

AUTUMN NEWSLETTER 1975

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President: Councillor P.J. Robinson

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Any contribution to the Newsletter is gratefully received, although it may be held over for a future issue. Drawings must be black ink on white paper and fit within the page for same size reproduction. Material for the Winter edition should be received by the Press Officer not later than December 1st.

CHAIRMAN'S NOTES

It is very sad to start these notes with news of yet another loss to our Society, the passing of Mr. A.W. Bennett. "Bill", as many of our Members know, was for numerous years the Chairman of the Car Racing section of the Society.

He served in the First World War as a pilot with the Royal Flying Corps and tangled quite successfully with the top German "Flying Circus". After the War he continued his success as a test pilot, and later he joined I.C.I. to remain with them until his retirement as an area manager.

His model cars, a true work of art, were a mixture of highly skilled engineering and watch making, yet robust enough to attain very high speeds. He approached the Town Council and secured approval for the car racing track in Mote Park, which he ran almost single handed for many years. His cars were well known all over the world and at one time they attained the World Speed Record for miniature cars. Ill health kept "Bill" out of the running during the later years, but as one of our Life Members he will be sadly missed.

We have had some very pleasurable visits since our last Newsletter, both to societies similar to ours and also to see loco's. a little larger. The coach trip to Bressingham was blessed by a bright, warm, sunny day. Members enjoyed rides on all sizes of steam locos, ranging from 9½" to full 4'8½" gauges. Set in a background of gardens covering six acres were locos. of standard gauge:- L.M.S. 'Royal Scot', 'Duchess of Sutherland', No. 2500 and L.M.S. Tank (this was in steam), 'Oliver Cromwell' and many more. There was also a goodly show of traction and road engines, not forgetting a working steam roundabout complete with organ.

Another sunny day found us at Bristol S.M.E.E. track which was also enjoyed by all. We were made very welcome and steamed our way round a well signalled track. Other visits, which I was not able to attend, were to the Southern Federation Rally at Chingford, Beechurst S.M.L.S., and the Southern Federation Rally at Malden. Last Saturday Eltham & District paid us a visit at Mote Park.

Our Open Air Exhibition at the Park on August the 10th turned out rather damp to say the least. This was a shame after all the hard work by our Members to make the day a success. And speaking of success, we have had a very good running season up to now, so keep up the good work, and my thanks to all those who have made the above possible.

Thanks for reading.

Jack Payne. Chairman

NEW MEMBERS

Mr. R.D. Hodges, 'Cozenton', Boxley Road, Walderslade, Chatham, Kent.

Mr. R. Draper, 173, Bembrook Road, Hastings, Sussex.

Mr. P.B. Hempstead, 23, St. Margarets Drive, Wigmore, Gillingham, Kent.

M.M.E.S. ANNUAL OPEN AIR EXHIBITION

Well the weather did it again. We had intermittent showers all through last year's Exhibition which meant that we had to keep covering and uncovering the exhibits - at least we were spared that problem this year. The covers went on about 1.00 p.m., just after everything was set up, and they came off about 6.00 p.m. when everybody went home!

But despite the weather we did have a very good turnout which perhaps made it more annoying that so few of the general public and indeed our Members, were able to see the exhibits.

There was the usual predominance of railway engines but several stationary engines made a surprise appearance. Richard Linkins ran Nick Nicholls' set up in Nick's enforced absence and coped competently with the cats cradle of copper and rubber tubing, unions, taps etc. Richard provided one of the stationary engines, a Stuart No. 10 Horizontal. Keeping it company were Nick's beam engine, Reg Robinson's table engine and two products from the Ray Wilkinson stable. The first was a "Stuart" beam engine (bore 1", stroke 2") modelled on those extant at the beginning of the 19th Century and complete with Watts Parallel Motion as patented in 1784. Ray's other stationary engine was Stuart's No. 4 horizontal engine but with ball races in place of plain bearings and also a sensitive governor.

Ray's 5"g. 0-6-OT Simplex "Patricia" was the first in the line up of tank engines which occupied one side of the display track. This was buffered up to Reg Holdstock's much modified 5"g. 0-4-OT Simplex "Sally", accompanied by a scale coal truck and then came Ray Milliken's 5"g. 0-4-OT Ajax, "Linda", Martin Parham's 5"g. 0-6-OT "Speedy", Fred Laroche's 5"g. 0-6-OT based on the L.M.S. Jinty and finally Tim Gregson's 5"g. 0-6-OT "Butch".

Turning the corner we then came to Ernie Pursey's "OO"g. display. The advantage of this size is that you can build and run all your favourite loco's in the same time as it takes you to build a couple of 5"g. locos. Some of our Members viewed the accompanying exhibit with, to say the least, reserve as it was the frames and body shell for a 5"g. "Co - Co" diesel. Is it a sign of things to come? We already have a Hunslet diesel outline, electrically powered, which does have the advantage that it doesn't take $\frac{1}{2}$ hour to prepare and nearly as long to blowdown and cleanup. Ernie Pursey also showed a $3\frac{1}{2}$ "g. 4-4-0 modelled on the N.E. Rl.

Charlie Haywards 4-6-0 chassis has progressed since we last saw it and was next to another of Reg Holdstock's engines, his well known $3\frac{1}{2}$ "g. "Cock of the South" 4-8-2. An engine rising like a phoenix from the ashes (figuratively speaking) of its rebuild is Martin Parham's 5"g. "Green Arrow" 2-6-2. and looking better each time we see it.

An engine, new this year, is Peter Chislett's 5"g. "Terrier" which is now virtually finished and a good runner. Don Patterson is also building a "Terrier" and although it is less advanced he has painted as he has gone along. The paintwork and detail, much of the latter researched by Don himself, promises a little gem of a

locomotive. Peter also showed the stainless steel boiler for his 3½" g. Lynton & Barnstaple engine. Ken Linkins showed his 3½" g. 'Schools' and Ray Milliken his well known workhorse 5" g. 2-8-0 "Consolidation". Jack Carr's new 5" g. G.W.R. 'King' chassis made its first appearance and showed some impressive workmanship. Jack has taken his usual trouble to get things as accurate as possible, down to the correct shaped bogie stabilization bearers.

