FADED MERLIN MAGIC

by Tag Gorton

Once upon a time the name of Merlin Locomotive Works was perceived as being synonymous with affordable, radio controlled narrow gauge steam engines in 16mm scale. These solidly built semi-scale models, were gas fired, controllable from afar and generally had the option of a live steam whistle. They were certainly attractive to those who, like myself, were new to both steam locomotion and the great outdoors. With many modellers migrating from the smaller indoor scales, the cleanliness of gas firing and the seeming importance of being in direct control of ones engine made Merlins a popular choice. No small factor also in this initial success, were the excellent advertisements produced by Tom Cooper in the days when he wore his "Mr Merlin" hat. No-one before or since has been able to capture the attainable magic of garden steam so well in just a couple of lines of advertising copy and I was captivated.

Perhaps the prettiest of this range was the little Merlin *Mayflower*, a simple four coupled engine with fixed valve gear and no particular prototype which, with its tall capped chimney and shiny brass dome to polish, captured the Edwardian charm of the narrow gauge. My example, finished in Brunswick green, came complete with radio controlled steam whistle that could be operated whilst the loco was running and *Toni*, much modified is still on the LWR roster today and steaming as well as ever. Whilst not reaching the ever improving standards of modern locomotives, the design of the Merlin *Mayflower* and its many derivatives was basically good. Certainly a *properly built* Merlin should provide years of service before a major refit is required.

It would serve no purpose here to chronicle the reasons for the protracted demise of Merlin Locomotive Works. For those who are interested, a history of the company has been written by James Ritson and can be found on the Internet. Check out Steam in the Garden On-line at http://www.steamup.com where you will also find a host of garden steam goodies.

There are, out there, any number of defunct or dysfunctional Merlins, largely because logistical back up from Merlin Locomotive Works has for several years been near to non-existent, leaving many owners with an expensive steam engine they can't use. One can of course pass the locomotive to a model engineer for repair and there are those who will undertake this for you. The problem is that diagnosis and repair of a steam locomotive, not of ones own manufacture, is a very labour intensive operation and professional engineers are, quite rightly, not cheap to employ. The net result is that a locomotive can very easily become a practical write-off as the cost of a rebuild climbs to four or five hundred pounds. Now this is not a figure plucked from the air – I have seen invoices for this amount and have myself often spent twenty/thirty or more hours on a locomotive. Bearing in mind that the proposed *minimum* wage for *unskilled* labour is, I understand, something over four pounds an hour, it is very easy to see how costs can mount.

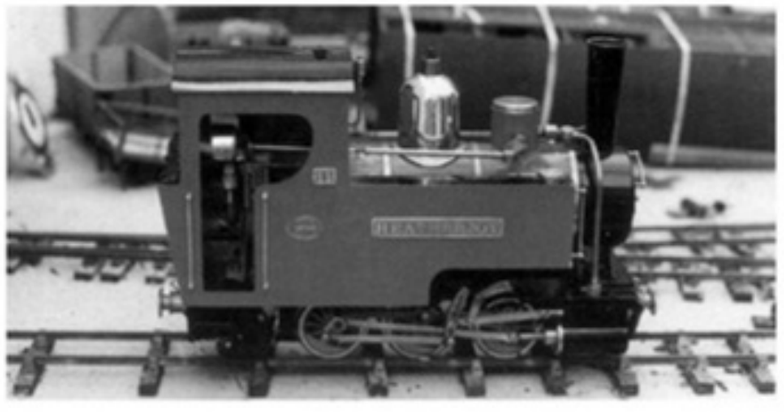
As getting spares, or anything other than a completed engine from the faltering enterprise at Llanfair became impossible, a certain amount of know-how was necessarily developed in the west country. Left to our own devices, Steve Morris, Don Arthur and myself have between us had to conduct our own repairs and source or manufacture our own spare parts. We have largely been successful in our endeavours and have, so far, not had a locomotive that could not be repaired, rebuilt or improved. Steve Morris in particular, has produced "Super Merlins" from uninspiring second-hand examples that, in their new and individual liveries, provoke admiring comment wherever they are seen. Don Arthur has also rebuilt his Merlins to his own engineering standards rather than those of Llanfair. While having no engineering skills myself, I have rebuilt several locomotives, including a redesign of Merlin's W&L Hunslet to more modern standards, allowing refuelling and servicing to be carried out without removal of the bodywork, together with a boiler fill system to enable continuous steaming. An improved standard of detailing was undertaken, utilising Pearse castings plus various standard parts. There are now several of these modified Hunslets running in various parts of the country and quite a few rebuilt generic Merlins.

