

Another MZ Trophy Project

End of document

Monday 30th April 2012

Well no sooner does one project wind down than another emerges into the light of day. This time it will be based around the beastie shown below:



Followers of my web site will be aware that I have had a few of these bikes in the past, the most recent being the sidecar project which went to a new home about 9 months ago. The attraction to me of this particular bike lies in the modifications made to the front engine mounting which can just about be seen in the picture. This will be described and illustrated in more detail later. However, if it works, it allows the use of any MZ TS or ETZ 250 motor. The one currently fitted is a Supa 5 and the first task will be to see if it runs and works with its modified mountings. Longer term I have a number of ideas I want to explore including:

Fitting the later telescopic forks

Fitting the spare ISDT Type petrol tank

Fitting an ETZ300 motor (if I can find one)

Fitting 18" wheels

Fitting a disk brake to the leading link forks

The bike itself dates from 1970 based on the VIN plate. I have no other paperwork so it will be another expensive trip to DVLA at some point to get it registered. However, that will only happen once it's become a viable project. It came with a brand new pipe and silencer both of which have



been removed for now. I have some scabby old exhaust bits which will be used during the experimental stage to preserve the shiny new bits.

Wednesday 2nd May 2012

Mostly a day of stripping and examining. First priority is to get the engine running to see if the new frame mounts actually work in practise. The engine turns over with no desperately worrying noises. The clutch plates are seized, a normal MZ problem. Worst case is taking off the clutch cover and stripping the clutch. Hopefully I can free it without doing this but it would do no harm to check the primary drive components. I have no long term interest in the engine as I already have a TS250/1 engine earmarked, but a friend would like it for his bike if it's reasonably sound. All the wiring has been removed from the bike so the first job was to rig up some electrics and this produced a catalogue of minor issues. Firstly the ignition switch was rusted solid. Getting it out was struggle and I had to strip out all the headlamp components to get at it. Not a bad thing as this has to be done to make a proper job of painting the shell anyway but not something I expected to do right now. Anyway a spare switch is now in place. Next issue was the lack of a battery platform, something I had failed to notice previously. It had been sawn off to allow the use of a K&N air cleaner as the standard TS250 manifold points the carb to the left unlike the ES manifold which is straight. Before I could make up and fit a new battery platform, I had to remove the TS250 manifold and fit the ES250



manifold. This also meant fitting an ES250 carb. These are 28mm instead of the 30mm used on the TS250, but more importantly have a smaller diameter spigot to match the ES250 manifold. This is where I hit a rather more difficult snag. The gearbox filler hole on the TS250 engine fouls the carb as the neck is on the opposite side to the ES250 crankcases.

It's not a lot, the carb is about 5 degrees from vertical so will probably run for now but something I will have to re-visit later. I now realise why the previous owner opted for the Supa 5 carb and manifold. However, I do not believe that an MZ engine will run properly with a K&N filter, they were designed to use a full air box.

Having cleared the way, I was able to fabricate a battery platform and include the bottom mount for the side panel which was a part of the original battery platform. Not a wonderful job but as it's all made of s/s oddments, at least it won't rust.



These tasks cleared the way to fit a coil and some wiring to make an ignition

circuit. Doing this identified that the original cables have all been chopped off rather than disconnected so I will almost certainly have to make up a new loom. Something else I did not really want to do but in the long term also not a bad thing as it will at least remove one of the major weaknesses of the older MZs, dodgy wiring and connectors. Ran out of time today but all the essentials are now in place and in theory the engine should run.

Friday 4th May 2012

I was a trifle optimistic over getting the engine to run. I had overlooked the fact that I had removed the nice new exhaust system as I wanted to keep that unused for now. I found an old silencer and



TS250 exhaust pipe and offered these up but found that the silencer fouled the footrest. Strange really as the one I had removed seemed to fit perfectly well. (looking at an early picture later I realise that there was no footrest fitted when I bought the bike). Anyway after making up a spacer bracket and putting a small dint in the silencer, I did get it to fit acceptably.

