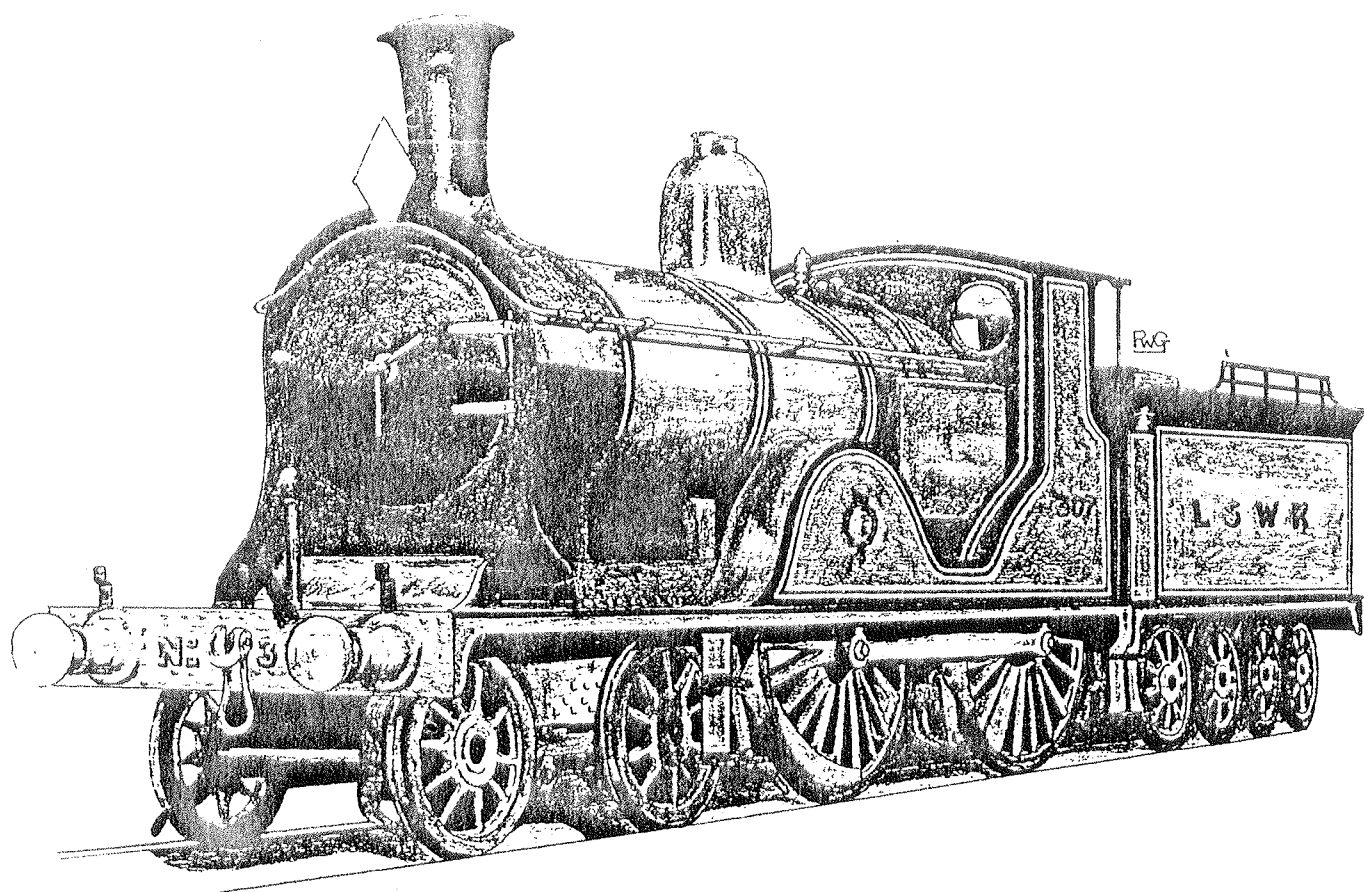


MAIDSTONE
MODEL
ENGINEERING
SOCIETY.



LIST OF BOILER CERTIFICATES EXPIRED OR EXPIRING DURING THIS SEASON.

NAME	MODEL	EXPIRY
MR P.CHISLETT	5" GAUGE 0-6-OT TERRIER "ROLVENDEN"	03/04/90
MR N.F.CLARK	5" GAUGE 0-4-OST SWEET PEA	09/09/91
MR N.F.CLARK	4 1/2" SCALE BURRELL TRACTION ENGINE	11/08/91
MR A.F.COPPINS	5" GAUGE 0-6-OT "EVA MAY"	08/04/91
MR A.F.COPPINS	4 1/2" SCALE BURRELL TRACTION ENGINE	01/08/88
MR B.CRABTREE	5" GAUGE 0-6-OT TERRIER "PRESTON"	03/04/90
MR F.DEEPPOSE	5" GAUGE 0-4-0 "POLLY 2"	14/01/91
MR J.EWINS	5" GAUGE 0-6-2T No.920	16/08/88
MR J.EWINS	5" GAUGE 0-8-OT "JIMMY'S RIDDLE"	27/04/87
MR T.FRISKEN	MINNEAPOLIS TRACTION ENGINE	07/07/91
MR T.GREGSON	5" GAUGE 0-6-OT BUTCH	22/07/91
MR A.E.GURR	5" GAUGE LNER 2-6-2T	08/04/91
MR R.P.HOLDSTOCK	5" GAUGE 0-4-OT "SALLY"	27/05/91
MR G.KIMBER	5" GAUGE 0-4-0 "COFFEE POT"	08/07/91
MR G.KIMBER	5" GAUGE 0-4-0 "WREN"	20/09/88
MR N.KING	5" GAUGE 0-4-OST SWEET PEA	30/04/91
MR N.KING	3 1/2" GAUGE 4-6-0 DORIS No.4771	08/07/
MR K.P.LINKINS	5" GAUGE 4-6-0 CLASS 5	11/09/90
MR P.MARTIN	5" GAUGE 0-6-OT SIMPLEX	24/06/91
MR R.H.MILLIKEN	5" GAUGE 4-8-2 "DUKE OF YORK"	16/05/89
MR C.NEIL	3 1/2" GAUGE 2-6-0 MARINA	27/05/91
MR C.NEIL	5" GAUGE 0-4-0 "DIXIE"	03/10/89
MR D.OSBALDSTONE	5" GAUGE GNR 2-8-0 "CONSOLIDATION"	11/03/91
MR M.N.PARHAM	5" GAUGE GWR 0-6-OT 1500 CLASS SPEEDY	08/04/91
MR M.N.PARHAM	4 1/2" SCALE ROAD ROLLER "BARBARA"	01/07/91
MR M.N.PARHAM	5" GAUGE 4-2-2 STIRLING SINGLE	22/07/91
MR M.N.PARHAM	5" GAUGE GWR 2-8-0 No.2889	20/05/91
MR D.S.PATERSON	5" GAUGE 2-2-2 IRISH WELL TANK	21/05/90
MR D.S.PATERSON	5" GAUGE 4-4-2T ADAMS TANK	15/07/91
MR D.S.PATERSON	5" GAUGE 0-6-0 TERRIER	25/08/87
MR A.H.W.PAYNE	5 "GAUGE LMS 4-6-0 RED FIVE No.5020	15/04/91
MR A.PROBYN	3 1/4" SCALE AVELING & PORTER TRACTOR	28/03/89
MR R.R.STAGG	3 1/2" GAUGE 4-6-2 BRITANNIA "BOADICEA"	10/06/91
MR C.THORNDYCRAFT	5" GAUGE 0-6-0 SPEEDY	19/08/91
MR B.WHITE	3 1/2" GAUGE JULIET 0-4-OT	31/08/91
MR J.WILLIAMS	5" GAUGE 0-4-OT "RUBY"	03/04/90
MR J.A.WINSER	5" GAUGE 2-6-0 "LOCKWOOD"	24/06/

Members wishing to have a boiler tested by the Society, to the Southern Federation test standards, MUST make prior arrangement with one of the testers listed below and another member of the Society to act as witness for the test.