I have, for the past three or four years, been repairing Merlins for fellow members largely for the cost of the parts, but with my many and growing commitments I can no longer continue to do this on the same scale if I wish to do at least *some* modelling of my own. Despite this, I feel that there should be no reason for any member of the Association of 16mm Narrow Gauge Modellers to feel stuck with a lemon because they have purchased a recalcitrant Merlin. This Association exists to further the mutual enjoyment of our particular hobby and it ain't no fun if your engine is duff. Between us therefore, we will get your Merlin fixed and we start here. If during the repair or reconstruction of your Merlin you require further information or help then please do not hesitate to call me. My telephone number can be found in the south west section of the Exchange under Longlands & Western Railway. Oh, one other thing – if I sometimes seem to be teaching granny to suck eggs, then it is because I have always needed all the information and help I can get, and this material is provided on the same basis.

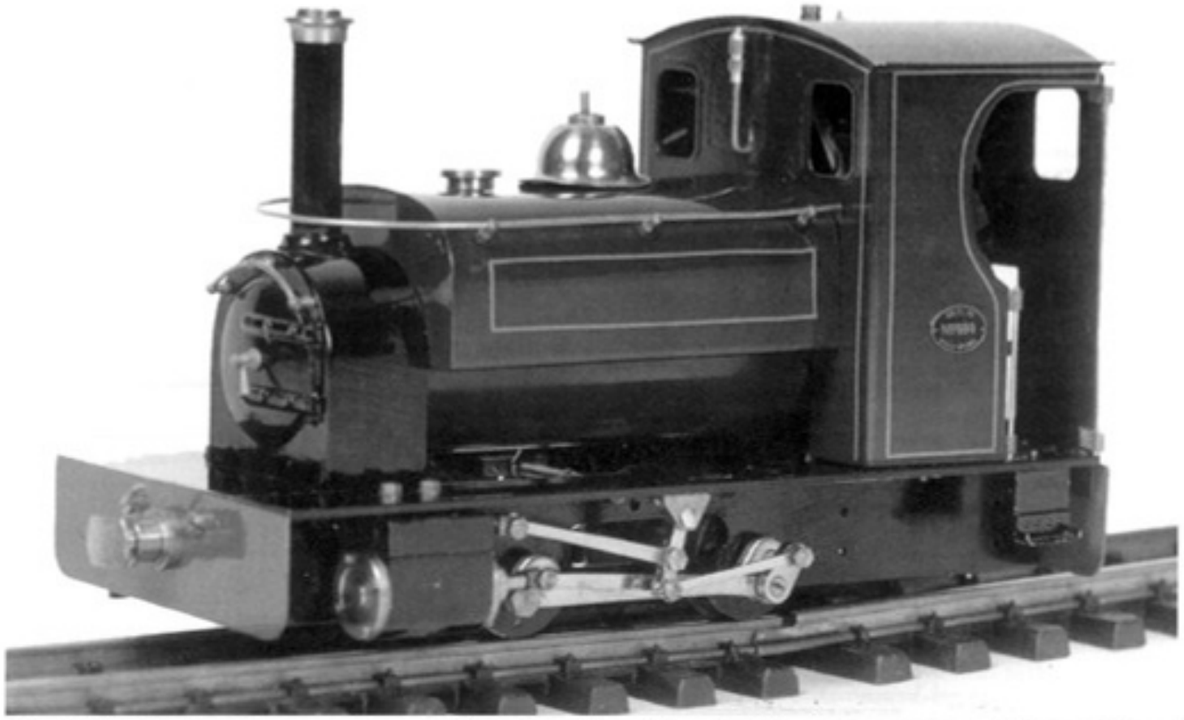
Timing

One of the commonest reported faults on a Merlin locomotive of whichever type is that it is "worn out" and won't pull. Further comment is often that the piston valves are leaking, because piston valves "wear out rather than in". Now if your engine is an early "Maestro" or any model variation with Beck running gear then "worn out" is probably correct – although it is unlikely to be the valve chests! The thin plated brass connecting and coupling rods probably *are* worn out and, if not an engineer then currently there is little one can do. I am working on this one however, and currently have our Membership Secretary's Beck fitted example in the workshops for experimentation (sorry Edward I mean repair!) and hope next year to have a reasonable non-engineering answer to this one.

For any locomotive with Merlin cylinders and running gear then things may not be so bad as they first appear. Your piston valves/steam chests *may* be worn certainly. This could be due to



Right: One of Peter Scott's venerable Merlins at Torquay. Photo Jim Slater.



lack of lubrication by an earlier owner or, regretfully on late manufactured models, may be due to use of inferior or even second-hand materials. Please bear in mind however, that my Merlin Mayflower has run a prodigious number of miles over ten years, still has the original steam chests and I do not intend changing them in the foreseeable future! If the burner works correctly and your locomotive can produce the steam, then the first thing to look at is the timing, and we will use a *Mayflower* with its fixed valve gear as our first example.

I have seen a couple of articles about Merlin timing and both of them involved partly stripping down the locomotive. We however, are going to do it the way that it was done in the factory and that is by measurement. A set of watchmakers screwdrivers, BA spanners, BA nut twirlers and snipe nosed pliers is all that is required, together with your offspring's school ruler!