Now the engine should have run, but start it would not. The problem I fancy was that a lot of oil had been put into the engine either to free it up or preserve it and this was wetting the plugs. Part way through the process, the kick-starter stopped working. No option but to remove the primary drive cover and investigate. Not too upset really as I needed to strip the clutch to free up the plates anyway. I found nothing amiss and simply put everything back together again after which the kick-starter worked perfectly – one of life's mysteries but at least now the clutch worked as well. However, the engine still refused to start so I gave it a lot of kicks with the petrol off and the throttle wide open. This produced a big black oily puddle under the bike which finally coughed and spluttered into life emitting a huge cloud of blue smoke.

It then dawned on me that the bike had neither front nor rear brakes so a test ride was not on the cards until these minor details were attended to. A front brake cable was in the box of bits which came with the bike and



looked ok so I oiled it, removed the front wheel and fitted the cable (MZs have internal brake arms).

I also used my flap-wheel to de-rust the brake drum. Front end sorted. The issue at the back was a missing brake rod and there wasn't one in the spares box. Fortunately I managed to find something which fitted tolerably well; back brake sorted. Then I realised that the bike had no rear chain either. A search of both garages and the shed failed to find anything suitable so I gave up any idea of a test ride for today. Still quite a lot of progress.

Saturday 5th May 2012

Progress and setbacks today. I bought a new chain for the bike which did not take long to fit. However, I had to make up some rubbers pads to line the bottom run of the chain guides in the crankcase to stop the chain grinding the casing away. This was because I was too lazy to fit the proper chain rubbers at this time. Then I remembered that the seat needed a repair to the front hinge. The base had rusted badly in this area and the hinge was about to make a bid for freedom. I managed to partially remove the seat cover and slide a metal plate inside the seat pan. I then riveted the whole assembly so it was good and solid. The other hinge was also beginning to rust so I did the same to that as well. Finished it off with a good wire brushing and some aluminium paint. Eventually I will have the seat powder coated but this will keep it tidy for now. These actions cleared the way for a test ride round the garden which was when progress came to an abrupt halt. A clunking noise could clearly be heard. At first I thought it was something rubbing or binding in the cycle parts but the noise went when I changed gear. Eventually I realised it only happened in bottom gear and I think one of the gear wheels has lost a tooth. I suspect this is a result of brutal treatment trying to free the clutch.

So the final act today was to remove the engine from the frame ready for a complete strip down. Not an urgent problem as I already have a perfectly good engine already sitting under the bench which I always intended to fit. With the engine out I can give the lower part of the frame a good clean and touch up any rust patches. Strange how fate works; some time ago I bought a tin of Hammerite blue paint for one of my other bikes but it turned out to be much too pale. Out of interest, I dug it out and painted a small section on the ES250 and it's a pretty good match. Certainly good enough to make the bike presentable until I decide its long term future.

Monday 7th May 2012

First task today was to strip the engine as I was curious to see if my diagnosis was correct. Sure



enough first gear was minus a tooth which was lying in the bottom of the casing fortunately having done no obvious damage. The rest of the gearbox was in excellent condition and the remainder of the engine was satisfactory so it was rebuilt and now awaits a new home. With the engine out, I was able to clean up and wire brush the bottom of the frame and paint any rust spots. The centre stand and the side stand got the same treatment as both were red with rust. I also removed the rear brake lever and put in a spacer to move it a little further from

the frame to avoid it hitting the silencer under heavy braking. Three of the shock absorbers have

been removed for cleaning. Still not wonderful but a lot shinier than they were; the 4th one will have to wait.

Tuesday 8th May 2012

Quite a rewarding day today. I cleaned up the 4th shock absorber, not that you would notice really as the chrome is quite far gone but at least the rust has been dealt with. I then fitted my old TS250 engine into the frame. Mainly to see how easy it was and to make sure it fits ok. Little bit fiddly but I think its mainly a learning curve. It would be easier if the head was removed but I need to prove that it is possible to fit/remove this once the engine is in situ. On the ES250 engine short studs and special sleeved nuts are used to make it possible to remove head and barrel in situ. The exhaust fitted easily as well so happy with the minor mods I had to make for that. The engine fired up fairly easily once I had connected the electrics so I fitted the chain and some old gaiters I found in the shed.