Any boiler produced for a test must be fitted with a 1/4 x 40 ME male fitting to take the test pump.

Mr.G.Kimber. 4 The Stream, Ditton, Maidstone.	W.Malling 84593
Mr.P.Kingsford. 16 Cherry Tree Drive, Charing Heath, Ashford.	Charing 2086
Mr.M.Parham. Bramleys, Old Loose Hill, Loose, Maidstone.	Maidstone 74417
Mr.D.Paterson. 1 Westlawn, Little Ivy Mill, Loose, Maidstone.	Maidstone 74308
Mr.A.Payne. 38 Oxford Road, Maidstone.	Maidstone 75754

A TRIBUTE TO MR C HAYWARD

We said goodbye to Charlie on the 13th of March 1991. This was after a very long and painful illness.

Some of our newer members will not know of the great interest Charlie had in our Society since the 1950s. He gave pleasure to thousands of kiddies giving them rides at the Mote Park track. In later years he was to be found at traction engine rallies with his small engine and baler.

In the early days of our Society he built our station, ticket office and also our coal store. He was quite an accomplished bricklayer (I was only his mate). He was also a member of the Sheppey Model Society, and did a lot of work on the building of their track.

He will be sadly missed by all.

A.H.W. (Jack) Payne. President M.M.E.S.

Charlie was one of the first to trust his loco in my hands and often let me run it for him when he came down on a Sunday afternoon. I shall never forget his kindness. May it comfort Lil and her daughters Elaine, Barbara and Joan to know how much we all thought of him. Sue.

TRAFFIC CONTROLLER ROSTER 1991

MARCH : 31st J Payne

APRIL : 1st R Hodgkins, 7th D Herbert, 14th G Riddles, 21st D Field, 28th P Clark.

MAY : 5th M Wren, 6th R Chessman, 12th R Vane, 19th R Crane, 26th C Darley,
27th G Evans.

JUNE : 2nd F Deeprose, 9th C Williams, 16th T Gregson, 23rd R Hills,
30th P Jackson.

JULY : 7th N King, 14th J Larke, 21st S Ludford, 28th R Marshall.

AUGUST : 4th P Martin, 11th C Neill, 18th D Osbaldstone, 25th S Parkes,
26th A Probyn.

SEPTEMBER : 1st R Pursey, 8th C Williams, 15th A Tate, 22nd P Randall
29th S Senior.

OCTOBER : 6th A Towes, 13th G Gregson, 20th S Hall, 27th R Mannering.

Please all do your duty as requested. If for any reason you cannot attend on your day then please contact Chief Duty Dog Chris Williams and let him know.

BOILER CERTIFICATES : You are reminded that no engine may run without an up to date boiler certificate. The traffic controller should check where there is any doubt, but this in no way removes any responsibility from the owner of the engine. Boiler certificates expiring in the next few months are listed in this newsletter and an up dated list will be maintained on the Club Noticeboard. Please contact the Secretary if necessary to keep our records correct.

ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS/ADVERTS

For Sale, large quantity of Model Engineers from 1946,1947,1948. Please phone
0622-676393 for details. N Sands.

A new stock of Club Badges is now available at £1-50 each. Please contact the Secretary if you would like one.

MAIDSTONE MODEL ENGINEERING SOCIETY OFFICERS 1991

Committee

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ENTERPRISE UPDATE : Our loco has had a revamp this winter and the long suffering wife has put up with storage in the study, repainting in the conservatory, tanks drying in the lounge, rebuilding on the dining room table ( ruining my favourite tablecloth ) and lacquering in the kitchen ( after all, why clutter up a perfectly good workshop?! ). In fact, I was quite surprised not to find the boiler resting next to me in bed. My suggestion of a nameplate this time and a name such as Warp Factor One or Beam Me Up Scottie ( or even Tigger after our deceased cat) have also been ignored. Still, the important thing is to be able to continue our voyages.....watch this space....the final frontier..... Happy steaming one and all,good health and see you at the Club , Sue V

## LONDON, MIDLAND & SCOTTISH RAILWAY HEADLAMPS

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Our holiday this year took us to Colyton, E. Devon where there is a very interesting shop called the "Tool Box" that has an enormous array of second hand tools of all types, plus odd castings, locomotive and stationary engines and a huge stock of Model Engineers going right back to their earliest days. Looking through some of 1942 I came across an interesting series by the late F.C. Hambleton on Locomotive Headlamps of the major railway companies both before and after the grouping and felt that the drawings and details he gave of the L.M.S. lamps would be of interest to some of our members as odd copies of the M.E. of that period do not surface very often.

The L.M.S. lamps were directly descended from those of the old Midland Railway designed by Samuel Waite Johnson who became locomotive engineer of the Midland in 1873. True, they had lost some of their original gaiety of appearance for they no longer participated in the colour scheme of the locomotives themselves - one of the features distinguishing Midland lamps from all the others. Derby fairly let itself go in this matter! Imagine the black L.M.S. Lamp illustrated, but fitted up with a polished brass handle and gleaming brass retaining-ring encircling the lens, the lens rack, lamp body, and drum shaped top painted Midland red, bordered with black and with a fine yellow line separating the two colours as indicated by the dotted lines. The top drum bore a little circular brass plate bearing the words Midland Railway. The lamps were of quite an orthodox pattern and had pockets on their sides in which were stored the coloured shades.

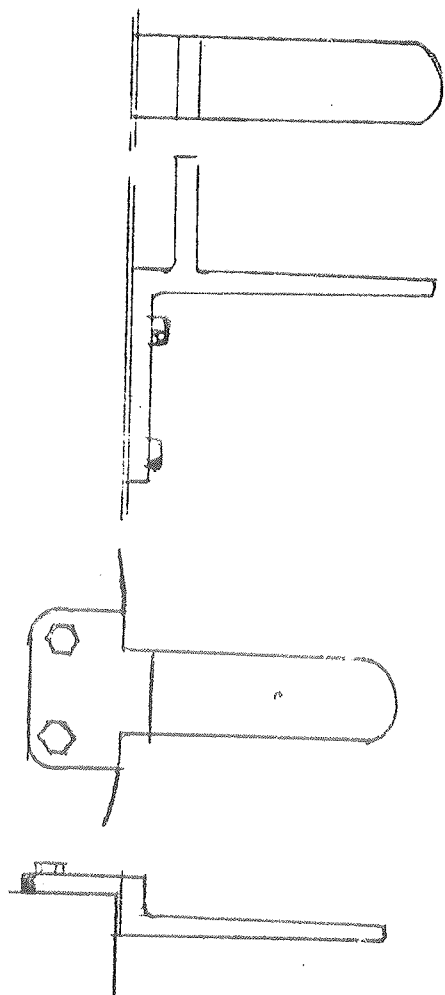
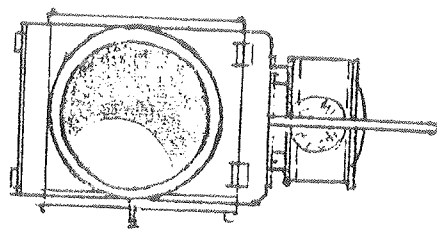
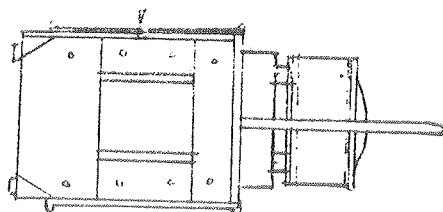
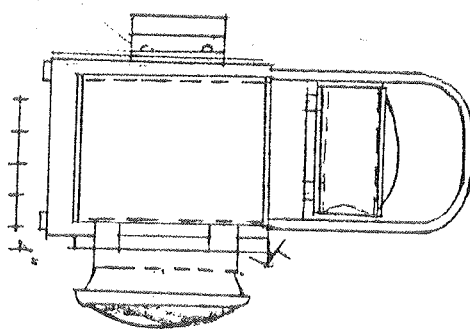
In L.M.S. days the shining brasswork was entirely absent and even the little brass owners-plate had been supplanted by the letters L.M.S. raised in the tinplate itself. The lamp-irons used for the Midland lamps were designed by William Kirtley and retained by Johnson on his own engines. They were of heavy proportions and all had a horizontal projection on which the lamp rested. Those on the front end and top of the smokebox are shown. The lamp-irons used on the back of the bunkers & tenders were L shaped and set off from the actual plating by a short length of bracket.