First of all turn your locomotive on its side (fig 1) and turn the wheels till the axle cranks are pointing up (twelve o'clock). Check that the valve crank is angled to the rear when in this position (the exact position doesn't matter at this point). Now the job of the valve crank is, via the fixed valve gear, to provide a valve rod movement of four millimetres in and out of the chest with each revolution of the wheels. At this point you may be putting your hand up to say that your valve crank is not angled aft but *is* moving the valve rod the required 4mm. OK your engine may run – it is possible to time the loco this way but it will only run decently in one direction – we are going to do it properly!

The valve, or eccentric, crank is fixed in position on the axle crank boss with what should be a grub screw holding it at the correct angle to provide this movement. In practice, Merlin had rather a nasty habit of using any old screw and snipping the end off to prevent us lesser mortals presuming to alter the factory setting! If you are lucky, there will be enough thread left showing to grip with a pair of long nosed pliers or a pair of sidecutters. In which case one may carefully ease the screw out. If not, then you are looking at drilling the screw out or (at this point those with delicate engineering sensibilities should avert their eyes), if the adjustment needed is very small, try "easing" the crank over slightly. Do not however, use more than finger force. If a large adjustment is required then the screw will have to be removed and replaced with a more sensible grub screw. If you make a mess of your crank when drilling out, give me a call and I will let you have another.

Measure and Move

To measure the movement of the valve rod place the school (millimetre) rule across the steam chest/cylinder assembly, laid fore and aft. Now close one eye and turn the wheels clockwise until the rod has gone into the chest as far as the gear will take it (fig 2). From this point, continue to turn the wheels and measure how far the valve moves out of the chest. Adjust the valve crank to get exactly four millimetres of in and out movement before tightening the brand new grub screw that you have purchased, just enough to secure in position. Before final tightening it is best to check the 4mm of movement in both forward and reverse to see if there is any marginal difference with the slack in the running gear.

Having set the valve crank the next job is to set the valve rod so that steam is passed to the cylinders at the proper time. So again turning the wheels clockwise, position the axle cranks at three o'clock (fig 3). At this point, and also at nine o'clock, there should be exactly 3.5mm of the valve rod showing. There isn't of course – there never is – and we now have to set up this valve. Between the valve crosshead fork and the valve itself is an adjustment nut, which unfortunately only adjusts one way. If the valve is showing by *more* than our 3,5mm then our luck is in and you can wind the valve rod in with the adjustment nut. If not then we will have to take out the rod.

Undo the valve crosshead crankpin and drop the connecting link running from the fixed expansion link (see drawings) and the valve rod will just slide out of the valve bore. Please don't worry about doing something irrevocable because like all "black arts", it is basically very simple, and all we are going to do is to undo the nut, then finger screw the valve rod closer to the crosshead. We cannot measure at this stage but remember that we can adjust

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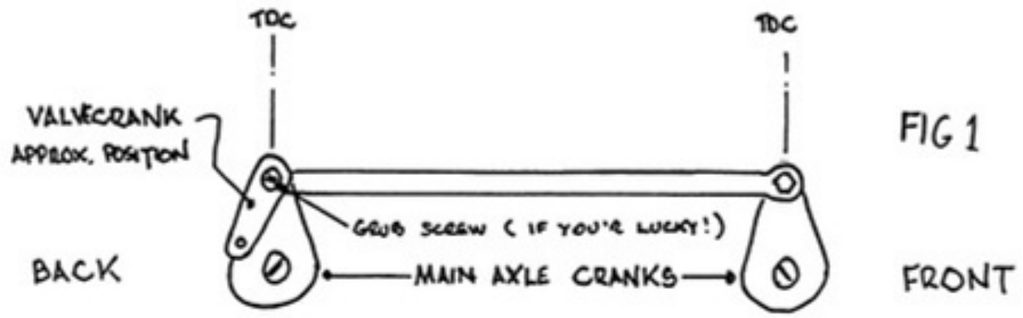


FIG 1

down to 3.5mm on the nut when the valve is back in position. Before replacing the valve rod, bung a bit of steam oil on it to ease its passage and slide back into place. Replace the crankpin using a dab of Loctite on the threads and make your final adjustments. Do not forget to properly tighten your valve crank grub screw. Oh yes, and don't forget to do the other side of the locomotive!

Testing

Steam your engine on blocks. Try it in both directions and while your engine is running, place your steamologists heat-proof finger on the valve crosshead and gently assist valve movement forward. Then with the loco running in the *same* direction, gently assist valve movement aft. If the engine runs smoother with your assistance, then the position of the valve needs to be adjusted very slightly (i.e. if it runs better with finger assistance *forward* then the valve needs to be screwed *in* (forward) slightly). You will be able to get your loco running perfectly with this method – and as many engines actually arrive mistimed on delivery – the engine may well run better than it ever has before!

Locomotives with Semi Walschaerts Reversing Gear

Bit long for a sub title but you will be relieved to know that the procedure for setting the timing is largely the same. It should in fact be exactly the same, but unfortunately I have found that the expansion link securing bracket has been factory fitted in the wrong position on some locomotives. What this means is that after punctiliously timing ones engine whilst in forward gear, one discovers that the timing is out when running in reverse!