I spent the rest of the afternoon making up a proper main wiring harness to replace the minimalist system I have been using for testing. Always takes a long time to do wiring, or it does me anyway, but all the bits completed have been tested and work properly. Need some more sleeving for the rear section and to make up a harness for the horn/dipswitch/flasher. Doubtless I will also have to fiddle with the stop light switch in the back wheel. Quite a good day really. On a different tack, I was given an ETZ 301 yesterday and I am now wondering if its engine would fit in the frame; might be fun to try. The back wheel assembly would also provide a speedo drive. (NB 301 too good to break and now passed on to a new owner)

Wednesday 9th May 2012

I spent a large part of today attending the funeral of a fellow vintage motorcyclist in Salisbury so not much workshop time. However, I did manage to find a usable dipswitch and made up the wiring harness to suit. On the way home from the funeral I popped into my local motorcycle shop and managed to get the correct headlight bulb so we now have a full wiring harness and the headlamp is back on the bike with its front cover. I have been using a 12v battery for the electrical testing up to now as this was the only spare on the shelf. I need to borrow a 6v battery from one of my other bikes before connecting up the regulator and dynamo to see if we have a functional charging system.

Whilst pondering the carb with its 5 degree lean a possible solution occurred to me. I could saw off the existing mounting stub on the manifold and re-profile the end circular, then use a piece of hose to connect manifold to carb. This would bring the carb closer to the engine sufficiently to clear the oil filler neck. Great theory but I need to check what effect it would have on engine performance if the intake track was shortened a little.

Friday 11th May 2012

Quite a lot of progress today. I managed to borrow a 6v battery from a friend and connected up the charging system wiring. With the engine running, the charge light went out which is a good sign. I put a voltmeter in circuit and this confirmed that we had a working dynamo. Flushed with success I decided to put my cunning plan regarding the inlet manifold into operation. After an hours sawing and filing we had a modified manifold that uses rubber hose to connect the carb much like modern

Japanese bikes and even my BMW. The picture show sit in place with a Mikuni carb being used for now. It just clears the oil filler neck with the carb vertical. In practise I reckon I have shortened the inlet track by less than 10mm so I doubt this is going to affect the performance over much. The



engine starts and runs fine on the bench. Tomorrow we will try a road test if the promised sunny weather does actually turn up. I visited my local powder coating firm today and established that they have some pale cream paint available which would be a good match for the headlamp shell and the tank. He also has some blue paint which may be a good match for the rest of the bike but I need to take a sample down to check this out. I am not in any hurry to do the blue paint as this has an acceptable 'patina' and no severe rusting and I have the blue touch up paint anyway. The headlamp shell is particularly rust and badly needs shot blasting and painting. There are no real issues with this as it is dent free, The tank on the other hand, as well as being quite rusty, has a couple of small dings and I fancy there is a bigger one which has been filled. It has to be shot blasted regardless and I think it may be possible to get filler which will stand the heat of the powder coating oven; something to be checked. The tank is worth persevering with as it is pristine inside, no trace of rust or corrosion at all – remarkable.

Saturday 12th May 2012

Test ride round the garden identified two problems, The first was a blocked fuel tap which was quickly rectified. The second problem only came to light when I was parking the bike; on full right lock, the engine revs really hard. Other than that, all seemed to be well. A search in my spare cables box found a longer throttle cable which fixed that problem. I also fitted a centre stand spring as having to hook up the stand with a bungee was beginning to annoy me. The back wheel got a

makeover, rim polished, spokes de-rusted and painted silver and the brake light switch in the hub adjusted so I now have a brake light. This made the front wheel look scruffy so it got the same treatment except that I still have to paint the spokes. If I was of a mind to take it for MoT I reckon it would now pass.