Mr Hambleton concludes his article with an interesting observation regarding the design problems of locomotive headlamps. They had to have a satisfactory scheme to ensure that the light would not be blown out by a sudden gust of wind. A lamp placed over the offside buffer would suffer in this respect when buffeted by the violence of the rush of air due to meeting an express train passing in the opposite direction - quite a thought.

Mr Hambleton contributed some marvelous articles to the M.E. with his "Locomotives Worth Modelling" and "Paddle Steamers Worth Modelling" etc. and I am sure that he would not have minded me passing on some of these fascinating details. I still have in my possession a letter he wrote to me many years ago concerning the delightful little S.E.R. steamers "Edward William" and "Myleta" a letter punctuated with lots of beautiful little sketches of Ramsgate Lighthouse and a S.E.R. cross channel paddle steamer leaving Folkestone etc.

Don Paterson.

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## MORE FROM THE HIGHLANDS

By Lionel Alexander

Last May, I was wondering how I would ever find the time to get on with my Derby 2P (things have improved since) when a circular from the Strathspey Railway came through the post. I have been a life member of this outfit for some years, but until last May I had taken no active part. For one thing, Aviemore is an hours drive away. For another, I am enjoying the busiest retirement in history, for reasons I won't go into. Anyway, I didn't see myself taking whole days out of my life to sell tickets. A job on the footplate is either for the fully-qualified or a reward for long service. At my age, I don't have that many years available.

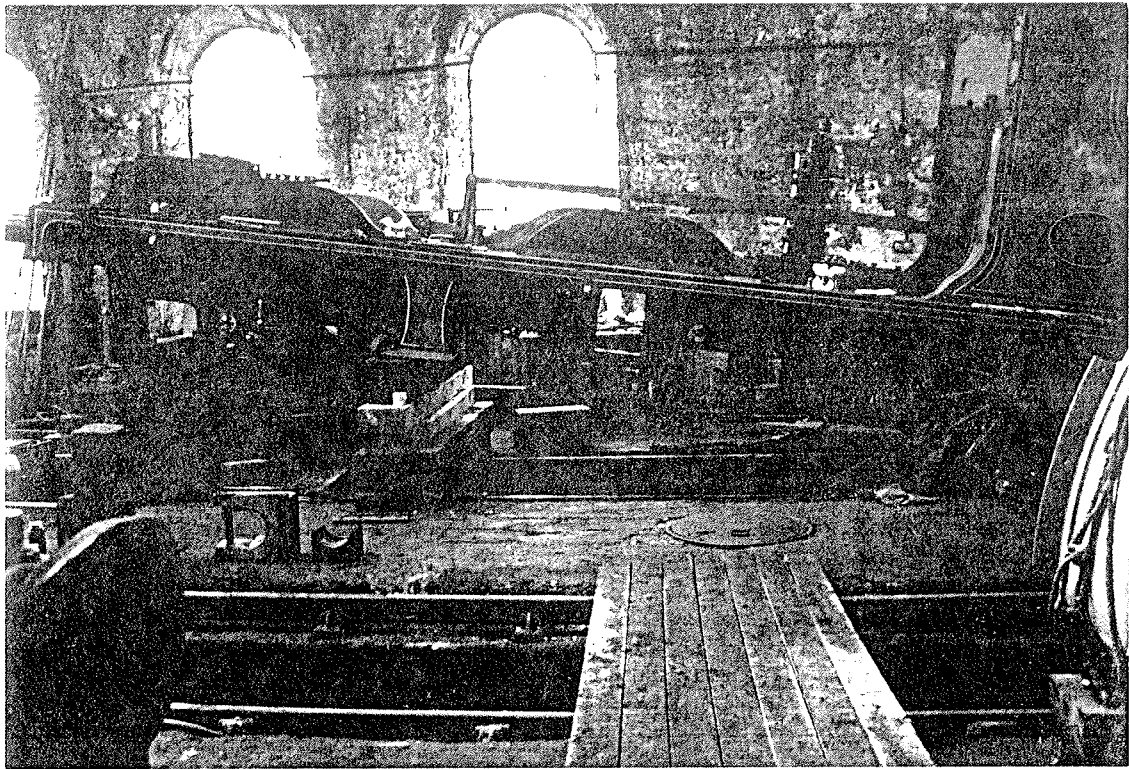
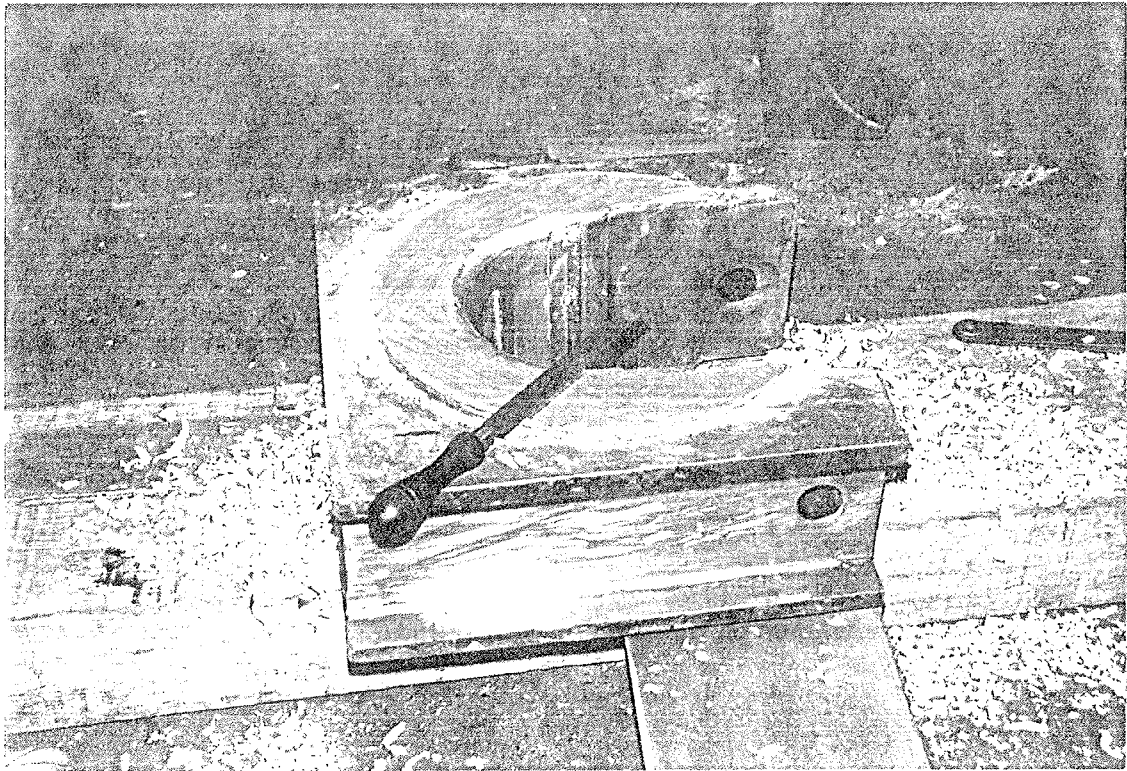
For those who don't know, the S.R. operates the old branch line from Aviemore to Grantown-on-Spey. When B.R. closed it down, they did their best to ensure that no one would ever use it again, but they failed to demolish the first four miles, to Boat of Garten. As a matter of fact, it is intended to relay the track to Grantown (which, among other things, involves moving Grantown station, and building new road bridges) in time for the end of the century. It will cost about £3m, but there is a lot of money, some of it European, washing about the Highlands, and the project is far from pie in the sky. In the meanwhile, the railway operates scheduled services to Boat in the summer, hauled by a couple of Hunslets, a Black Five, no less, and a diesel just in case.