The easy way to check this before making any adjustments, is to put the locomotive in full forward gear and measure the amount of valve showing out of the steam chest (it doesn't matter at this stage because this is a comparison, but you might as well do this at the nine o'clock position). Put the engine in full reverse gear, *without* moving the wheels, and if the expansion link bracket is correctly positioned the valve should be in *exactly* the same position in the steam chest. Check this on both sides of the locomotive because of course, there is an expansion link on both sides. If the valve is in the same position then proceed with the timing check and adjust as before with the loco in full forward gear.

If the one or both of the piston valves is *not* in the same position, then you may have a problem. Because of the incorrectly placed expansion link bracket(s), your locomotive has necessarily only been timed by compromise and has therefore never run to its full potential. There is a way round this problem and it involves removal of the expansion link and its badly sited bracket. Please do not be frightened by this – it is a far simpler job than it appears, but what I would suggest is that you do the job one side at a time – and put the screws etc in a sealable box. Tools required for this operation are as above, but with the addition of a cheap set of needle files.

Bodging the Bracket

Unscrew the screws at the top and bottom of the expansion link and it will come apart. The bottom screw also acts as a crank pin for the connecting rod from the valve crank, so the con rod will be disconnected and the slotted top plate can be removed. It is now possible to undo the two screws securing the expansion link bracket to the chassis, then remove the remainder of the assembly from the locomotive. What is required now is to provide an *adjustable* fixing and we can do this by altering the holes in the bracket to open ended slots as per the drawing. This job involves a fair bit of filing but does enable the timing to be set exactly (fig 4).

While this component is separate from the chassis it is worth having a look at the movement of the link on its bracket, because some of them are a lot sloppier than they should be. The expansion link should rock fore and aft smoothly on its bracket, without excess up/down movement. On Merlins the

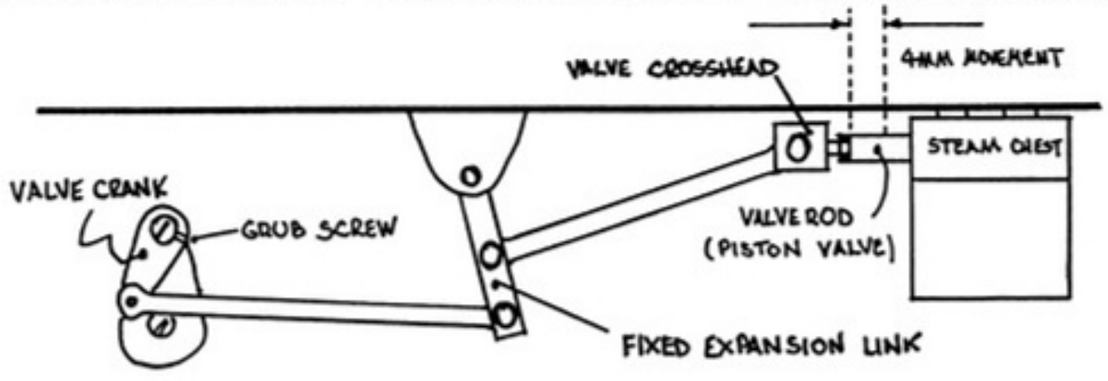
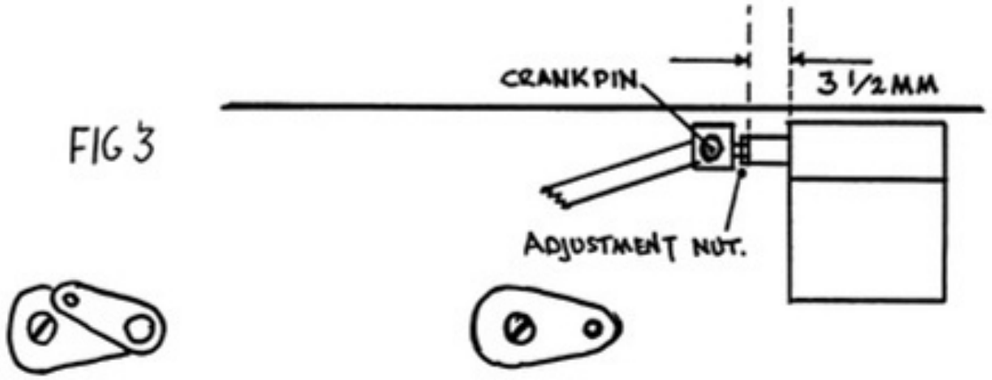


FIG. 2. N.T. SCALE

FIG 3



AXLE CRANKS AT 3-O-CLOCK
(OBTAIN 3 1/2 MM AT 3-O-CLOCK & 9-O-CLOCK)