Tuesday 15th May 2012

I was perhaps too optimistic about the condition of the bike. Both tyres had good profile tyres with stacks of tread so other than checking the pressure, I did not pay them too much attention. I took the bike out for a ride round my usual test route which involves a couple of roundabouts. In a straight line it was fine but at the first roundabout something did not feel right at the front end and by the second roundabout all I wanted to do was get back home. The steering had a mind of its own and it was uncomfortable not to say scary to ride. Back in the garage, I checked the tyre pressure again, little bit low so topped it up. I also checked the forks for play in the swinging arm bushes, wheel bearings and headstock adjustment; nothing obvious wrong. The forks do have a tendency to self-centre and I fancy there is a slight notchiness at the straight ahead position but nothing that would I would expect to cause steering wander negotiating a roundabout. I was about to strip the whole front end when I thought to check the front tyre again and the problem was revealed.

The tyre was a really heavy duty item made in Russia and it was nothing like central on the rim. I tried deflating, applying lots of soap around the bead and then re-inflating to 60psi but the tyre totally refused to centralise itself on the rim. In the end I had to remove it, which proved a real battle, and replace it with an old Pneumant I had lying around the shed. A test ride after the tyre swap established that the steering was back to normal for an ES250 Trophy. Whilst looking for the tyre levers, I chanced upon a tin of cellulose paint in a cupboard and when opened it proved to be a cream colour quite similar to the headlamp and tank on the Trophy, cannot remember what it was originally bought for but it has enabled me to rub down and touch up the worst of the rust patches on these items so it looks a fair bit tidier. This inspired me to put in an hour on the lathe to make up some plastic knobs to fasten the side panels. Next items on the agenda are a speedo and a rear view mirror.

Wednesday 16th May 2012

I spent the greater part of today fitting the rebuilt engine from the ES250 into a friend's Supa5 so that he would have a functioning 5 speed gearbox again. His old engine sits under the bench until we can source a decent set of gearbox internals. Instead of tackling the speedo and rear view mirror tasks I sidetracked into a disk front brake conversion. This is something I had long thought about for an ES250 as the standard front brake is not up to much even when in good condition and mine feels particularly wooden. I had already collected a spare Trophy front swinging arm, I also had a 16" disk braked wheel and a really good Brembo calliper and master cylinder so all the bits were in stock. All I had to do was make it all fit. First task was to fit the wheel to the s/arm and play around with spacers so that it was central. At the moment the spacers are a collection of assorted bits of tube and washers, but they will suffice for now and give me the measurements to make a proper set.

Next step was to fit the calliper on the disk and see how it lined up on the s/arm. I decided to fit it below so that the torque reaction is pushing the calliper into the arm meaning that any fixing bolts or welding is sharing the stress with the s/arm.

As luck would have it, the back of the calliper locating tags were just about in line with the back of the s/arm, so all that would be needed was a suitably shaped plate. I cut out the shape in cardboard initially and trimmed until I had a good fit round the calliper and around the s/arm. I then used the cardboard as template to cut out a piece of 3/16" plastic sheet which was stiff enough for a trial assembly and also soft enough to be cut and shaped easily. Eventually, I was able to offer up the whole assembly and hold it in place with mole grips. Everything seemed fine so I then drilled holes through the s/arm and the calliper support plate to provide a secure fixing for the welding stage. My plastic template was now the correct shape and also had the various mounting holes correctly positioned. Final construction job was use the plastic template to make a bracket in 5mm mild steel plate. Something a little thicker would have been ideal but 5mm was all I had and I think it will be thick enough.

I had to do several test assemblies with some filing on the bracket in between to get a really good fit, then I found that the calliper was not sitting centrally on the disk. This was something I had not noticed earlier and I think the plastic template may have been distorting slightly to compensate. Anyway, it was not a major issue, I made up a 1.5mm plate to space the bracket out and with this in place, the calliper is central and the wheel spins easily between the pads.



Thursday 17th May 2012

I gave some thought to a rear view mirror today. The layout of the handlebars does not allow much scope for conventional rear view mirrors and the slot in the handlebar for the throttle slider makes a normal bar end mirror impractical. In the end I borrowed an MZ style bar end mirror from one of my bikes which is on SORN and fitted that. Turns out that the glass is cracked; I don't remember that as an issue when I took the bike off the road. However, it will do for now and a new glass will have to be sourced. Still pondering over the speedo issue; I do have an ETZ301 which would provide the necessary parts but I am reluctant to strip the bike just yet as it's taxed and I would like to do a few miles on it first. I have a bicycle speedo sitting on the shelf so may well use that for now.