Anyway, this circular asked for volunteers to work on 828. I am enclosing two pictures of bits of her. She is a Caledonian Railway 0-6-0 built in 1890. She is being rebuilt from the ground up, and when I heard of her, reassembly was about to start. So I rang and got hooked. On my first day at work, I arrived in the old Aviemore shed, now owned by the S.R, and met my foreman, Graham King (I can't get away from Grahams). He is a lecturer at Strathclyde University in his spare time, and a model engineer to boot. We are a team of 4 or 5, and we get on extremely well.

828, incidentally, would be marvelous to model if you happen to have a masochistic turn of mind - the sort of thing Don might enjoy. She has Stephenson valve gear to inside cylinders, with the valves between the cylinders. Interesting in 3½" gauge, though her designer spoiled the fun by not having yet another eccentric to drive a mechanical pump. So for anyone who has built a Terrier, she's a pushover. Her other unusual feature is the main springing. There are coils on the driving axle, and leaf springs on leading and trailing.

When I first saw her, I was impressed with her size, which is fairly obvious. But what really shook me was the size of the pieces. My first job was to take 1/16" off the face of a main axle-box. This little number weighs about 1½cwt. Just getting it to a place where I could attack it took half an hour and a small crane. The problem was dodging sundry bits of dismantled mastodon lying about and constituting an assault course of severe difficulty. Furthermore, I was expected to do the job with a scraper. This sounds a little worse than it really is, because the face in question had a rubbing section of thick white metal. It took me a whole day to do. Graham thanked me, and suggested I started on the other one. I muttered something about machining, and to my delight was shown the machine shop. There is, alas, no mill, but the centrepiece is the biggest lathe I have ever seen.







The bed, I believe, is 15' long, and the centre height is about 20" over the gap. Starting 'up, sorting out the gears, and engaging feed, involves an appreciable walk. Precision machining is not made easier by the fact that the bed is like a relief map of the Pennines; and the slides are not much better. Still, there is a jumbo 4-jaw which swallowed an axle-box without trouble. This time, the job took only half a day, mostly spent in setting up. At the end of it, I still had a back that worked. Since then, we have fitted the wheels, piston rods and connecting rods. My last job was to make a shim to pack the back face of one big end brass (because the con-rod was short of spec., and consequently the piston fouled the back cover at b.d.c.). This shim started life as a piece of 3/8" thick manganese bronze, about 12" by 4". It had to be bent to an arc with the aid of a heavy hammer, and then sawn longitudinally on both sides (because after distorting it, you couldn't use one side as a reference) to final width. It was then cut to length, and riveted to the brass with six 3/8" copper rivets, the bottom half of which were tapped into blind holes in the brass. The bit protruding through the shim was, of course, walloped into deep countersinks. They had to be deep, because the shim/brass assembly had then to be machined such that the shim ended up full thickness on the back centre line, tapering to 1/16" at the ends, so as to fit the housing.

I am loving the work, and I find that the sort of resourcefulness needed for model engineering is a great help. In about two years time, I should reap my reward in the form of footplate time (if Sue doesn't get there first) while the loco still belongs to the workshop prior to handing over to the operating crews. I hope that my dear foreman wasn't being unkind when he promised me the job of firing her up for the first time, since this is likely to happen, Sods Law being what it is, several hours before dawn in January.

In the meanwhile, I am feeling a little punch-drunk and culture-shocked. By way of restorative, I can go into my own workshop and pick up my chassis to get out of my mouth the taste of an hour's work with a 20-ton jack to raise 828's chassis a couple of inches.

We shall fit the boiler quite soon. There will be fittings to make. Who knows? Perhaps some of the very tiny bits can actually be made in the Myford. Even then, everything will have to be screwcut, because I have nothing bigger than the 1/2" BSP, and I bet that all the threads are bigger than that.

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

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

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I enclose herewith the sum of £..... (£25 per person or £2-50 for retired members) which is my subscription to Maidstone Model Engineering Society for 1991.

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

## CHAIRMAN'S REPORT ON 1990

This year I am pleased to be able to attend the Annual General Meeting ( although thoughts of skipping the country again did fleetingly cross my mind ).

1990 brought us another glorious summer - I think there was only one Sunday that we could not run for the public due to the weather. We had charity runs, barbecues and pleasant evening runs, and the Open Day was a success as usual, entirely due to the willing participation of our members. We had several outings to other tracks, also great fun.

Work around the Club continues. The Club loco should be in action for Summer 1991. Constructing more beams to support the track is an ongoing task. Fresh fencing has been put up at the rear of the Clubhouse, and a drain behind the workshop and coalstore installed. A recent break-in to the coalstore resulted in the loss of the compressor. Fortunately, the Club is insured but it seems still tighter security will be required to protect what we have.

Whereas this report should really just cover 1990, it was a fairly quiet year and I feel it is important at the moment to speak on the year ahead.

Those of you who are local will no doubt be aware of the plans to close Mote Park to any traffic except for parking at the perimeter areas. As far as we can gauge at this stage, we should still be able to gain some sort of access to the track but life will undoubtedly be more difficult for us if these plans go ahead. It is due to this that the Committee has felt unable to give a date for the Open Day this year, for indeed it may not prove possible to hold one.

Many of you may not be aware of the increasing amount of abuse, destruction and vandalism the Park has suffered from in the past few years. The churned up grass, the smashed fences, the broken trees and the appalling litter problem, the joyriders and yobs. Those of you who visit the Club will already be aware of the locked gate at the end of the road to the Clubhouse, installed by the council to try and protect the grass and trees. Whereas this is somewhat awkward for us, we have been told to keep the gate locked shut at all times and have only a limited number of keys. In particular, please remember this is only a temporary arrangement. Once the Council have decided what will happen and what and where our access will be, we would hope to be able to ensure all our members can get to us as easily as possible, with keys if necessary.

