

So you want to own a steam locomotive?

I have spent many a happy hour at the Model Engineering clubs, when not driving my own locos, just standing there leaning on the fence and watching the trains go by and more and more as of late, my peaceful idyll has been interrupted by "excuse me mate, I've seen an engine on the internet, what's the best way of getting it tested if I buy it?" or something of that nature.

This has led me to believe that a talk about the do's and don'ts of owning or rather trying to own a steam locomotive is well overdue. I have to start by saying I am NOT a boiler tester or any other sort of club official and some of what I say now may be incomplete and arguable depending on which club you join/belong to and who you talk to. There will always be someone that knows better but it's me that has taken the time to pass this on to you via this website, however meager and incomplete some may consider it to be.

The number one tip bar non??? - JOIN A CLUB - make it the first money you spend in fact. In my chosen secular career, I have had to travel around the country over the years and have been a member, committee member and Secretary of 7 very different clubs and often have regretted having to move on from most of them therefore I speak from my experience in this respect too!

Model Engineering clubs are not some sort of elite - a couple may think they are but most don't. They are very often desperate for members that know how to hold a brush, cut grass, make tea or ride as a guard on a train. In this way you will see locomotives working and occasionally see them go wrong - further helping your decision whether you really want this or not...

This especially applies to those younger in years and they are usually very welcome too. The average age in most clubs is 50+ with the **real** craft skills amongst those 70+. The current fear amongst many is that the hobby is dying and the skills with it. This will be very much alleviated by younger members joining up. Anyway, back to the plot...

If you fancy a 'Sweet Pea' locomotive for arguments sake, the betting is you will find 2 or 3 in your chosen club that are running or being built. The owners are people that know everything you'll ever want to know about a Sweet Pea and know all the pro's and con's and what to look for in buying one. I mention the Sweet Pea design as just one example of a very popular loco but in a large club, just about every popular design of loco will be represented and if not, someone will know someone that's got one. If you become part of the club and the guys get to really know what you're about, one day you might even get a drive!

Should you still want to buy a loco, very often these clubs have notice boards and locos occasionally appear on there for sale. The advantage for you? The pedigree of the loco is known to the club and you have a high chance of a good investment. Others may catch on to the fact that you're 'looking' and might offer you a loco that they had only just been

'thinking' about selling. If you really need to spend money outside of the club then you will find an army of people more than willing to help you - model engineers just love helping other people spend their money...

Joining a club costs anything between \$20-\$50 per annum subscription, money very well spent in my humble opinion especially if you're just starting out.

If you are purchasing a complete loco (or traction engine) there is one major achilles heel...

Boilers!!

Simple - if the boiler does not have a current and 'authentic' certificate, you may as well consider the boiler to be scrap - period.

If the certificate is only a year or so out of date and the club expert you took with you thinks that 'things look OK' then insist the sale is agreed subject to a successful boiler test. When I say an 'authentic' certificate, I have heard horror stories of locos being delivered for cash, late at night and the 'vendor' has been well down the road before it is discovered that the 'certificate' is a handwritten letter saying 'I hereby declare' etc etc... This most certainly **does not** qualify as a certificate and as a result, it would be safe to conclude that the boiler is scrap.

The further advantage of being in a club is that you can see what an authentic certificate should look like. There are two main Federations that Model Engineering clubs belong to that issue certificates in this country, one being the Southern Federation of Model Engineers and the other being the Northern Federation. Certificates can also be issued by Insurance companies in exceptional cases, Cornhill and Zurich being examples who have their own boiler testers, and this is particularly the case for the larger steel boilers but you are unlikely to come across this in a 'first time buyers' market. Again the freely given advice of club boiler testers would be useful here

The current testing regime for boilers is that a hydraulic test certificate is issued, for COPPER boilers and this is valid for 4 years before a hydraulic retest is required and a new certificate issued. Additionally a steam test is carried out annually to check the safety of the steam fittings and more importantly that the safety valves are set correctly and are capable of keeping the steam pressure at the correct level under all conditions. STEEL boilers are different again and have a more stringent test regime. Again, being the member of a club and knowing 'what's what' can save a lot of heartache.