N.T. SCALE

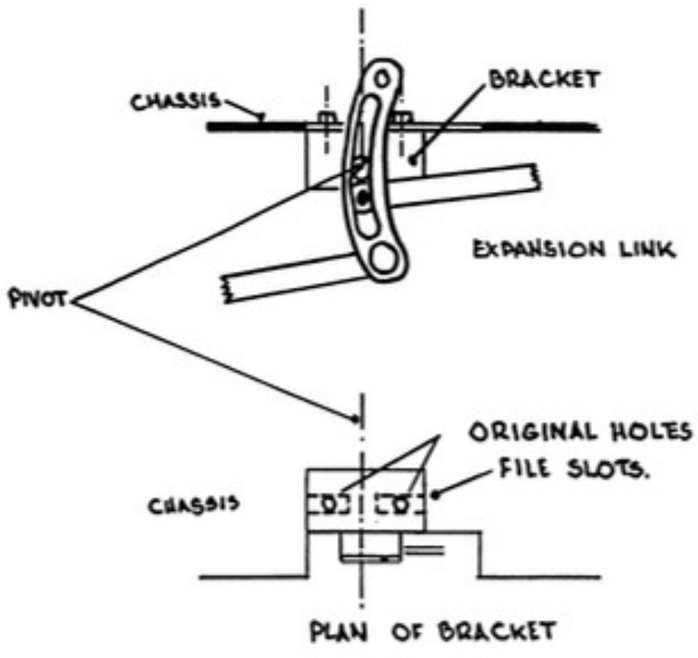


FIG. 4.

N.T. SCALE

link is fixed to the bracket with a simple nut and bolt with a second nut to lock. Remove the lock nut then make your adjustments until you get a smooth rocking movement without play. Replace lock nut with a dab of Loctite, but be careful when tightening. There is a very tiny difference between stiff and smooth!

Replace the bracket and link loosely onto the chassis, checking that the bracket will slide forward and aft. Replace the slotted top of the link, using the other side of the engine as a comparison. Again, a touch of Loctite on the threads of the screws and crankpins is a good idea, but don't go mad with the stuff! Do the same operation for the other side of the engine. Position the expansion link brackets so that when the axle cranks are at nine o'clock and three o'clock the amount of piston valve showing is exactly the same in full forward gear as it is in full reverse.

On completion, time as for *Mayflower* fixed valve gear locos above. Convention dictates that this is done in full forward gear but of course, after our efforts above, it should not matter.

Gas Firing Systems

Generally speaking the gas firing systems on Merlins are pretty good, nevertheless there have been problems and fault-finding on a gas firing system on all but the latest engines of any manufacture has tended to be a seat-of-the-pants affair. If you have any problems with your firing at all then before you do anything else, check the number of your gas jet and order a spare

from Brandbright. No – I don't care if yours is alright or not – just do it anyway!

Tools required are BA spanners, BA nut twirlers, tweezers, watchmakers screwdrivers, PTFE tape and a tipped cigarette.

The most common problem with gas firing is that the gas is difficult to light and, when lit, there is not a stable burn. The gas regulator valve on some engines are not very good either and can cause flaring when the gas tank is full, also causing an unstable burn. Some locomotives also get more than their fair share of blocked jets due to detrius in the tank/pipework and of course a roughly pricked jet (if you will pardon the expression) will always make the engine difficult to light.

I have mentioned that fault finding on Merlin gas firing is a bit of an intuititive operation and therefore there is no real logical progression for me to follow. Nevertheless, using these notes you will be able to get your firing system running correctly. Again I will take the Merlin *Mayflower* as my bench mark but all these notes will be applicable to most models and if you have something radically different then again, do not hesitate to give me a call.

The first job is to get at the system and, while it is perfectly possible to alter and adjust with the bodywork in place, it is a whole lot easier if one removes everything but the working engine. The cab back is fixed to the bodywork at the rear with an 8BA screw under the roof. Unscrew this (taking care to put it in your sealable box) then undo the screws securing the rear buffer beam. The cab backscreen should now come away with the buffer beam. The bodyshell itself is fixed to the chassis with four 6BA screws together with a nut on the cab roof, clamping to a stud on the gas tank. After removing nut and screws the bodyshell can not be removed until the radio on/off switch inside the cab doorway has been removed from its bracket. Ease off the bodyshell CAREFULLY. The wiring loom for the switch and servo are routed both over the top of the boiler and over a hook affair formed by the back of the whistle stand on the spectacle plate. This is a very awkward arrangement and on my locomotives I have re-fitted the switch plate on to the starboard side of the chassis and routed the wiring loom under the boiler so that subsequent removal of the bodyshell becomes a straightforward job.