A little inconvenience is a small price to pay for the facilities we have at Mote Park. Perhaps we do not realise how lucky we are, perhaps we take for granted all that we have already. You, the members, are the Club, and the Club has one of the best tracks in the country. If we have to fight to survive, the Club is worth fighting for. I love Mote Park and the Club and hope that many members feel as I do. The Club always needs your support, and even more so in the coming months. Please give it willingly.

ADRIAN GURR.

27th February 1991.

## BOYS FROM THE BLACK STUFF

No, not the sticky black stuff on the road and the path that adheres to your shoe better than a tin of Evostick and then deposits itself upon the carpet such to warrant a severe blow to the back of the neck with a piece of EN58 by the domestic engineer. That black stuff that we laboriously break up into small pieces, sift and grade, heap into our tenders and, in my case at least, deposit mainly in the gap between footplate and tender.

As I do not have the technical knowledge, nor the lifetime of experience to enable me to write in the Club magazine on the subject of safety valves, honing cylinders or the like I have therefore to limit myself to the subjects I know something about even if not a great deal. Thus I write again on a subject that most people know very little about.

At the end of the 1960s I found myself working in a manufacturing subsidiary at the company with the big orange concrete mixers. This company manufactured lightweight autoclaved aerated concrete, the sort of thing that is seen mainly now in the form of building blocks such as Thermolite. My job heading up the research and development department was dealing specifically with other applications in large size blocks and in steel reinforced major members. Because of the limits of the testing equipment held at two factories, one in Essex and one in Motherwell, we had to utilise university testing departments where the scope of what we wished to discover was outside of what we could do. For this purpose we spent a lot of time at the University of Strathclyde.

During the course of one of these testing sessions, during 1970, we found ourselves working side by side on a project for the National Coal Board, to try and develop a crushable gas tight medium for gas walls in mine shafts and from this came the inspiration to try and use large blocks of AAC for that purpose.

Now this article is not intended to be a history of the use of AAC but more of what actually happens below ground to bring those innocuous bands of hard black material to the surface.

After some months of meetings the R&D department of the National Coal Board agreed to give our ideas some room for tests, but before we could start setting up such tests myself and my three members of staff would have to become accustomed to working in a coal mine in order that we would be au fait with all of the procedures, in particular those that pertain in the event of an emergency. We were therefore seconded to the Seafield Colliery on the East Coast between Edinburgh and Kircaldy, Well known as anybody who has been to that area will know, as the home of linoleum.

Seafield, it was said, was a modern colliery and my experiences there made me wonder seriously as to what an old colliery could be like. The seams being worked upon were between 9,000 and 9,500 ft down and 2½ miles out to sea. The prospect of working in those conditions did not I must admit, endow me with a great deal of excitement. Nevertheless one cold May morning we reported for duty, were issued with overalls, boots, helmets and lights but, the subject of great disappointment, no Davey Lamp, these are issued only to Deputies, mining's equivalent to the Foreman. A two hour session of who goes where, what you are allowed to do, who you have to report to, what to do in the event of an emergency followed, although I seem to recall that a lot was said but not much sunk in, perhaps this had something to do with several million butterflies nestling in my nether regions at the thought of the imminent descent of some 9,000 ft in what appeared on the film shown to be little more than a wire cage suspended from a piece of sisal rope.

A brief tour of the above ground workings followed, to view the winding heads used to convey men and coal up and down the shafts. Massive electrically driven winches with cables as thick as a Sumo wrestler's thigh. No steam here, this pit had only been opened in 1948. A visit to the pump rooms, perhaps better described as the pump hall, because of the number and size of pumps which we were told raised over one million gallons of water from the pit every eight hours. Part of this very same water was used for washing the coal and for displacing the heavy shale which rises with it. Vast conveyors and grading screens and automatic loading facilities filled a seemingly endless lines of rail wagons with different size and presumably, a different type of coal although I must admit that I never really found out how there could be a difference because it all came from the same place.

One noted absence was that of huge slag heaps. There were relatively small piles of orangey red shale but apparently the amount of waste from this modern thick seam pit was very small.

It had been explained that Seafield had two seams of coal, one at 7,000 ft and one at 9,000. The 7,000 ft seam would need to be worked out ahead of the 9,000 ft seam. A number of vertical shafts are formed between 15 ft and 40 ft diameter and these serve as the elevators for men, machinery and coal and the smaller ones as ventilation shafts, doubling up with the 24" diameter water recovery systems. At the bottom of the shafts in a gallery the roadways lead out to the coal face under the North Sea and at a station more than a little similar to the Waterloo end of the Waterloo and City Railway, miners are crammed into trams rather than trains, that consist of around a dozen steel open wagons on the size and style of the Romney Hythe and Dimchurch but without roofs. Perhaps that is where they got theirs from! The descent to the gallery had not been quite as bad as had been feared, about 50 had been crammed into the cage, the gates came down and, unlike what we had anticipated, we did not simply drop out of sight but the light at the floor slowly moved away and although in the time it took us to do the 9,000 ft we clearly travelled very fast, there was no terrible sense of dropping although the total darkness of the event without any form of lighting probably added to the confusion. Fortunately in the forthcoming weeks the journey to the bottom of the shaft became a non event.

At the end of an indeterminate length of journey in pitch darkness aboard the tram it terminated in a further gallery, like tube stations; seemingly filled with conveyors and pipes leaving no room to move. The atmosphere was warm and musty with a glow that was neither dark nor light. From here started the coal seam that was being worked upon which, at 2ft 9" in thickness, was said to be a thick seam. The seam ran at an angle of 30° to the horizontal and was worked in a band 150 yds wide. Two tunnels are taken forward, 10ft diameter 150 yds apart, the lower one being called "the advance tunnel" and the upper one "the retreat tunnel" these are virtually the only parts of the mining taken forward by hand. On the seam being worked on the length of the tunnels at the time were some 700 ft, increasing in length by around 10 ft per week. Miners would drill forward into this face, most of which consisted of shale rock with the coal seam running through the centre like the meat in a hamburger. This would be blasted once a day and the tunnel advanced approximately 18" with the insertion of segmentated steel hoops, the gap between this and the previous one being filled by little more than rough timber wedged into position. As the pressure of thousands of feet of rock and sea water move the rock down the structures tighten and move quite alarmingly the resulting tunnel bears little relationship to the straight lines and apparent robustness of the "Underground". Within weeks the timbers become covered with white mould and give the appearance of imminent failure but their task is to stop nothing more than small fragments dropping down with the pressure being relieved by the steel hoops. Tunnels lead off at right angles from the heading tunnel and these are progressed outwards for the future development of

the seams and then sealed off. It is the sealing off of these tunnels and of tunnels that progress into areas where the seam diminishes and will not be worked that need to be made gas tight.

Gas tight walls over the years had been constructed of many materials and none had been found fully satisfactory. Non rigid walls still allowed some gas to permeate through and rigid walls cracked under the force of the settling roof allowing gaps through which gas can escape. The solution was to build a dry wall of aerated concrete blocks two feet thick, filling the tunnel as neatly as possible and then to pile 8 ft of shale against this wall. Over a period of several months the roof would subside crushing the wall, which would then fill the gap tightly leaving no voids and as the aerated concrete has a closed cell structure no gas passes through. Test walls excavated again after three months showed a mass with the apparent appearance of one huge aerated concrete block with no measurable gas penetration at all. The experiments were considered 100% successful and the standard of erecting gas walls using 2 ft x 1 ft x 1 ft aerated concrete blocks laid dry was adopted by the National Coal Board.