Please note - the boiler or pressure vessel itself, if made of anything other than Copper or Steel, is to be treated with the greatest suspicion, even if it has a 'certificate'. I make this point after recently seeing an on an engine for sale on the internet with a stainless steel boiler... Stainless steel is currently unacceptable for use in boiler construction in the UK.

Also any boiler certificate that states that soft solder caulking was used in it's construction

(usually on the firebox stays of older boilers) means that any leaks that develop in future tests most likely will render the boiler as unrepairable. I stand to be corrected on this one incidentally but I am 99% sure of this as I have such a boiler on one of my engines. It was not a mistake whilst building the loco on my part, I built the boiler during the 70's exactly to the 'words and music' of the designer, but current standards do not allow this method of construction.

Another fallacy is for any vendor pump a boiler up for you and say 'there you go, it holds the pressure' or more correctly 1.5 x the working pressure...this is NOT enough. While at that pressure any weak spots inherent in the design of any boiler have to be closely checked for any signs of deformation as well as leaks. A brand new or unused boiler has to withstand a 'once only' hydraulic test of 2x working pressure before installation into the locomotive chassis. It is preferred that a new boiler is manufactured by a reputable company specialising in boiler building OR if it is homebuilt AND completed to a published design AND that it already has a current 'authentic' certificate issued by a local club.

There are currently a few reputable dealers in locos and traction engines in the UK and unfortunately several disreputable - ALL the above still applies - these 'dealers' cannot issue certificates - they buy a loco with certificates, maybe polish it a bit, steam it up, add a bit of money and pass it on to you with the same certificates it came with - if any. I have been in clubs where 'dealers' have shown up with locos offering to pay for a test and certificate. They are always politely refused. One dealer brought along a loco which had a boiler that looked like it was held together with the paint - it was later seen for sale on the internet...

Are you getting a message here? JOIN A CLUB - and not just to get a certificate for the pile of scrap you have just bought - although one of the members might build you a new boiler for a small 'consideration'... A new professionally built boiler for a small 5" loco can cost from £700 to £1200 and for a large 7.25" gauge loco, this can be upwards of £5000! The other message is you cannot join a club, get a cert and then beat a hasty retreat - a new member with an engine with no certificate and a good story? You will be spotted a mile off - boiler certification is a continual process.

The last word on boilers - don't dismiss the need for a certificate if you are only ever going to run privately in your back garden. With 2 litres or more of scalding steam at high pressure sitting between your knees, it is in your own interests to have a current boiler test certificate - once you are a member of a club, certification and recertification costs nothing - YES you heard right - NOTHING!

If you need further convincing about the safety aspects of a boiler, go watch a one being 'blown down' (emptied at the end of a day's running) and consider if you would like what you observe pointing at you or your children or grandchildren.

What to buy

If you can afford it, go for 5" gauge. The cheaper locomotive designs would be the 'Sweet Pea', 'Simplex' and the 'Maid of Kent' designs and these generally go for £1500-£3500 depending on quality. I mention these particular locos as these are small, easily transportable but still capable of doing a hard day's work at a club track especially the Simplex design which can often be found running as the 'club loco'

The larger 5" designs can cost from £4000-£12000 depending on the loco and the quality of build. There are differing build qualities and buying an 'exhibition standard' loco may just mean that, it looks good in exhibitions - or it could go as good as it looks. On the other hand, the chances are if something looks scruffy, a bit knocked about and has an oily soot blackened chimney it will quite possibly run like the wind?. So expensive and nice looking need not = good and reliable

Also consider that the larger locos can also be very heavy - be sure you have the means to move them about. This means in the workshop to maintain them **as well** as transporting them as some can be more than a 2 man lift.