Despite the rain some brave souls wanted rides so some even braver souls ventured onto the track with their engines. Barry Lawson with 'Wayfarer', Ray Milliken with "Duke of York" and Ray Wilkinson with "Torquay Manor" soldiered on, and were joined by one of our regular visitors Terry Baxter with his 5" g. Nigel Gresley. What a shame that our English weather brought everyone's efforts to nought.

Graham Baseden

MAIDSTONE "PLAY AWAY"

A contingent from M.M.E.S. visited the Southern Fed. Autumn Rally at Chingford on Saturday 6th September and the North London Society's Open Day at London Colney the following day.

Despite all the efforts of the weather man it was fine and warm at Chingford. I arrived first at 10.30 and was second on in company with a "Maisie". Fred and Connie La Roche arrived about an hour later with "Groombridge", soon to be followed by Ray and Margaret Milliken with "Duke of York" and Martin Parham with his "Speedy". Everyone was soon in steam and most of us were allowed two hours' driving. Ray had a disappointment when he found the bends just a bit too tight for his machine and was thus prevented from running. A picnic area had been roped off and a very pleasant afternoon was had by all. Unfortunately the Rally was not very well supported by other clubs, our mob being the biggest by far. To finish off the day Laurie Joyce of the host club steamed his 3½" gauge G.W.R. King. This won the 1975 I.M.L.E.C. and its performance was most impressive.

The Sunday at London Colney was even hotter. I arrived at about 11.15 and again was second on. This early arrival definitely pays dividends as I had almost two hours' uninterrupted run before the crowd arrived. Connie and Fred with "Groombridge", Margaret and Ray with "Duke of York", Martin and Julia with "Speedy", the Family Linkins with "Joan" and Doreen and Tim Gregson with "Butch" turned up in quick succession. All were allocated times and everyone had about two hours on again. Things got bogged down a bit for, despite the length of track, there seemed to be too many engines on. Running of visitors continued until about 6 o'clock, when Richard Linkins was finally persuaded to come off.

Members of the host club then started running, the 4-4-0 'George the Fifth' of G.M. Cashmore being the most outstanding. This has been in evidence many times on the S.M.E.E. Track at the M.E. Exhibition and performs just as well on a continuous track. Again a very enjoyable day and definitely worth the journey.

A certain Mr. Lawrence was present with camera so no doubt pic's will be in M.E. about Christmas.

EXPERIENCES IN MAKING INJECTORS

Having made the two pieces of the combining cone, two small, simple gadgets will be required to assemble them in the injector body. The item shown in Fig. 1 is used for hammering or pressing the cone halves into the body without damaging the ends. It can be made with a register provided it is made to suit the body you have produced. The item shown in Fig. 2 is for gauging the correct gap between the two halves of the combining cone as the second half is assembled.

Steam Cone.

The production of the taper in the bore was covered in Part 2 of these articles. The rest of it is very straight forward with one exception which also happens to be one of the most important features. This is the business end of the steam cone, the machining of which will be greatly simplified by using the item shown on Fig. 3.

The end of the 1/8" dia brass rod is turned until diameter 'X' is such that it will enter the large end of the combining cone bores to the correct depth as given on the drawing (dimension 'C' on Martin Evan's drawing MAP No. LO 37) which is 22 to 40 thou', depending on the size of injector under construction. When the combining cone has been positioned in the body, insert the turned end of the 1/8" dia brass rod until it touches the large end of the combining cone bore. While holding it in contact, slide the collar along until it butts against the end of the body and lock it with the screw. You now know the precise length required from the shoulder of the cone to the discharge end. See Fig. 4.

The outside diameter of the small end can now be turned to give the correct diametral clearance between steam and combining cones. From experience I've found that the outside diameter of the small end of the steam cone should be 9 thou' less than 'X' (Fig. 3) if the delivery cone is 0.022" bore, and 11 thou' less than 'X' if the delivery cone is 0.030" bore. These are sizes 1 and 2 on Martin Evans drawing which are the ones on which I have concentrated up till now. Steam cones for any combination of cone sizes can be made using this procedure, but the clearance between steam and combining cones would have to be found by experiment.

Delivery Cone.

The depth gauge is needed again, using the plain end of the rod to determine the length of cone required. Make the cone 5 to 10 thou' less than the gauge length. The internal radius of the small end is produced by a suitably shaped 'D' bit, followed by hand scraping while the lathe is running to remove the circumferential ridges.

Probably a few tips on the drilling of small holes would be beneficial to the beginner. Despite what has been stated in a recent article in a magazine covering our hobby, you do not need elaborate equipment or super-high speeds. My own lathe has a top speed of 750 R.P.M. approximately and I've drilled a No. 80 hole (0.0135" dia) 3/8" deep in mild steel without trouble. My drilling equipment consists of a mandrel fitted into the tailstock with a 5/16" dia hole in the other end into which is fitted a small pin chuck which is home-made. See Fig. 5.

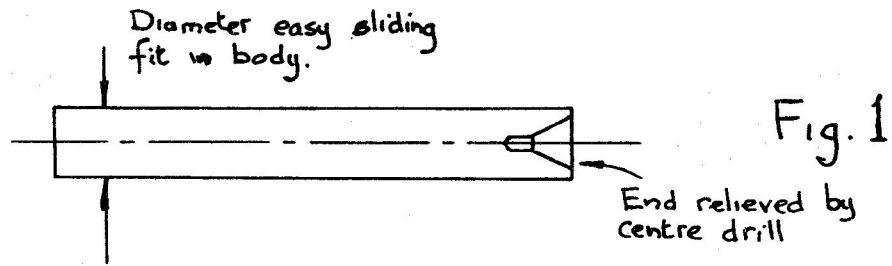


Fig. 1

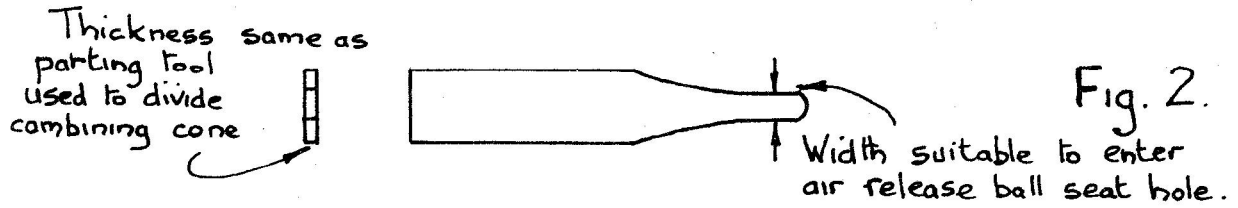


Fig. 2.