The coal is removed from the seam by first forming a tunnel to connect between the advance and retreat tunnels, running parallel along the seam this tunnel has to follow the orientation of the seam, in this case around 30° to the horizontal. This tunnel is cut in a rectangular fashion, encompassing the seam of coal and as far as is practical the smallest amount of upper and lower materials. The width is around 6 ft and the height at Seafield was around 3 ft 3" to 3 ft 6". As the tunnel progresses forward hydraulic frames are inserted, each frame consisting of 3 vertical jacks and 2 horizontal jacks. Upper and lower sections of the frame consist each of 2 parts connected by the horizontal jacks. The upper and lower members cantilever over at one end, the cantilevered section being connected to 2 jacks whilst the other section is connected to only a single vertical jack. The lower section cantilever member is foreshortened by around 18" to the upper section. As the tunnel moves forward further frame systems are inserted at about 2 ft centres and each frame is linked to that before and after with a pivoted connection rod to each section above and below.

When the tunnel reaches the retreat tunnel there is a continuous set of hydraulic jacks supporting the roof with a gap of 2 ft or less between the single jack and the pair of jacks and a similar free gap between the outer of the double jacks and the edge of the coal face. Into this latter space is installed the coal cutter and the conveyor to remove the coal to the retreat tunnel. The conveyor and the coal cutter track are in sections similar to the support system.

The coal cutter is a hydraulically powered Tungsten circular saw at exactly the same diameter as the projected cut of the face and it is in fact like a large horizontal mill. The cutter moves up the coal face cutting away between 3" and 4" which falls on to the conveyor which is moving the cut coal away, first to the retreat tunnel and then progressively back to the pit heads and up to ground.

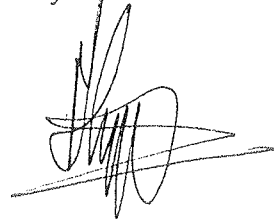
As the coal cutter moves forward and clears each support section it triggers a valve on the conveyor, releasing systematically the two jacks on the outer support systems and charges the 2 horizontal jacks, which move the support frames, conveyor and cutter track across by the amount that the cutter has taken. The vertical jacks then tighten, the rear jack loosens and the horizontal jacks retract the frame section, effectively having moved the whole jacking system, cutter and conveyor, sideways.

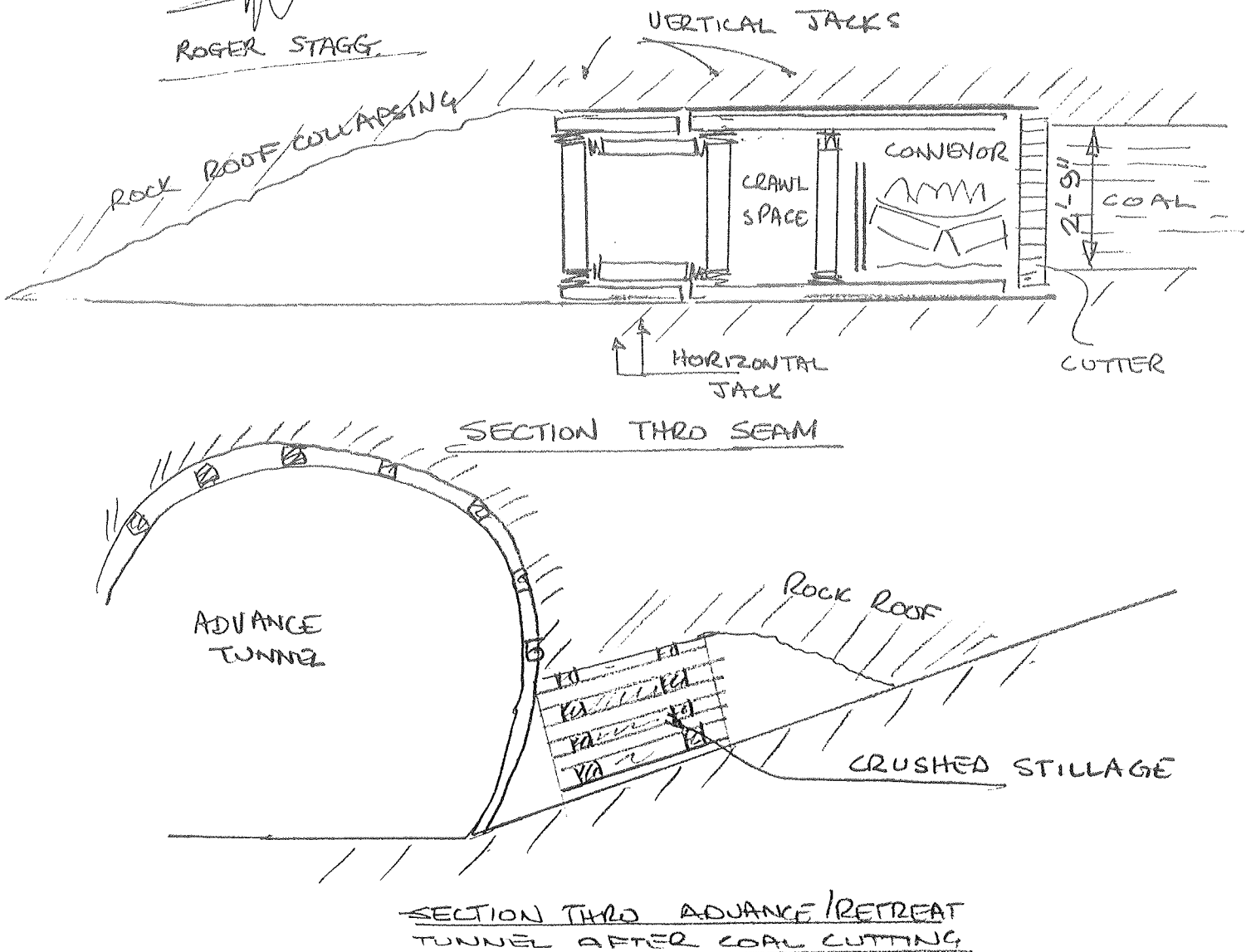
Any access to the coal face, any repairs or adjustments to the hundreds of jacks and jack operating switches can only be done via a gap formed by the single jack and the first of the pair of jacks and one has to crawl up this somewhat open tunnel on hands and knees between the advance and retreat tunnels, whilst the conveyor taking the coal out whips past alongside, the coal cutter makes its relentless way past and ultimately back again whilst the tunnel in which you are crawling picks itself up and bodily moves towards the coal. All this happens whilst being lit by nothing more than the light mounted on your safety helmet. For the first time this is a highly disturbing experience.