I returned to my disk brake fabrication this evening to tidy it up a bit and incorporate a couple of improvements. I am a bit concerned about possible distortion if I do have the plate welded in position. I have now added a couple more bolts to the top and a stud at the bottom which spreads the load between the body of the calliper and the frame tube. I am going to consult some of my engineering friends and am rather hoping that they will agree that 5 bolts are sufficient location without the need to weld.



Monday 28th May 2012

No progress on the project for the last week or so as we have been enjoying a week's motorcycling holiday based near Weymouth. Glorious weather, good routes, fantastic scenery and great friends to ride with; what more could anyone ask. Then of course I came home to a jungle that used to be my fairly tidy garden so that took a couple of days to put right.

Anyway one step forward and one big step backwards today. I managed to get some hi-tensile allen bolts and nuts to bolt up the calliper mount and I also stripped down and painted the bits. Next step was to strip out the old swinging arm to put in my modified one. Normally a simple job but this time I hit major snag. The pin is corroded into the swinging arm itself. I half expected it to be corroded into the aluminium pivot block as steel and alloy don't mix too well. Not sure why this has happened, there is plenty of grease but obviously not in the right place. I have tried heating it with my butane torch to the point where all the paint was blistering but absolutely no movement can be detected. Decided to stop before I did anything too drastic and think about the problem. Two options occur at present, the most drastic is to angle grind the arm and the pin on both sides then push the remainder of the pin out of the aluminium block. This of course will destroy both pin and swinging arm. The

other is to strip out the whole fork assembly and take it to someone with a press. This worries me more in some ways. The last time I had to do something similar with a seized rear swinging arm pivot pin, the force needed actually crushed the frame as well.