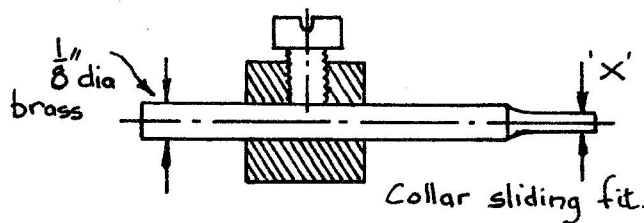


Fig. 3

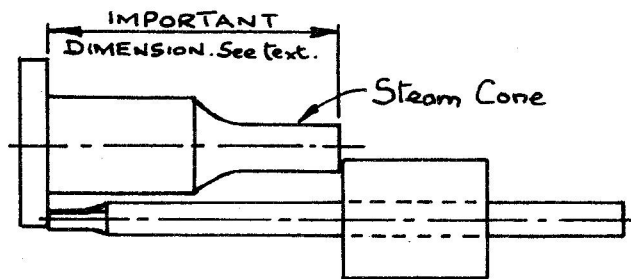


Fig. 4

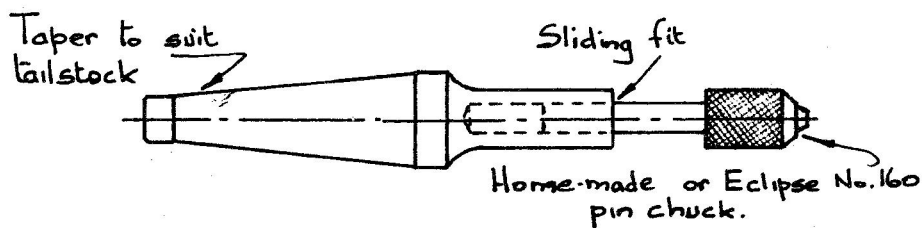


Fig. 5

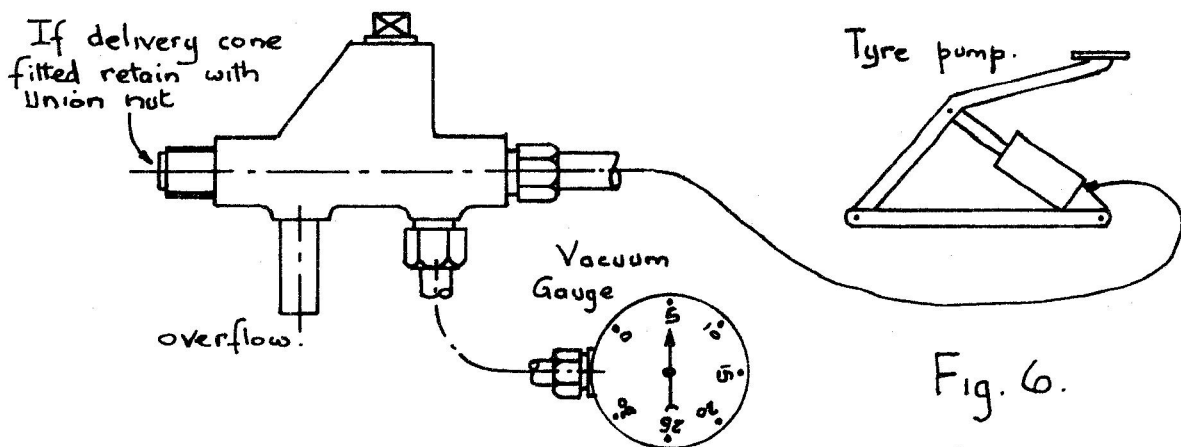


Fig. 6.

The knurled portion of the pin chuck is held gently between thumb and forefinger and fed with light pressure towards the job, drilling a few thou' at a time.

My completed injectors are tested on a stationary boiler fired by propane. Heat is applied until 110 lbs/sq.in. is achieved, and after removing the propane torch, the water and then the steam are turned on. With luck it starts working and carries on doing so until the pressure drops to around 50 lbs/sq.in. when it will probably start to dribble. During this test the water is turned off and on a couple of times (the steam being left on) to make sure that the injector picks up each time. Should water come out of the overflow at a fast rate it is because the clearance between the nose of the steam cone and the inside of the combining cone is too large. If steam rushes out of the overflow then the clearance is insufficient.

Another test which gives a good indication on whether the unit will be a reliable starter even if the steam is turned on first, is to connect up as shown on Fig. 6. When the tyre pump is operated the gauge should indicate a vacuum of approximately 5" of mercury. If it does not either the depth of entry of the steam cone into the combining cone is wrong or the path between the halves of the combining cone and the end of the overflow pipe for the exhaust of air is restricted in some way.

That concludes this series of articles which I hope will have uncovered some of the 'secret mysteries' of injector making. I wish future makers every success in their efforts and will always be willing to provide any additional information required.

Fred LaRoche.

COMING EVENTS

Saturday, 18th October; ENGINEERING EVENING - bring along your 'bits and pieces' (See the Editorial), PLUS two 16 mm films on American Model and Miniature Railways.

Saturday, 15th November; Talk on Model & Full size railways in South Africa, illustrated by slides and cine films.

Saturday, 20th December; CHRISTMAS SOCIAL - food, drink and dancing. 'Caesar's Palace' has got nothing on our Clubhouse!

All the above functions start at 7.30 and will be held at the Clubhouse, Mote Park. The exception is our ANNUAL BOXING DAY RUN which starts at about midday, some hardy souls even bringing their turkey leftovers to re-hash in the Clubhouse kitchen.