As the seam is removed a whole section of coal beneath the ground is removed and slowly but surely the unsupported roof left beyond the retreating jacks begins to move down. From inside the jack tunnel, it is almost as though you can see it closing up. It is of course this downward movement of filling the void removed by the coal that ultimately migrates to the ground, causing subsidence on land and fissures which let in even more water when, as in this case, the seam is under the sea. The pressures from this closing up of the seam however would crush the advance and retreat tunnels the, light steelwork of which is only intended to impart an arching action and not provide a full support system. As the seam moves forward therefore, stillages are constructed immediately outside the advance and retreat tunnels, these are then filled with colliery waste packed solid. The stillages consist of 6 ft sections of 6" x 6" hardwood; 2 are laid on the seam floor 4 ft 6" apart followed by 2 at right angles 4 ft 6" apart and so on. As the stillage is built up the inner face is filled with shale, packed tight until nothing more can be crammed in against the seam roof over. As the roof crushes down the timber stillage is also crushed and in so doing locks together, retaining the block of shale inside until that is crushed sufficiently to form a solid prop against any further movement. As this occurs the steelwork to the heading and retreat tunnels become severely distorted but is not replaced unless local failure actually occurs. All along the side of the heading and retreat tunnels against the worked seam there are therefore these continuous stillages of a hardwood surround containing a solid column of crushed waste. At the time no alternative to hardwood had been found. The material necessary needed to be solid, able to be crushed without losing its overall integrity and not be likely to cause sparks. Timber is not the ideal, being flammable but no alternative had ever been found which could do the job as well. How many rain forests found their way down mine shafts would be impossible to guess. Our alternative system consisted of forming autoclaved aerated concrete inside steel cans of the same dimension as was used for the timber stillages and although the tests using these continued for many months and we tried so many variations that there did not seem to be any left, we were never able to produce anything as good as the timber and as far as I know, timber is still in use for these purposes in collieries now.

My time in the colliery ended shortly before the first major miners strike and having experienced those working conditions at first hand I would have been hard pressed not to have substantial sympathy with the miner's request for higher pay. They do not come up for lunch or tea break and the sight of men black from head to toe huddled in an alcove between 2 steel support rings, eating their meals, was a constant reminder that only a microscopic percentage of us who earn our livings above the ground have any idea at all of what it looks, feels and smells like to spend between 10 and 12 hours of the day working in conditions that would be devoid of any light whatsoever were the battery to fail in your helmet. It is impossible to put into words what those conditions are really like nor would any film give the right atmosphere but let us not forget at least that the black stuff we burn so easily and readily does not come to us in the same manner.

I will give here just a quick closing word on autoclaved aerated concrete about which over the years, I have had more questions than any other single subject. It is not concrete at all, as the ordinary person would know it. It is a mixture of very fine dried and ground high silica sand with lime. To this is added an extremely small amount of cement (about 2%) and aluminium powder or dried blood. The lime reacts with the slurry producing heat, this produces a chemical reaction with the aluminium powder or blood. The material is pumped into moulds 20 ft long x 5 ft wide x 2 ft high and kept in a large curing hall maintained at a minimum of 90% humidity and 85°F. Within 2 hours the mixture has risen like a large cake and from the depth it is originally poured in at (about 9") until it overflows the top of the mould and as it does this, begins to jellify. The mould is filled by a material with the consistency of a sponge cake. Wires are used to cut the "cake" as it is called into blocks of the required size. To produce the smooth faced blocks, the wires are dragged through the cake and to produce the blocks with the squiggley lines on, small steel balls on the wires are used and the wire is oscillated backwards and forwards whilst being taken through. The waste from the top of the cake is taken off by vacuum and the mould sides, which have been hinged down for the cutting process are pushed and the mould, together with the cake, is moved into autoclaves 7 ft diameter 300 ft long, where they are cured at 150 PSI in steam for 36 hours. When they come out of the autoclave they are as those used on building sites today.

  
 ROGER STAGG





### THE PASSING OF "THE BOB"

December 1990 saw the end of the large 5p piece as legal tender. "So what?" I hear you ask. If you recollect, however, that some of these coins still bear the legend "one shilling" you will realise that quite a long chapter of our history is now closed.

Although introduced in Saxon times, the first shillings of present style and value date from the reign of Henry VII. These continued to be produced by each succeeding monarch, and by Oliver Cromwell, until 1960 ( but none were issued for circulation by Edward VIII - a shilling was sold at auction for £12,000 ).

The first coins were "hammered" - a disc of metal, in our case silver, was placed between two iron dies and the top one struck with a hammer, by hand, to produce the required pattern. In 1668, in the reign of Charles II, the first mechanically produced coinage, i.e. "milled", was produced using a type of screw press.

Over the years there were occasions when the source of the silver used was advertised on the coins; some Queen Anne shillings of 1702/3 bear the word VIGO under the bust. These were struck from silver captured from the Spanish bullion ships in Vigo Bay. Also in 1743 the word LIMA below the bust of George II refers to silver "acquired" from Spain by Admiral Anson and other privateers during their South American exploits. Finally, George I coinage sometimes bears the initials S.S.C. on their reverse for silver produced by the South Sea Company which ( I believe ) operated in Peru.

The earlier monarchs loved to inscribe Biblical quotations on their coins proclaiming, no doubt, their God given right to reign. Thus on the reverse of Elizabeth I shillings will be found: POSUI DEUM ADJUTOREM MEUM - "I have made God my helper" and on James I coins: QUAE DEUS CONJUNXIT NEMO SEPARET which you can guess means "What God hath joined together, let no man put asunder", in this case not a wedding statement but perhaps addressable to the present day Scottish Nationalist Party!

However, George I found it necessary on his shillings to make quite clear to his newly acquired subjects his impeccable lineage by the following abbreviated text: D.G.M.BR.FR.ET.HIB.REX.F.D.BRUN.L.DUX.S.R.I.A.TH.ET.EL. which, when expanded and translated reads "By the Grace of God, King of Great Britain, France and Ireland, Defender of the Faith, Duke of Brunswick and Luneberg, High Treasurer and Elector of the Holy Roman Empire"!

With its declining value over the years came a reduction in size; the largest Elizabethan shillings measured 32mm in diameter against 23mm of the last issue. They were all, however, relatively circular, with the exception of those produced during the Civil War when, in the besieged cities of Pontefract, Newark and Scarborough, local silver plate was cut up into square or octagonal shapes and stamped for issue as legal currency.

Colin Thorndycraft.

REAL SHUNTING WITH THE 0-6-0  
NORTH LONDON TANK LOCOMOTIVE

Our working lunch break, took an unexpected turn, Clive the instructor asked if we would mind doing our shunting practice with rolling stock instead of just using the goods brake van, It was explained that plans made by the Bluebell railway for delivery of track was arriving early. This required the 75 ton steam crane and bogie bolster wagons to be moved to the two sidings next to the goods yard. Well it sounds simple but involved clearing these sidings of rolling stock and shuffling most of the other sidings to get out the wagons required and relocated for loading or so they could be taken up the line to Horsted Keynes with the new track. It took all afternoon, giving us a good insight into the tasks of guard/shunter as we would assist with these. We were joined by a member of the Bluebell staff who was in charge of the shunting, he had a list of the movements in order of operation, a copy went on the Loco.

HAND SIGNALS

Rule 51

Danger or stop signal.

51. In the absence of flags—

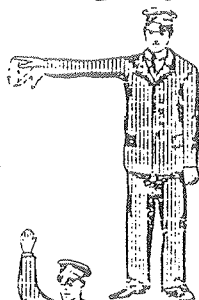
(a) Both arms raised above the head denotes Danger or stop:—

(NOTE.—When riding on or in a vehicle either arm moved up and down denotes stop.)



Caution or slow down signal.

(b) Either arm held in a horizontal position and the hand moved up and down denotes Caution or slow down, thus:—



All Right signal.

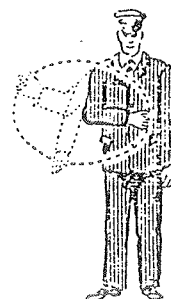
(c) Either arm held above the head denotes All Right, thus:—



Rule 51

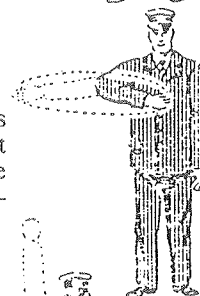
Move away from hand signal.