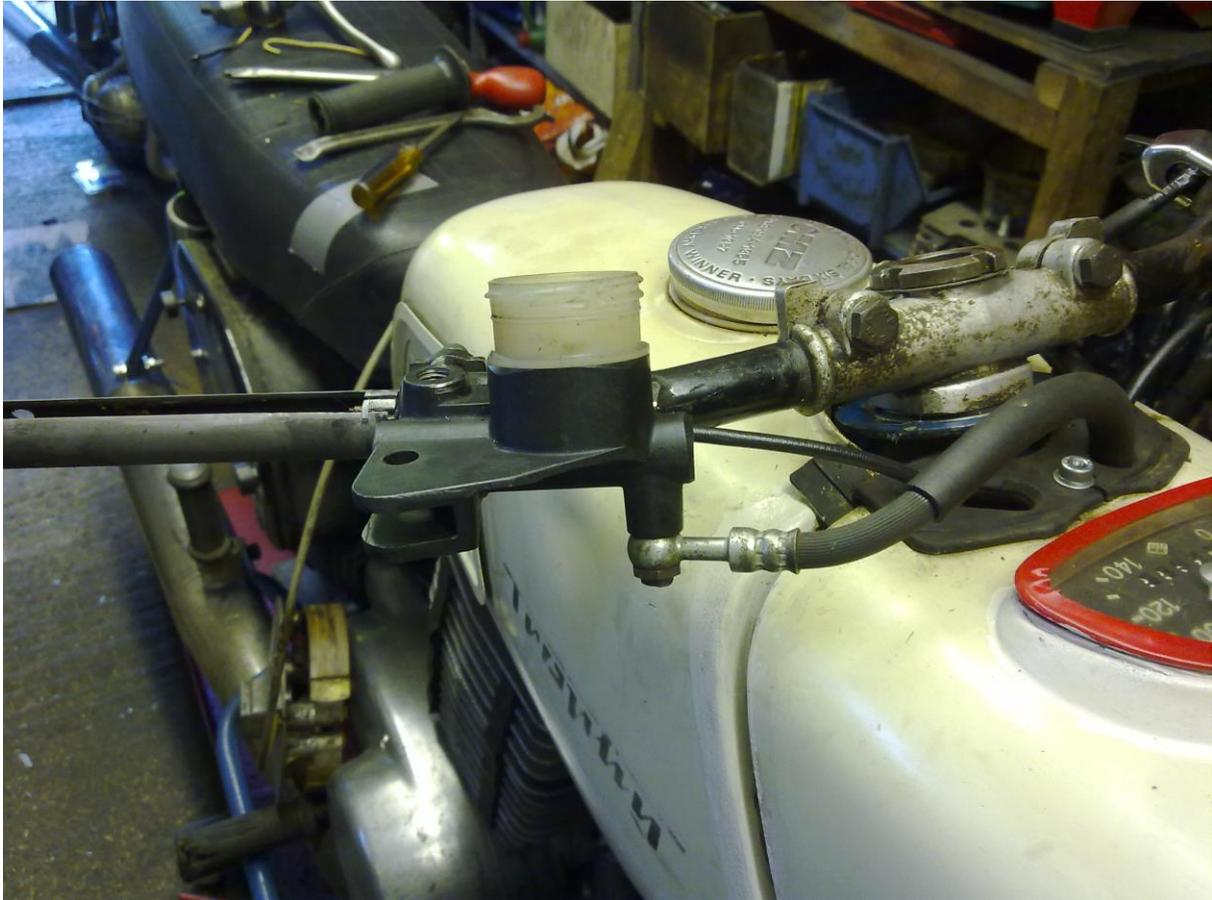
Tuesday 29th May 2012

Well I got round the problem initially by removing the whole front fork assembly and building up a complete new fork using a mixture of old parts I found in the shed plus of course the modified swinging arm. Looks a bit scruffy and there are some issues which means that it cannot be a permanent solution but at least I now have the calliper mounting and the disk brake front wheel in place and everything seems to line up nicely.

I did manage to dismantle the original fork without resorting to the angle grinder though the spindle needed some cleaning up after the beating it took to get it out. In due course I will rebuild the whole front end with the proper bits but what's in place now is adequate to progress to the next stage connecting the master cylinder to the calliper.



As you can see my hope that I could use the existing handlebar was optimistic. It's not long enough and the bend is too flat so that the pipework hits the tank unless tipped up at a silly angle. The existing pipework is not long enough even with the low flat bars so I will have to do some research into hydraulic brake fittings to see what is available. One challenge will be where to run the pipework. The normal method on MZs won't work due to the fixed headlamp assembly. Not sure the arrangement shown above is suitable either. I am tempted to try running it down the centre of the steering stem but first I need to find a suitable pair of handlebars. Good fun but this stage could be tougher than the initial fabrication mainly because I don't have a source of suitable bits to experiment with and I am reluctant to buy anything until I am sure of what I want/need.



Wednesday 30th May 2012

Some good progress to day. I visited my local motorcycle superstore and they have a very comprehensive stock of Goodridge hoses and fittings all available with the same thread form as my master cylinder and calliper. Armed with this knowledge I went back and studied the options. Inspiration then struck when I remembered an old BMW /6 master cylinder that was in my spares box. These bikes used a remote master cylinder mounted under the tank operated by a cable from the handlebar lever. Quite why they went this route is beyond me but if it could be made to fit, it would be ideal for the MZ where a handlebar mounted master cylinder was beginning to look difficult as well as unsightly. Anyway, after some poking and prying, there does seem to be room within the headlamp nacelle with a reasonable run for the cable and the hydraulic pipe. You can see it in position in the two pictures below:



At the handlebar end is just the normal front brake lever and cable which I have adapted from the original BMW cable. No obvious clues from the handlebars about the disk brake. I have ordered a set of Goodridge connectors and pipe which will be here tomorrow. If I get the cable runs correct, it should be possible to remove and replace without needing to disconnect any of the hydraulic connections. I will need to make up a rubber mounted mounting for the

master cylinder. There is also some electrical work to take advantage of the stop light switch and the low fluid warning indicator built into the cap of the master cylinder. As it's out of sight, I fancy this could be important.