M.M.E.S. OUTING TO BRISTOL

On Sunday 17th August the Maidstone Model Engineering Society hired a coach to take them to the track of the Bristol S.M.E.E. in Ashton Park, Bristol. The track is 1646 feet long and is built in an exaggerated kidney shape. It is made of steel which is laid on wooden sleepers which are in turn inlaid into a concrete base. There are plans at the moment for a 5" gauge and 7 $\frac{1}{4}$ " gauge ground level track to be built around the existing 3 $\frac{1}{2}$ " gauge and 5" gauge track. The traverser is a very interesting one for its principal feature is that it overrides the track which therefore causes no break in the rails. There are semaphore signals which at the moment are in a preliminary stage, but from what we saw they were working very well.

The coach arrived at the 'Autoyacht' garage in Gillingham, at 8.30 (many thanks to Martin Parham). The engines were then loaded into the boot and that's when the trouble started. It was thought at first that it would not take the weight, especially Ray Milliken's "Duke of York", but after some discussion it was decided to put them all in and we set off at 9 o'clock. We arrived at 1.30 after stopping a couple of times to pick up other Members and friends. On arrival, the Members unloaded and prepared their engines for the afternoon run. Before we had our fun, John Colman (a Bristol, ex-Maidstone member), ran his South-Eastern and Chatham 'D Class', the prototype of which was the best looking engine ever to be built (please see Richard about that statement!).

During the afternoon eight engines ran, and these were:-

Ray Milliken's 5"g.	freelance 4-8-2 "Duke of York"
Fred LaRoche's 5"g.	Southern Railway mogul "Groombridge"
Martin Parham's 5"g.	"Speedy"
Ken Linkins' 5"g.	Ajax "Joan"
Reg Holdstock's 5"g.	0-4-OT modified Simplex "Sally"
Charlie Hayward's 5"g.	Springbok "Unicorn"
John Bailey's 5"g.	freelance 2-6-0
Dickie Warren's 5"g.	Ajax

As the Clifton Suspension Bridge was just down the road many Members went to see it as it was another point of interest in the district.

At 6 o'clock the coach was loaded up for the journey home, and by half-past we were on our way back to Gillingham. We arrived home at 11.30 p.m. after a stop in London for refreshment at the "Five Bells" Public House. The coach was then unloaded and everybody went home after a long but enjoyable day.

The coach trip was a great success and our many thanks must go to everybody who organised it, and especially the Bristol members and their wives for making us so welcome and supplying us with cups of tea. The weather must also be thanked for being so warm and sunny throughout the day.

Graham Linkins

"A BAD JOB"

Over the past few weeks I have had the rather interesting task of assessing and reporting on a 5" gauge "Maid of Kent" which was brought to me with the enquiry as to what would be necessary to put it in running order, with a view to running it eventually at Mote Park. The engine was purchased at an auction by a young man who actually knew very little about locomotives, but was indeed really interested generally and had already obtained one or two small gauge models, mainly for show as ornaments. He had undoubtedly been influenced in this particular case by the general appearance of the engine and the description in the Catalogue, which I understand stated that it "was a well engineered model locomotive". The outward appearance was quite good, the painting well done and the lining, although on the thick and heavy side and with the lettering 'S.E. & C.R.' in about $1\frac{1}{2}$ " letters on the tender, very good indeed. Actually, to anyone who has worked with steam it was certainly marred by a polished smokebox door, the whole of the chimney and in addition the smokebox saddle. To anyone knowledgeable on these things, these were completely wrong but could quite easily be rectified with a coat of suitable paint, mainly black.

However, a little look round as a preliminary showed that some very glaring errors had been made in the final assembly, (a) the pressure gauge was connected to the whistle valve and the whistle to the same fountain outside the cab under continuous steam and (b) worst of all the main steam pipe from the regulator cut right through the chimney choke, and the petticoat pipe had been cut away to clear. These made me rather suspicious of the whole engine, and as the wheels couldn't be turned it appeared right away that a thorough examination, which would necessitate some amount of dismantling, was really called for before anything could be decided about putting things right.

Since the wheels were locked more or less solid the first thing to do was to remove the coupling rods and it was obvious what was wrong when the retaining screws and washers were removed. The rod on the "Off" or 6' side was jammed on the coupling pin on the outward halves, whilst on the platform side there was a gap of something like $1/16$ ", so the fit of the bushes could be called "slack". After prising this rod off, the other near side could drop off, as again the clearances were excessive. The reason for this amount of play was to accommodate either a bad piece of workmanship in the 90° setting of the two cranks, or lack of squareness of the driving axles to the frames. In actual fact there was something like $1/16$ " difference between the centres of the driving wheels from one side to the other, measured with a trammel. Whether or not the crank pins were set correctly with that error in the wheel centres it didn't matter very much at this stage.

Another item which caused more suspicion was the radius rods of the Joy valve gear. On the platform side it had bends in the form of a cow's horn, but on the "6ft" side was quite straight, the former being obviously shaped to shorten a rod which had been made possibly about $\frac{1}{2}$ " too long (in 4" or so), or even one salvaged from some other job and bent to suit. The pipe from the "6ft" side clack valve on the front end of the boiler ran back through the cab front, over the splashers, and bent down and finished on the cab floor, a useless position unless you happened to have a connection to some pipe passing through the coal space of the tender. It was now quite patent

that there was something very suspicious about the whole engine, so after some discussion it was decided to get down to details and also make out a complete report of my findings.

So, off with the boiler. This proved no easy task as the first tight item was the ash pan. The securing pin came out all right after "persuading" it with a long punch and hammer, and after prising with a large screwdriver the whole of the pan and grate fell out. After the bolts securing the smokebox to the saddle and the steam pipe joint to the cylinders were undone, the boiler and smokebox should have lifted off, but instead something rather easier happened. The boiler came clean away from the smokebox as they were not fastened together in any way, the smokebox was simply an easy fit on the boiler drum with a lap of about $\frac{1}{4}$ " and no seal or fixing screws. The back end was rather more trouble as the outer firebox shell was jammed tight between the axlebox guides which had been badly cut away to clear, and left very little metal to support the sliding face of the forward axlebox surfaces. Anyway, with a little help from the same large screwdriver the chassis and the boiler were parted.