The next job is to remove the gas jet holder from the shank of the burner and to do this, one needs first to remove the banjo bolt from the gas jet holder (fig 5). Be careful when doing this because without the support of the bodyshell, the pipework to the gas jet holder is the only thing supporting the gas tank/radio RX assembly. After removal of the banjo, temporarily tape the gas tank

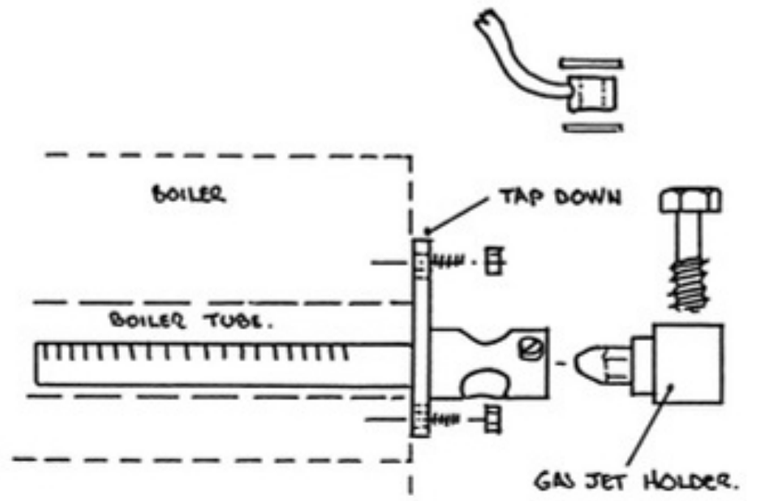


FIG. 5

safely to the boiler and put the banjo, together with its PTFE washers into your sealable tin. The gas jet holder is secured into the shank of the burner with a single screw on the side of the shank and extraction is straightforward.

The Merlin burner itself is a standard item, found on several different manufacturers engines. It is secured to the boiler backhead via the threaded stubs top and bottom of the boiler firetube and a small quadrant on the burner sealing plate is left for the passage of the superheating pipe through the tube. Some Merlin *Major* models do not have any superheating because the steam pipe passes beneath the boiler to a pressure plate regulator between the frames, rather than through the boiler to the sprung regulator/reverser beneath the smokebox. This will make no difference to the firing of your engine.

One reason I have found for unstable burning is that the burner is too high in the firetube. This is due partly to design, because if you do up your bottom nut with the standard watchmakers nut twirler, it will force the burner into a higher position in the tube. Try loosening off your nuts, then gently tapping down your burner to its lowest position before doing up the top securing nut first. This will unfortunately, make the bottom nut difficult to reach and you will need to get at it with a small open ended spanner rather than the nut twirler. Don't worry too much about tightness on this bottom nut however – the burner needs just to be held in place rather than to provide an airtight seal.

While the gas firing system is stripped down then please take this opportunity to replace the gas jet. It may not need replacing but they do not cost very much and we are into "ha'porth of tar" territory here. While into replacing things, it is also time to get rid of those rather tatty PTFE washers. These were stamped out on a rather battered machine at Merlin Locomotive Works and I have seen "threads" from these "home-made" type washers actually completely block a steam pipe. Anyway if you take one along to any halfway decent cycle shop, you should be able to get a supply of correctly sized fibre washers at a very good price.

Before replacing the gas jet, it is worth considering fitting a filter (*that's* what he wants the fag for!). I have tried various types and Pearse Locomotives use coffee filter paper roller between the fingers to provide an "in line" filter. While I have never known a blockage on a Pearse engine I don't seem to have the knack of rolling them and I have found ciggie filter to be very effective and a bit easier to manage. Take your cigarette, slice off about a quarter of an inch of filter and return the rest to its owner for disposal! Cut a small quadrant from this slice of filter, roll between the fingers and slide down inside the back of the jet. The fibres of the filter should be in line with the flow of the gas, taking care not to pack to tightly. Screw the jet into its holder, with just a little piece of PTFE tape on the threads to ensure gas tightness. Replace the jet holder in the body of the burner, pushing hard against the shoulder of the jet holder, then tighten the securing screw.

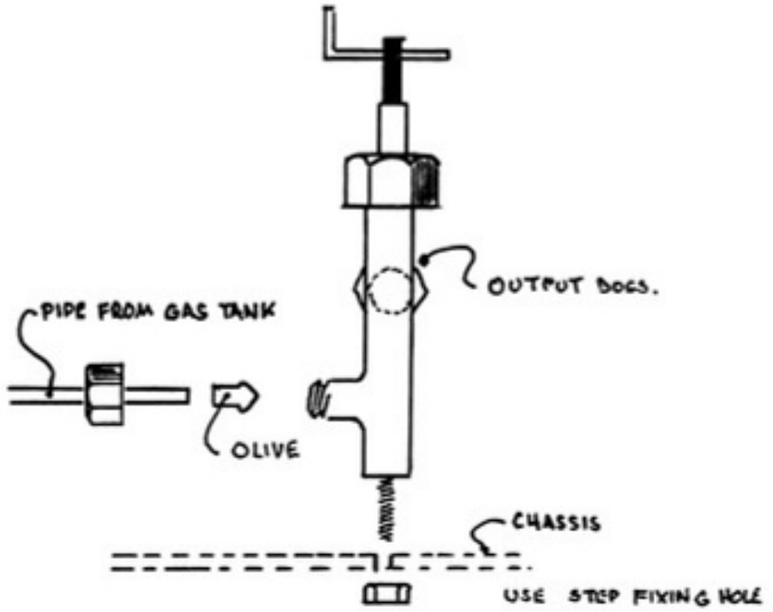
Replacing the PTFE washers with the nice fibre jobs from the bike shop and refit the supply pipe with the banjo bolt. Now this is the dodgiest bit. Banjo bolts have a hole down the centre and a hole across the thread and are therefore not as strong as they look! Believe me, it is very easy to happily screw off the bolt head and – don't forget – Merlin banjos are no longer made! They need to be done only tight enough for the fibre washers to form a gastight seal. If you DO total your banjo then don't panic – all is not lost, I do have one or two

spares and Steve Morris has made working drawings and can supply new ones. Obviously however, banjos made on a "one off" basis are not as cheap as batch manufacture – so do take care!