There is only one obvious down side to this arrangement; the master cylinder prevents the speedo cable being connected. However, my speedo does not work and I have no drive mechanism anyway so this neatly pushes me into the much cheaper and easier option of using a bicycle electronic type. My plan is to fabricate something which will fill the hole presently occupied by the speedo which will hold the bicycle speedo and a set of warning lights.



Thursday 31st May 2012

My supplier has let me down over the Goodridge brake components, one part is out of stock and will not be available for at least a week. Therefore the completion of the new brake setup will have to wait. However, it did give me a chance to fabricate a mounting plate for the bicycle speedo transmitter and a plate to cover the speedo hole, both items are shown below.



The green warning light is for Neutral and the Red light covers both the charge light and the brake warning light should the fluid level drop. As far as I can see there is no reason not to combine the functions. Obviously if the light does come on whilst running, I will not know if I have a charging problem or a brake fluid problem. However, in either case I need to stop and investigate. The yellow LED just in front of the speedo is the main beam warning light. At

some point I will acquire some blue LEDs and swap it over – not entirely sure I can see this from the saddle so it may have to be moved forward a bit. There is also space to add LEDs for flasher repeaters should I ever get round to fitting indicators. I have also included the wiring for the front brake light switch in the master cylinder. One thing I have yet to resolve is how to illuminate the speedo for night time use. Quite a productive day really except that my newly fitted front tyre was flat so. Blew it up hard and will check it again tomorrow.



Sunday 3rd June 2012

The front tyre clearly had a slow puncture as it repeatedly went flat over a 24hr period so today I had a look. My initial thought was that I had pinched the tube but putting some air in the tube once removed showed no signs of any leak. I blew it up like a balloon and still no obvious leak though of concern was the fact that one part enlarged very much more than the remainder. When I put the tube in water I did find a tiny leak, not a pinch or even a puncture, more like a weakness in the rubber. Anyway I took it back to the shop and they agreed that it was faulty so I now have a replacement tube installed which has stayed up all day. I will check it again tomorrow and hope all is well this time. While I was at the garage I bought a tube of Solvol Autosol and gave the front and rear rims a good clean/polish. They look pretty good now. I am getting quite impatient waiting for the brake pipe connector to arrive as I am anxious to find out if my disk conversion works.

Saturday 9th June 2012

The remaining part of the Goodridge brake cable kit arrived on Friday morning and as it was a wet day my conscience was clear to settle down and install it. Assembly was pretty straightforward and I



made up a bracket to rubber mount the master cylinder. As usual, I had trouble getting the hydraulics bled properly but in the end it came together. Pushing it round the garage, the brake seemed to work well so I decided to give it a test ride round the garden. First hard application and ping went the new nipple I had

soldered on the cable so back to the garage.

Today, I soldered on a replacement nipple making sure it was really firmly in place this time and reassembled everything. A test ride down the road was disappointing; the brake seemed to work but then faded to almost nothing. I spent some time studying the BMW workshop manual about adjusting the master cylinder but frankly it made little sense. However, playing around with the free play on the cable did improve matters somewhat but nothing like what I had hoped for. Then I noticed spots of oil on the garage floor!

At first I had thought they were from the engine but it became obvious that it was actually brake fluid, not engine oil. I double checked the tightness of all the connections (none seemed loose) and cleaned up the mess. The brake seemed sharper but drips quickly re-appeared and the source was identified as the

connector into the master cylinder body. Thinking that it was bottoming, I put a second copper washer in place and tightened very firmly. No leaks at rest, but as soon as the brake was operated, fluid seeped out of the joint. I guess this is the cause of the poor braking performance on the road as the leak is



causing a pressure drop. I had already noted that the brake worked best if you pumped rather than pulled hard. Anyway for the moment I am stumped. The whole assembly will have to be dismantled for examination which is going to be really messy.

Monday 11th June 2012

Hopefully my problem with the hydraulics is resolved. The fault was lack of understanding by the operator, not the equipment. The top adapter is supposed to be a metal-metal fit. Putting in the copper washer actually prevented this and putting in the second copper washer just made matters worse. Now reassembled with no copper washers and everything seems to be fine – in the garage anyway. The rain is absolutely hissing down at present so a road test will have to wait. Did put the delay to good use and welded an extra piece on the side stand so that it holds the bike more vertical when in use. Also a good opportunity to tidy the garage which was looking like a tip.