Getting now a plain view of the whole motion one could only say that the workmanship was awful. Apart from the bent radius rod the link block and trunnions were out of square with the frames by about $\frac{1}{8}$ ", the big ends of locomotive type were badly made and fitted and the little ends were so tight that the connecting rods stayed in the up position when the big ends were removed. The pistons and rods were very tight indeed and would certainly need dismantling to find the cause of the trouble - possibly an eccentric rear cover and gland. On removing the steam chest cover the valves and valve faces appeared to be reasonable. But as was expected the valve movement and tuning were hopelessly "haywire". One port never opened at all on one side and on the other, the port opening was very uneven. The brake gear on the driving wheels, operated by a cast cylinder, would not move for reasons unknown, and there was no point in trying to find out. The overall condition of the chassis was sufficient to justify immediate scrapping or stripping down completely, using any decently made parts and remaking. Actually the only bits worth using again may have been the cylinder assembly, driving wheels and axles, provided that the quartering of the crank pins was correct, and possibly the complete bogie, which was never examined in detail.

So much for the engine. Now for the crucial part, the boiler. I had already agreed with the owner that the engine might be suitable for a complete rebuild at a somewhat high cost, provided that the boiler was in everyway satisfactory and sound. Stamped on the bottom of the backplate was the information "tested Sept. 1969 250 lb. per sq. in", which with the very close spacing of the firebox stays seemed a hopeful sign. Unfortunately the rest of the boiler drum could not be examined as the maker or final assembler had soldered all the drum and firebox cleading joints, rather naughty this! To examine more closely the hidden parts would have meant unsoldering these joints and so ruining the excellent painting. Obviously the next step was to see if the boiler would stand the 250 lbs. stated, so several backhead fittings were removed, check valve, water gauge, whistle fountain etc., and screwed plugs fitted. Here trouble again showed itself, the female threads in the bushes being very poor indeed and some were badly stripped. The blower fitting seemed to hang on a couple of threads and the hole tapped direct into the copper backplate allowed a plug to waggle about until screwed up to the shoulder.

The regulator gland and flange was a weird affair and fastened to the bare copper, with just a piece of packing and steel 5 BA cheese head screws, at least half of which had stripped threads in the copper. The inner dome was held by a series of 5 BA cheese heads, again some of brass and some of steel, tapped into a copper dome ring which was only about 3/16" thick at the crown of the drum (its thinnest part) and as I found out later, several in this thinner portion had stripped threads and could not be tightened. The main steam pipe finished flush with the smokebox tube plate and had been flushed with soft solder, and the connection to the cylinders fitted direct, with a little packing and 5 BA screws again. After tightening most of these small screws, - all or most had not been screwed home - and checking over generally, the next job was to see if the thing would hold pressure. Actually, after fitting up a pump and a 6" gauge reading to 250 lbs (original cost 12/6) it wouldn't hold water, let alone pressure, the main leakage being from the regulator flange, steam pipe flange and the inner dome ring joint. Vigorous pumping would generate about 5 - 10 lbs., not more, and this with a pump having a plunger of something like 7/8" bore and 1½" stroke, which with a sound boiler can increase pressure by 40 - 50 lbs. with one stroke.

The leaks in the backhead and steam pipe joint in the smokebox could have been dealt with satisfactorily with some "botching up", although the soft solder in the front tubeplate would have presented some difficulty and would have meant cutting out the old steam pipe and putting in a new arrangement. The massive leak around the dome ring was rather unusual as this hadn't been experienced before. On removal of the inner dome the fact that some of the screw holes had stripped threads became apparent, but as these did not pass through the boiler drum into the steam space, water could not have been lost through the holes and must have all been through the joint itself. The inner dome was simply a piece of brass tube plugged at one end and with the seating ring silver soldered round, all on the skew which naturally tilted the dome itself when home, and which had not been noticed. The face was discoloured in places showing that it hadn't been seating properly and so the ring itself was faced in the lathe for a perfect seating. New packing was fitted, the dome replaced and water tried again. The leakage was just as bad so obviously something was seriously wrong with the seating ring on the boiler. This was tested as well as could be with the regulator rather in the way, with a piece of ¾" thick ground glass which actually rocked when pressed on to the seating, so the only way to deal with this trouble would be to melt off the existing copper ring and fit a new one with studs, not screws, to hold down the inner dome. To carry this out would have meant a major operation, for to get the regulator body itself out meant unsoldering the cleading joints with the resultant damage to the paintwork, which would be exceedingly difficult to match and probably mean a complete repaint of the whole loco.

It was now quite evident that the only solution was either to take the whole lot to pieces, save what was re-usable (an unknown quantity) and practically remake the boiler, or to put the loco. together again and return it to the owner, with the rather sad report as to its condition, and that actually it wasn't worth rebuilding. All in all a very sorry business, as it was - due to the several glaring errors - clear that the engine had been assembled with the express intention of selling by auction, as it could never have been sold privately, or for that matter anywhere where it could be properly examined. Even a push along a table or a plank of wood would have shown up the stiffness in the driving wheels and suggested that things

were not as they should be, and along with other visually incorrect or bad details, put off any prospective purchaser. Anyone who would try to sell a loco. in such a state could certainly have added the test stamp as further convincing proof that the engine was in order so far as the boiler was concerned. How any test at any pressure was carried out is rather a puzzle.

It is now some nine years since an eminent firm of auctioneers wrote to me for advice, saying that they hadn't had a sale of toys or models since the late seventeen hundreds and that they were contemplating having a sale, provided that sufficient entries could be obtained. I made a suitable reply and also passed the information to the Managing Editor of the Model Engineer (a long standing friend of mine) and most of us know the outcome.

Apart from the fact that spurious items can be sold in this manner, I cannot see how anyone could dispose of say a fake piece of silver, glass or painting as these firms have on their staff, or as Directors, specialists in most things that are sold. Not so with models although there is rather more in a Model Locomotive than meets the eye, especially if it is sold as a working model; one has to have a certain amount of equipment to prove or disprove this, and above all a good working knowledge of how the thing works. With a work of art this hardly applies as appearance, maker's marks, and general feel are sufficient to differentiate between the genuine and the fake to an expert in that particular field.