If you still feel the need to go for a smaller 3.5" gauge loco then something like a Tich, Mona, Rob Roy or a Juliet may disappoint, barely being able to pull much more than 2 people and needing a lot of expert work on the fire and water levels to keep going for any length of time. There is no doubt that someone will tell you they pulled 4 people round all day on their club track with a Tich... Beware the 'yarn spinners' inside or outside of the hobby... Expect to pay £1800-£3000 for a decent 'worker' like a 'Heilan Lassie' or 'Doris' (the LBSC design 'Black 5')

There are other bigger gauges and the 7.25" gauge is fast gaining popularity mainly because people in these modern times have the ability to machine large components at home now having the wherewithal to buy bigger workshop machinery and equipment to move heavier components around. Twin axle trailers are not cheap either... The lightest locos in this gauge start at 250-300Kg weight and an express loco can have an all up weight of over a tonne. At the very least you will need to ensure you can transport it around as well as lifting and manipulating it at home to effect repairs e.g. dropping a wheelset to free off a siezed axle? It does happen...

A very valid point to raise at this point... Do you have any workshop facilities at all?? Steam engines go wrong with amazing frequency and you need to be able to fix them. The ones that never go wrong do so because they are usually very well maintained, another function for a good workshop. Consider first buying a few small items and starting your first workshop, the lathe can come later but a small drilling machine, drill bits, taps and dies, files and hacksaws would be a good start.

Occasionally you will find a club that has their own workshop and have 'workshop nights' but it is still good advice to have your own selection of drill bits, taps and dies, and files to take along with you. This applies equally to that ever increasing rarity, the College Workshop night.

Finally there are kits sold commercially nowadays and one of the better range of kits is by Polly Engineering but they are quite rightly not cheap. There are others but again, the advice of fellow model engineers in a club would stand you in good stead as not all kit manufacturers have the history or reputation you would like them to have.

Part Built Models

Buyer beware again... If the chassis is complete enough to run on air then insist on seeing it run on air, forwards and reverse. The running should be smooth and not too 'lumpy'. If not then walk away if on your own, but the club man you took with you may be able to reassure you as to whether any observed problems are fixable or not.

If the engine is presented to you as 'dismantled awaiting rebuild' then insist on proof that **it ever ran** for all the reasons stated below but personally I would walk away

If you are buying a selection of machined parts that just needs assembling to complete a full chassis then ask yourself, and maybe the vendor, why that has not been done...for the following reasons...

The machining of certain chassis components is critical and if fundamentals such as spacing of the wheels in the chassis, the 'quartering' of the wheels, crankpin drilling or the holes in the coupling rods and any number of other factors are not 'spot on' the wheels will not even go around - ever. To get them to go round may entail scrapping most of the bits you have bought. I did see the results of putting 200psi into a chassis like this 'just in case it was stuck a bit' and every rod on the thing was bent beyond repair. Equally the standard of machining could be so poor that everything is too 'sloppy' and you'll have a real 'clanker' that couldn't pull it's own weight. Again, when purchasing a part built chassis, take a willing club member who really 'knows the ropes' with you.

Conclusion

It is a minefield taking your first foray into owning and running a steam locomotive or traction engine.

I hope I haven't frightened you too much and have gone some way to enlightening you of some of the pitfalls. I also hope to have helped you take the first steps into our hobby, indeed with the purchase of your first locomotive or traction engine.

I also recognise that this article isn't by any means complete or even totally accurate, I will no doubt add, modify and delete the following text based on any feedback I receive.

Whatever I have said is my own opinion and not that of Kinver & WMSME. I speak as a builder of locomotives of some 30+ years and if I help someone avoid wasting a LOT of money on a potential piece of scrap then I would consider the hours thinking about and typing this out well spent.

There are just two secrets before you make your purchase.

Firstly is, if it is too good to be true then it probably is and secondly

JOIN A CLUB! - See you soon one day??