Generally speaking, your gas firing system *should* now work reliably. If not then check that there is not a leak at the fibre washers. A safe way to do this is to purchase a bottle of commercial leak seeker which will reveal a leak as a mass of bubbles. I have another way, but I am certainly not putting it down on paper! Anyway if there is a leak then tightening the banjo slightly should do the trick.

More Firing Wrinkles

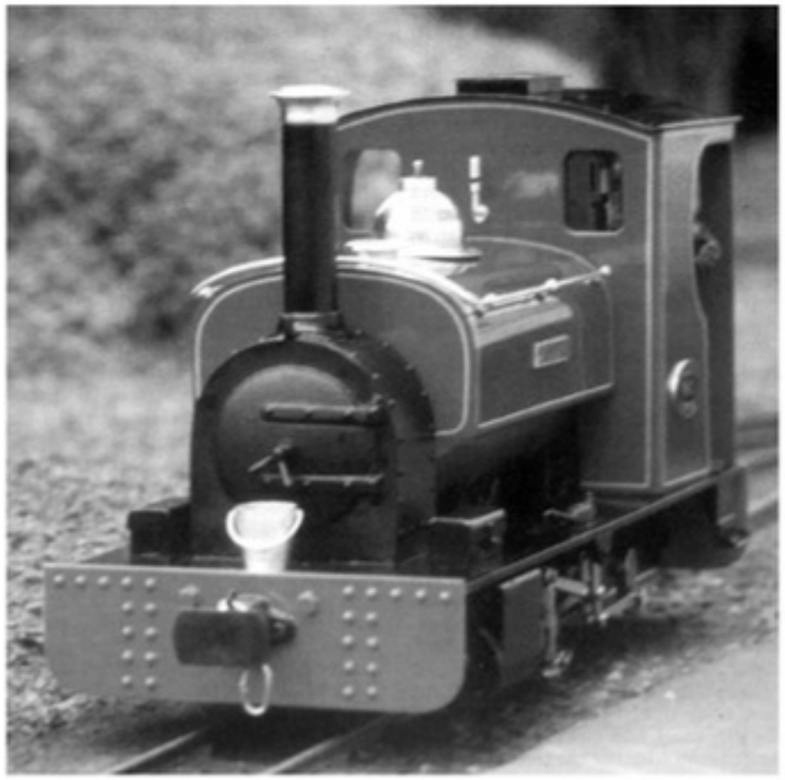
There can be other snags with gas firing. On some engines, including my own *Mayflower,* the gas regulator could be a bit problematical. My difficulty was that the gas could not be properly switched off and on other engines, flaring of the gas when the tank is full is a common fault. The simplest way of fixing this is by scrubbing round the Merlin item altogether and purchasing one of Mike Chaney's excellent floor mounted gas regulators together with the shortest length of ⅛" tube you can buy. The one with the right angled entry/exit fits most conveniently into the cab (fig 6). Several manufacturers provide these items, but do ensure that you purchase a regulator suitable for ⅛" piping. I'm afraid that you will need silver solder to fit the nut and olive. Now this is another black art that is actually quite easy, particularly for pipework.



All I use is a lump of Cornish granite for a hearth and a Calor gas blowlamp. The granite was free and the blowlamp cost £7 including a can of gas from B&Q. When you remove your gas tank from the locomotive for this job, pull off your radio receiver and aerial loop from the tank. These are held in place by double sided sticky pads which are easily replaceable. Unscrew the gas valve completely from your Merlin regulator, not forgetting to allow time for all residual gas to escape, then seal the valve hole with a 6BA bolt and PTFE tape.

Before setting about the components with a blue flame, it is best to decide where the regulator stand is going in the cab and the very best place of all is in the port cab doorway. For non nautical types, this is the same side as the current gas valve knob. You do not need to take a drill to your chassis because there are already two holes there to secure the cab steps. Turn your locomotive over on its side and remove the rear screw from the cab step. Plonk in your gas regulator stand and you will be able to drop a nut onto the threaded stub and there you are! Do make sure before final tightening that the gas input boss is pointing for'rard and the output boss is pointing inboard.