In conclusion, there is one valuable service that these auctions, conducted recently by two or three reputed firms, can provide, and that is that they have at last made people realise that models are (and always were) works of art and are therefore valuable either as "workers" or as museum pieces. We all know, and particularly so here in the M.M.E.S., how unwanted model locos. were disposed of by the widows of the makers. Possibly up to ten years ago they had very little value indeed, and when not wanted or interest waned, were more or less given away as they took up too much room and didn't as a rule take kindly to being laid up and pushed anywhere out of the way. Things fortunately are different to-day and models can, and indeed do, command a fairly reasonable price. Although this may not actually compensate for the total amount of time and labour spent on the work, it can constitute a small token for the thought and care bestowed on it from the inception.

Jos. N. Liversage

PERSONALITY PROFILE - 2

Nick Nicholls has been a Member of our Society since the late nineteen forties but was involved with steam and engineering long before that. Whilst still in a pushchair he was taken by his father to watch the ritual Sunday morning boiler washouts of the "Sentinel" steam lorry which his father drove.

This was in the 30's and Nick's father was employed as a driver by 'Burroughs', a firm of builders who also ran a small haulage business in Maidstone. Life in general was hard for a whole lot of people at this time and although Nick's dad was paid about £12 a week, good wages in those days, he had to work a 70-80 hour week!



A typical working week would start at 3.00 a.m. on Monday morning when he arrived at the yard to light up the "Sentinel". This was already loaded with, including the trailer, twenty one tons of paper. At 4.00 a.m. they would pull out of the yard and head north for Liverpool. With stops for coal and liquid refreshment, for both men and machine, they would arrive at Liverpool docks about 6.00 p.m. After unloading they would coal and water at one of the special depots which were the equivalent of today's petrol stations, then round to the transport office for a load which would take them at least some of the way back. By picking up and dropping "back loads" all over the country they would slowly work their way home. Occasionally it could take three weeks to get home but they were usually back to Maidstone by Saturday midday. They would then have to wash down their vehicle, go back to Tovil and Bridge Mills to load up with paper again and garage the "Sentinel" ready for the weekly washout. The garage had a brick chimney in its roof and the lorry was parked with its own chimney beneath this brick one to create the necessary draught when lighting up. Naturally as a "nipper" Nick was allowed to go with dad on local runs sometimes, always providing he didn't get too dirty!

Nick started to get interested in steam whilst still at school. A daily lunch-time chore was to cycle down to Springfield Mill with his dad's dinner in a basin covered with a cloth. His father was at this time working as a stoker and as a "special treat" Nick was allowed to put a shovelful of coal into one of the three 'Lancashire' boilers under his father's care. Each of these boilers was 90' long with 12' long grates and between them consumed some 16 tons of coal (a lot of it in dirty great lumps) during a nine hour shift. And because of the wartime manpower shortage it all had to be shifted by one man! In fact dad had three allotments and Nick often used to look after the boilers while father was doing a quiet bit of gardening.

The steam was used in various processes involved in the papermaking and also to power an ex-marine vertical compound engine. This ran at 70 lbs. pressure, contrary to the popular belief that it needs twice that pressure to get such an engine to work successfully. At weekends when the mill was not working the boilers were used to distil water pumped out of the Medway. They made somewhere about 40,000 gals. during a weekend which would be used during the week to produce a special medical paper. One other point of interest was the chimney for these boilers, situated a quarter of a mile from the boilerhouse and connected by an almost horizontal brick flue big enough to walk in. The idea was to carry dust and soot etc., away from the actual paper making processes. After the annual shutdown of the boilers for inspection and because of inherent dampness in this flue caused by underground springs, the whole flue had to be stuffed full of dry straw which was ignited to dry out the flue and create the draught necessary to draw up the relit furnaces.

At the end of the war Nick was apprenticed to a blacksmith at "Weekes" the old Maidstone firm of agricultural engineers. Their premises were just below Brenchley Gardens and they made tree sprayers and suchlike, even producing their own castings. Nick served his apprenticeship of seven years and as a reward received his National Service call-up papers! The fact that he never did do his National Service is another story in itself, which I will leave Nick to tell!

It was in 1954 that Nick decided to buy a steam lorry. He paid £25 for a "Sentinel" model S4, built in 1937. This had (or rather has as it is still around but alas, no longer belonging to Nick) a water tube boiler working at 255 lbs per sq. inch with four sets of superheater coils giving a very high degree of superheat as per the "Doble" steam cars. The boiler powered a four cylinder, single acting poppet valve engine. This developed 120 B.H.P. which was delivered to the rear wheels via a two speed gearbox. The gearbox was supplemented by three forward notches on the reversing lever and one reverse. Dead centre on the quadrant with your foot on the throttle was "drain". These engines were not fitted with draincocks as such, and this action blew the condense onto the road via a special flap on the exhaust, whilst also preheating the cylinders. The lorry was fitted with direct acting steam brakes which were piped to the trailer. Driven from the engine was an air compressor for pumping up the tyres and there was also a 12v. 45 A. dynamo. The boiler was between the driver and his mate, who was responsible for stoking as on a railway engine. Behind each of them, at the back of the cab was a water tank giving a combined capacity of 350 galls. The coal bunker on top of the tanks held 8 cwts. which gave a maximum radius of 50 miles before re-coaling. I must admit that I was surprised when Nick told me that, unladen, the Sentinel could touch 72 m.p.h.! With a load of 21 tons its maximum speed came down to 40 m.p.h.

Its first owners were the 'London & Rochester Trading Company' and it came into Nick's ownership after a session in a scrapyards. Returning from his first run out he clobbered the gatepost, which was not surprising when you consider the unfamiliar controls. There was a steering wheel, a foot brake, a hand brake, a foot throttle, a gear lever and of course the reversing lever. Possibly the most important instrument was a mirror mounted on the dashboard. This gave the driver a view of the gauge glass which, with a voltmeter and pressure gauge, completed the instruments.

