday January 2nd:Talk to be arranged,details on noticeboard as soon as possible.

Friday February 6th:Road Transport in Kent 1890-1950,Talk & Slide Show.

Friday March 6th:Annual General Meeting, venue to be organised.

Friday April 3rd:An Evening with George Barlow.

Sunday April 19th:First Running Day of 1987 Season.

All Friday Evening meetings on the first Friday of each month commence at 7.30 p.m.

My thanks to the contributors of this winter newsletter being Martin,Jack,Andy,Jim and Paul, without whom we would be down to a single sheet again!Please, everyone,do consider submitting an article for the next newsletter, the closing date is April 5th which gives you plenty of time.I am quite happy to receive anything as soon as you like and it doesn't have to be about trains either.

Now some good news in respect of any drivers aged under sixteen:the latest Southern Federation Newsletter reports the Sun Alliance Insurance Group have iterated that  
(1)Children under 16 will not be covered by the policy if they drive engines with passengers.

(2)Children under 16 will be covered if they drive trains without passengers provided they are accompanied by a responsible and competent adult driver and all reasonable precautions are taken.

Under our own Club Rules we do not allow under 16s to run for the public but now we can lift the ban on no driving by under 16s providing (2) is complied with.

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Welcome to the following new members:

Harry Haines of Wigmore, who is building a 5" Simplex and

Mr Bryant of Minster, retired and interested in steam and electric locomotives.

Halloween Report:It was certainly an evening to raise the spirits ( although I was drinking wine myself) as there was a damp chill to the air and a few funny looking characters about (including the ones in fancy dress!).About half a dozen locomotives took to the track,the drivers fuelled by jacket potatoes with cheese, fresh french bread and chilli con carne concocted by Chef "Call me Robert Carrier" Gurr (who can be found slumped in the easiest chair in the Clubhouse most Sundays).The chilli con carne really was excellent and although hot ensured the trains were the only ones doing the running.The prize for the best dressed went to Sheila who was unrecognisable as a big black witch and who came armed with a pumpkin to complete the picture.One could identify Jack our president through his disguise from his pipe which he was able to continue smoking through his ghostly skeleton mask.The light from the signal cast an eerie glow on the proceedings as the engines were gliding through the station and a thoroughly enjoyable time was had by all.Some pictures of the occasion will be displayed shortly on the Picture Board in the Clubhouse,just to haunt you all.....

Final Snippets:.....If anyone is interested in coming along for a meal on the Wealden Pullman on the Kent and East Sussex Railway at Tenterden during 1987 please let me know and we will make a group up.....The Club Locomotive progresses slowly and now has its wheels on.....There is a teeny weeny bit of guard rail left to be painted when the weather improves if anyone can oblige.....it only remains for me to say A VERY MERRY CHRISTMAS AND HAPPY NEW YEAR TO EVERYONE and I look forward to seeing you anon.

*Sue*  
*P*