You will need to sweat the banjo ring off the pipe from the gas tank and this is easily done by placing the assembly on the hearth and using the blowlamp just on the end of the pipe. Save the ring, because you will need it! Clean the pipe end thoroughly (I use a fibreglass scratch pen) and bend it very roughly to reach the gas input boss on the regulator stand. Do not forget to put the securing ring from the regulator stand input boss over the pipe end and temporarily secure away from the work end before starting your soldering job. I would not like to count the number of times that I have either left it off or, even more



Left: A Merlin "Morris". Note rivetted buffer beam and smokebox. Compare with page 25.

Right: Vintage Merlin locos provide the steam power of Ken Tutt's railway. Photo from John Pitchford.

frustratingly, put it on the wrong way round.

OK, now lightly smear the flux over the end of your copper tube and slip on the olive. Rest the tip of the olive against your granite, firebrick or whatever – and heat the work till glowing a dull red. Touch the joint end with the solder and it should "flash" around the joint. Silver solder is quite expensive, but in any case if you use too much you will not be able to later slide your securing ring over the joint to pull the tube securely into the boss on the regulator stand. After the jont is made, play the flame up the copper pipe to heat it before quenching the work in your container of water that I neglected to tell you to have ready. This will anneal the pipe and make it possible for you to bend it to the required shape after refitting the gas tank. Before you refit, clean the joint up again with your scratch pen.

We now have to make up the link between the output boss on the regulator stand and the jet holder, using a section of new copper tube. Make up the olive end as before and solder the original banjo ring on the other end. Anneal the pipe as before, bend to shape and fit to the jet holder with the banjo bolt and your new fibre washers. Your gas system, with reliable Chaney regulation, should function very well and you should now be polishing your fingernails smugly against your overalls.

Run Silent, Run Deep

At this point you may well express yourself satisfied or, flushed with success, your attention may be engaged with the possibility of quieter gas firing. Now I'm not going to get dogmatic about this, because these burners are not that noisy, but on a couple of my Merlins I have significantly reduced burner noise by fitting stainless steel gauze over the slotted burner tube and securing with a couple of twists of wire. Now this is not complicated technology and by fitting the gauze, we are simply slowing the burn down. The large diameter firetube in Merlins enables this trick to work quite well. I have to say however, that it does not work on every locomotive and I certainly would not attempt to do this on a Pearse or a Roundhouse engine, where the balanced gas firing system has been carefully designed for optimum results.

Dodgy Body Shells

Merlin bodywork is usually quite reasonable. The paint job in particular is very tough, and probably better suited to the garden environment than that on many other models. Nevertheless the most annoying fault with the bodyshells on these locomotives is that the securing stubs, which hold the bodyshell to the chassis, seem to be poorly soldered and tend to come away from the body. Now this is a major pain in the fundament because of course, if one attempts to solder them, one is left with blistered paintwork.

It *is* possible to refix these stubs and both Steve Morris and myself have done it with excellent results. Tools required are: a pair of tweezers, a *large* soldering iron, a tube of "Easyweld" low temp paste solder (available generally from model shops or exhibitions, this stuff will melt with the heat from a match) and a sheet of soaking wet brown cardboard.

It is important to clean your prospective joint thoroughly, because as you may imagine, you do not have much time to make it. I did mine with a flat needle file to make a perfect surface, but if you have some of the original solder surrounding the joint, it can be used to "position" your stub because we will not be using enough heat to melt it. In this case clean with a scratch pen. Place your bodywork tank side down on the wet cardboard and extrude solder onto the new joint. Now this is the dodgy bit! Hold your stub onto the top side of the iron bit with your tweezers till hot then, with the stub in the same position, lower the iron on to the joint for between one and two seconds. Lift the iron away from between the stub and the cab sheet and quickly position the heated stub with the tweezers. The joint will be made and the paintwork will be protected by the wet card. A rub with "Brasso" followed by an application of "Liquid Diamond" car polish will restore the shine.

And Finally

I have not addressed here all the problems that one can encounter by any means. Nevertheless I believe that the above will cover a good 75% of all known germs! The other 25% is more problematic but there is a way forward. It may be for instance, that your Merlin has steam chests in such poor condition that replacement is required, or that due to faulty manufacture, or just plain wear, parts of your running gear are worn. After discussions with a major manufacturer, I am now in a position to obtain important parts, such as steam chests, running gear, wheelsets, crankpins, etc, etc. Many of these parts have to be modified locally, and Steve Morris has working drawings of other components such as bearings and banjo bolts that he can manufacture on a "one off" basis. Prices and availability by telephone.

I will be happy to provide what information and assistance I can, preferably in the first instance by telephone (not Wednesday evenings) or alternatively, by letter (SAE requested).

Please remember however that I am *not* in business and while I have some parts to hand, I keep no "stock" as such, there is *no* profit, and this Merlin hot line and spares service is provided for members of the 16mm Association *only*, on a purely fraternal basis. If you like, it is my small contribution to a fellowship that has provided me with an inordinate amount of pleasure over the years, at an annual expense of less than one night in a pub or the cost of a motorway meal!

And finally, I do know that some people will be in the position where they require someone to repair their engine for them. We are not all born fiddlers! Well – I do have *some* time to spare, and if you don't mind waiting a bit, then give me a call and I will see what I can do!