The 50's were the era when the steam rally was in its infancy. Possibly this was also the best time for these events because there were plenty of steam vehicles to be had for minimal prices by ordinary enthusiasts, not like today when it is a very expensive hobby pursued largely by affluent people. Nick attended his fair share of these shennanigans with the "Sentinel" and has happy memories of many. A typical outing would entail taking a friend and his young son, a tarpaulin, a fireman's shovel (liberated from B.R.), three hop pockets, some sugar sacks stuffed with hops and some old overcoats. At the Rally the tarpaulin would be spread over the back of the lorry with the shovel holding it up in the middle to avoid water collecting. The hop pockets were used as beds, the sugar sacks as pillows, with the overcoats as bedclothes.

The Rally Day would start about 5.30 a.m. with a wash in cold water followed by breakfast. After this the lorry would be tinkered with until about 11.30 a.m. when the party would retire to the village to buy food and, more to the point, drink! Their belated return to the Rally Field would be followed by an alfresco cook-up of the provisions they had just bought, and then another bout of tinkering and gossiping. After a wash, tea and yet more gossip, steps would be taken to alleviate the inherently dry throats caused by such goings on. It was after this evening session at the local hostelry that the junior member of the trio would come into his own. Having been on "Vimto" and crisps all evening he was the only one capable of finding his way back to the Rally Field, leading a very merry engine driver and mate.

But the "Sentinel" was not just a hobby. At the time of the Suez crisis it was used for a task essential to the country and right up Nick's street - hauling beer for "Fremlins". The first trip was from Maidstone to Faversham. They were late coming back and were caught after dark with a flat battery. The greater part of the return journey was made with just a handtorch as headlights. They went as far as Hastings, Brighton and Guildford when delivering. There may be some policemen who even today wonder if they really did see a strange vehicle flash silently past them at 70 m.p.h. plus down Seddlescombe Hill, as they lurked in a lay-by waiting for speeding motorists!

Another time, near Wrotham, they were late and trying to catch up on time. Unfortunately they came up behind a herd of pigs being driven slowly along a country lane and it looked as though they were going to be there for some time. They had a good head of steam and the injector was turned on to top the boiler right up. With the boiler full and almost at blowing off, the safety valve was given a hefty clout with the coal hammer. The result was a fountain of scalding hot water which soon cleared the pigs out of the way. The last one was overtaken a quarter of a mile down the road and still going strong! At the subsequent carpeting by the transport manager (following an acrimonious 'phone call from an irate farmer) they merely pointed out that safety valves were there to relieve pressure.

Nick finally sold the "Sentinel" in 1963, partly because the superheater tubes were ropery and very expensive to repair, and also because he needed the money to get married. This did not however end his involvement with full size steam. Many and varied (and often unprintable) were his exploits on other people's machinery. Some of the most hilarious occurred when he was moving a traction engine named "Elizabeth" to a Rally. The engine had supposedly been overhauled but some minor items like a hole in the smokebox and the high pressure slide valve off it's face give some indication of the general condition. It did however steam reasonably well after dark, which is when these events took place.

Things started badly when, because of the engine's poor steaming, Nick arrived at "The Yeoman" an hour and a half after the rest of the members of the steam powered convoy that they were travelling with. He made up for this and the landlord had no draught light ale when they left, and most of his bottled stock was stowed securely on the engine. At the first water stop the engines were satiated but their crews couldn't find the bottle opener. After a desperate, concerted search on hand and knees by torchlight in the middle of the A20, the errant opener was located - in one of Nick's spare pockets.

Trundling on through the night "Elizabeth" was a constant problem. As they neared a certain motel on the A20 her big-end began to knock, due to the high pressure cylinder not working. The arrangement was that if any of the convoy got into difficulties they blew a prearranged toot on their whistle, which meant everyone stopped to help. Unfortunately another fault now manifested itself because the whistle jammed open, long enough to reduce the boiler pressure from 180 lbs to 30 lbs. per sq. inch. This woke half the neighbourhood, including the motel manager, who arrived in dressing gown and open toed sandals to discover what all the fuss was about. Whilst Nick had been frantically trying to choke the scream of his whistle one of the crew members had found the call of nature overpowering. The grass verge in the comparative privacy of the lee of Nick's machine was convenient and Nick was unaware of this until he leaned over that side with a hurricane lamp to offer his profuse apologies to the motel manager. Rapid removal of the hurricane lamp ensured that this unlucky individual did not become aware that he had "put his foot in it". At least not until he examined his plush carpets in the harsh light of the morning. Although it was probably not the culprit who suffered, there was perhaps some poetic justice later in the trip. Someone else took the opportunity of a watering stop to dive behind a hedge. Unaware of him, Nick was also making good use of the stop by clinkering-out his fire. He chucked the red hot cinders and ash over this same hedge and the luckless individual was literally caught with his trousers down. They still had their perforations at the next rally! The journey was thankfully accomplished despite the water pump breaking down and losing half the firebars.

So, does Nick regret that he no longer has his own vintage steam machine? Yes he does sometimes, but as you will have realized he had his share of fun out of the "Sentinel". He now manages to confine his interest mainly to stationary engines, which appear regularly at our exhibitions at the Park. The question remains though, if steam lorries had had the millions of pounds spent on their development which have been invested in their diesel powered successors, would the faults which led to their eclipse have been overcome? The Americans are even now experimenting with steam powered buses with bottled gas and flash steam boilers. One thing is certain, they would be quieter and they would smell nicer!