(d) Either arm moved in a circular manner away from the body denotes move away from hand signal, thus:—



Move towards hand signal.

(e) Either arm moved across and towards the body at shoulder level denotes move towards hand signal, thus:—



Create vacuum.

(f) Arm moved vertically up and down above shoulder level denotes create vacuum, thus:—



## AUDIBLE SIGNALS

BY means of BELL GONG HORN WHISTLE, or other appliance used for signalling to DRIVERS engaged in shunting operations is as follows:-

| SIGNAL | INDICATES      |
|--------|----------------|
| ONE    | GO AHEAD       |
| TWO    | SET BACK       |
| THREE  | STOP           |
| FOUR   | EASE COUPLINGS |

I was going to learn a bit more than expected about a shunters job in the first part of the afternoon, and the use of hand signals to convey instructions to the driver of the loco. The procedure for coupling up coaches and wagons is:-

- 1 Check hand brake is on in guards compartment or brake van or wagon.
- 2 Ensure all the couplings and vacuum pipes are made or broken as required
- 3 Signal driver and get O.K. response before getting between buffer beams.
- 4 When between loco and coach or wagon take vacuum pipes from storage blank this destroys the vacuum, stopping the brakes from being released.
- 5 Remove the loco's coupling from its coupling hook or storage hook let it hang down.
- 6 Swing the loco's coupling up and over the eye of the coaches hook, then adjust its length.
- 7 Connect up the vacuum pipes, you push both pipes away from you, engaging the two lugs nearest you, then you twist the left hand pipe towards your self, and the right hand one away, letting the pipes spring back under control letting both faces come together, then release both hands and the lugs on the other side engage, hopefully.
- 8 Now lock the pipes together with a spring pin through the holes in the lugs on one side.
- 9 Now duck under the buffers getting out from under the train.
- 10 Signal back to the driver/fireman and get response.
- 11 Release hand brakes.

The uncoupling is done in reverse.

I spent about one and a half hours ducking under buffer beams, without banging my head or catching my back, others were not so lucky. For a comparison its like working out in a gymnasium, I normally do it each week, but located in a grease pit, dirt and muck gets everywhere. By the time we changed round we had started to get some sense of order into what we were doing. The biggest problem was a lot of rolling stock and limited space to work. This meant using one of the tracks through the station, but as we used it get the loco round from one end of <sup>the</sup> rolling stock to the other, from pulling to pushing into the main sidings they could not be left for long. So it caused extra movements and having to shunt one wagon at the end of a row.

Well back on the footplate as fireman, it gave me a bit of shovelling too keep the fire nice and white hot, and using the injectors to keep the water level up, adjusting the fire with the dampers to maintain the steam pressure

well up, but not causing the safety valves to blow. It was quite interesting to manage this as the pressure would fluctuate each time the loco pulled and deposited a load. As long as I could manage to keep it above 250 and below 280 lbs, blow off and a nice white glow to the fire, Clive would have no cause to remind me of anything. I even managed to notice that the coal bunker shute was getting quite empty, but plenty <sup>on</sup> top of the water tank, so during one of the shunting pauses I climbed <sup>up</sup> the loco's outside and helped it into the shute with my shovel. Besides this I only had to keep a look out from my side of the cab i.e. hand signals from the shunter, point changes, anyone in the way. Time seems to flash past and for me to move over to the driving position.

First thing check position of the controls i.e. hand brake on (I put it on before moving over, reverser mid gear, regulator closed, draincocks closed, all cocks closed except small amount of blower, and small injector on vacuum brake, 21 inches on gauge, 270 lbs of steam, right ready to go. The first move was pull the 75 ton crane into the platform, uncouple run round pull it up into the head shunt and push it into the goods yard siding. On the way round collect a rake of 4 coaches from the other platform and push them into the main siding. All clear from shunter and fireman, clear my side, hand brake off, fireman winds away, reverser to forward, a blast on the whistle, open the regulator slightly, taking the coupling slack and weight of crane, open regulator more everything starts to move, but the wheels begin to slip, close the regulator back til the wheel slip stops, then more regulator, got it, but I can feel the weight and the loco having to work. The speed soon builds up to about 6 mph over the points and into the station, close the regulator back til the weight of the crane is onto the loco's buffers, now close the regulator fully and apply loco's brake (vacuum) to stop so the rear of the crane is a loco's length clear of the signal even so the crane's weight pushes the loco forward about 6 feet when the driving wheels lock up, Clive says this is normal. A short blast on whistle, brake held acknowledge shunter's signal, going under to uncouple. While this is happening no loco controls are used or operated, the shunter comes back out. All clear, brake off blast on whistle, open regulator off we go down the platform, notch the reverser back, over the point and stop, short blast on whistle, reverser to reverse. The point changes giving the road into the other platform, the signal changes, all clear, a blast on whistle, release the brake open the regulator. As we go down into the platform, I have a good look, noting the position of the end coach of the rake of 4 that I have to couple onto. I shut the regulator, ease the speed down on the brake til loco's <sup>at 2</sup> just moving in the last few feet, the shunter shouts 'wo', the clunk as the buffers strike brake on and held. The shunter goes in, couples up, comes back out I make a brake 21 inches, pressure 270 lbs. Now comes the big test, pushing the coaches into the siding. I did not have time to be apprehensive, before I got the all clear signal, whistle, regulator

4  
open as I release brake, to stop loco setting back it seems like a age before the coaches start to move, as they do I give a touch more regulator to get them up to a good walking speed. The farthest coach<sup>STARTS</sup> to snake over the points leading the way into the siding. The shunter should be changing sides soon onto my side he appears in the rear coach window, waving me on into the siding, which is slightly up hill, the hand signal changes to slow, I close down the regulator to proceed at a very slow walking speed, The hand signal is waving me on, the last coach is going into the siding not far now, as it clears the point, slow hand signal, I close the regulator more halving the speed, just moving, waved on, then as the loco clears the point, then comes the stop, Brakes<sup>on</sup> to give a smooth stop, holding the brake then close the regulator, its done this way round to stop the loco setting back, due to the slight hill. I now start to feel nervous about what I had just done, I then realise that Clive was right next to me, he hadn't said a word throughout, but he just had a happy look on his face, as I looked at him, he said 'thats alright' . We left the coaches, watered the engine, collected the 75 ton crane pulled it into the head shunt and pushed it into the goods yard siding. The crane dented ones confidence as it pushed or pulled the loco along for a couple of feet on locked wheels, this was because it<sup>H/T-D</sup> no working automatic brakes, only a hand brake.

While in the yard we coaled the loco, this<sup>IS</sup> done using a large shovel shaped bin on the arms of a fork lift truck, the bin is loaded with coal then lifted to just above the loco's coal bunker. Then with human shovels its deposited into the loco's bunker. I enjoyed watching it being done, my turn would come. We did a couple more shunting moves then put the loco over the ashbay, to pack up for the day. We were going to leave the fire in over night to get an early start next morning. The fire is given a good rake then pulled into a heap in the centre of the grate, its a hot job and the left hand needs to be protected with a rag wrapped round it. The ash pan is then raked out into the pit, and the dampers closed next the dust is shovelled out of the smoke box, the chimney is covered, a metal dustbin lid<sup>IS</sup> ideal. Next fill the boiler to the top, this makes sure the boiler pressure is well down, check, fire doors closed fully, all valves closed, drain cocks open, reverser in mid gear, hand brake fully on. Now for a shower, we are as black as the ace of spades, something to eat and down the pub, to talk over what we had done and problems with Clive and the rest of the course.

The typing will improve.

norman.