Graham Baseden

"FRED'S"

As any engineer knows, the task that they most dread, its almost any job in which they must produce a thread. Which is a silly twisted bit, with size and pitch and form, made to fit a gauge or two, or else there is a storm. Engineers are illiterates and most of them ill bred, to whom a thing becomes a "fing" and thread becomes a Fred. There are so many Freds' about, some good, some bad, some great, and so that you will know them, I'll their types enumerate;

- (1) Left Hand Fred. There's lots of them about, who always look so awkward their deftness is in doubt.
- (2) Right Hand Fred. A normal type, who may not be too bright, but owing to right handedness, his actions seem quite right.
- (3) Fine Fred. An arty' type, who always looks so nice, everyone admires him, his appearance is precise.
- (4) Coarse Fred. A vulgar sort now hovers on the scene, an undesirable type this is, whose language is obscene.
- (5) Cycle Fred & Pipe Fred. Are two quite common types, one cycles on his way to work, the other smokes a pipe.
- (6) Acme Fred. Not pre-possessing, who looks a fair disgrace, with shoes uncleaned, hair awry and pimples on his face.
- (7) Square Fred. A solid type, who drinks good wholesome hops, likes good music now & then, but does not go for pops.
- (8) Interrupted Fred. Who has an awful stutter, sometimes known as Three Start Fred, as words he tries to utter.
- (9) Bastard Fred. Not popular, he's usually in charge, and hated universally by other Freds' at large.
- (10) Brass Fred. The moneyed one, whose wallet flashes out. It also flashes in again, when it's his turn to shout.

Having read this nonsense, and followed when I tread, I hope you're more enlightened, regarding Fred & Thread.

I haven't mentioned B.A., the learned one, with honour to his name. Or B.F. the simpleton, now isn't it a shame. Old Whitworth too I'm leaving out, or should it be Whitbread. Who cares about it anyway, I'm tired and off to bed.

P.S. Stripped Fred. We're leaving out of this, and though you think it mean. The proprieties must be observed, we have to keep it clean.

Fred

EDITORIAL

Have we the right to call ourselves the Maidstone Model Engineering Society?

A casual observer might be forgiven for believing that we were interested solely in miniature railway engines, and indeed some of our contemporary societies make no bones about this as is evinced by their titles. But whereas in common with them our overwhelming interest is in railway locomotives, this certainly need not, and really should not, be so. Obviously the Mote Park track is our major source of revenue and there has also been a phenomenal growth of interest in steam locomotives of all sizes, especially since the sad day that the diesels and electrics took over on that railway the other side of the wall. Nevertheless, our Rules state that; "The Objects of the Society shall be the bringing together of those who are interested in the construction and working of engineering, electrical, locomotive, traction, marine, aeronautical and automobile models...." It may not be generally known but in the past individual M.M.E.S. Members have held the World Speed Record for miniature i.c. powered racing cars and won a Silver Medal for ship modelling at an M.E. Exhibition.

What about it then you non-railway lovers? Let us see some more variation at our next Engineering Evening (see coming events) and at our Open Air Exhibition in 1976.

Graham Baseden

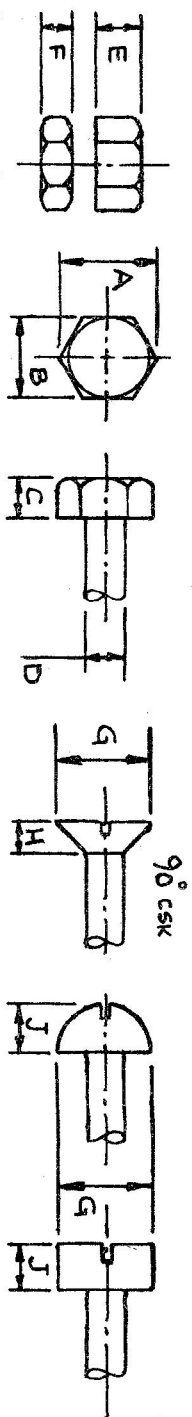
NUTS, SCREWS AND BOLTS (NO WASHERS!)

I don't doubt that in the past you have wanted to make some screws or bolts and not known which of the assortment in your "come-in-hand" box is standard, regarding head size and shape. There is a school of thought which says that standardisation doesn't matter, but for those who do not think J. Whitworth, Esq., laboured in vain, the standard BA dimensions have been collated and are shown opposite. However this does not stop you using one of the tricks of the trade by having a smaller hexagon (or other head) on a particular thread size if you so wish. At least you will be able to make both ends to the standard dimensions.

Should you be designing something from scratch, you should bear in mind that only even number BA sizes (starting at 2BA) are generally available, i.e. so-called "Preferred" sizes. If you disagree with the size given for a tapping or clearing drill, blank it out with a piece of stamp edging and write in your own choice.

No sizes have been given for the slots in any of the screws as I suspect that most people will use a hacksaw to produce them. If there is a demand for the standard data it can be produced. If you find any discrepancy please let Graham know so that details can be circulated.

Barry Lawson.



SIZE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	0.48	0.42	0.37	0.33	0.29	0.25	0.22	0.2	0.18	0.15	0.14	0.12	0.1	0.1	0.08	0.07	0.07
A/c																	
B	0.411	0.362	0.321	0.28	0.245	0.219	0.191	0.171	0.15	0.13	0.115	0.102	0.089	0.082	0.068	0.061	0.055
A/F																	
C	0.173	0.153	0.136	0.118	0.103	0.092	0.08	0.072	0.063	0.054	0.048						
D	0.236	0.209	0.185	0.161	0.142	0.126	0.11	0.098	0.087	0.075	0.067	0.059	0.051	0.047	0.039	0.035	0.031
E	0.208	0.183	0.162	0.148	0.13	0.115	0.1	0.09	0.078	0.067	0.06	0.053	0.046	0.043	0.034	0.031	0.026
F	0.152	0.134	0.118	0.103	0.089	0.079	0.068		0.054								
G	0.408	0.361	0.314	0.278	0.247	0.216	0.189	0.168	0.152	0.125	0.11	0.107	0.092	0.078	0.061	0.061	0.056
H	0.099	0.089	0.077	0.071	0.065	0.058	0.051	0.047	0.043	0.035	0.032	0.030	0.028	0.028	0.025	0.021	0.019
J	0.163	0.145	0.126	0.11	0.099	0.085	0.075	0.066	0.061	0.05	0.043	0.040	0.036	0.030	0.024	0.024	0.021
TAP	10	17	24	29	32	37	43	46	50	53	55	57	62	65	70	72	74
CLEAR	B	3	13	20	27	30	35	39	44	48	50	53	55	56	60	65	67
NEAR STD. HEX A/F					1/4"	7/32"	3/16"	3/16"	5/32"	5/32"	1/8"						BWL