Tuesday 12th June 2012

Weather much better today and a further test ride confirmed that the front brake is now working properly. Not quite as sharp as I would have liked and it does seem to need more pressure on the lever than I was expecting. I think possibly the pads have picked up some brake fluid from the earlier problems and need to burn in again. I am also a bit wary about putting too much pressure on the brake cable after the nipple pulled off. Time to get a proper cable made up I fancy. Nevertheless, the front brake is now working well enough to be regarded as a success. Something else I noticed today was a steering wobble at medium speeds. This was similar to but much less severe than I experienced with the sidecar project I previously built. However, I don't remember it happening with the two earlier Trophies I have restored. In the case of the sidecar outfit, I had to fit steering damper but the wobble in this case is not that bad, just annoying. I will check over the front end to see if there is any obvious cause. I do know that the head bearings are a little slacker than I would like but the stem top thread is damaged so it's not really possible to tighten the bearings any more at the moment. Since the MZ original steering damper is effectively a device for putting the steering head under more pressure, slack bearings may well be the cause of my wobble. I have another stem with good threads so if nothing else emerges during my checks, I will just have to strip and rebuild the whole front end again.



Friday 15th June 2012

Found nothing obvious wrong with the front end of the Trophy apart from the slack in the head bearings. I took the bike for a 6 mile ride today to visit my friend Mick who is an ace welder and metal fabricator. He had a look at the front mudguard and reckons that he can do something worthwhile with it. Plan is to take it back to him next week some time when we both have a free day. On the road, the steering wobble seems to be most evident around 15-25mph. Not apparent below that range and fades away to practically nothing as you get beyond 35mph. The front brake is

getting better though to some extent I think it's me having more confidence in it. Because the forks don't dive like teles, you do not get the same feeling under mild braking. I had to stop a bit sharpish for some traffic lights and it behaved impeccably. The wind was quite strong today and it was noticeable how much the bike was effected ; I guess there is quite a lot of panel-work

Back home, I stripped down the front end and put in the other steering stem assembly. I was also able to clean up the threads on the s/arm spindle which had suffered during the process of hammering out the seized spindle. Used a friends thread restorer file. Neat bit of kit and the spindle nuts now fit properly and you do not need Goliath's strength to do them up. Everything else went back quite easily though I have left the mudguard off ready to go to Mick's.

Looking at the front end minus the front mudguard got me to thinking about how much better it would look with something smaller. The original is really a big ugly thing in truth. One option I am contemplating is making up a guard assembly that bolts to the swinging arm and moves with it and the wheel. This arrangement would allow use of a smaller guard which follows the contour of the tyre. Tomorrow I will have a hunt round to see if I can find anything suitable to experiment with.

Saturday 16th June 2012



Flaming June continues to be wet and cold so no twinges of conscience about working in the garage instead of gardening. The front mudguard has now been tweaked by friend Mick and though not perfect is a lot better than before and has lost that fat dumpy look.

Front end now reassembled and I took the bike for a short test run between showers. Still a slight amount of wobble but nothing to

worry about and the bike is very much nicer to ride. If its warmer and drier tomorrow, I will risk a longer journey. I did experiment with fabricating a front mudguard which moves with the swinging arm. In fact a TS250 rear mudguard suitably cut down and shaped would do the job nicely. The difficult part is making a front mount that cannot pivot and drop the mudguard into the tyre. Could not think of a suitable solution and now that the



proper mudguard is repaired and looking good, there is no immediate requirement, However, I will keep the idea in mind as I do think it would look neater done this way.

Whilst looking for mudguard bits I found an old rear carrier which with some modifications (like removing about 90% of it with the angle grinder) now graces the rear end of the bike. It fits into the rear frame tubes and being held with just a couple of self-tappers, is easy to remove. Unlike the TS range, this fitting arrangement does not block access to the toolbox. Looks hideous at present but a coat of paint will sort that out. I am contemplating fitting the Powerdynamo system which I have on the shelf. Would at least enable me to return the 6v battery I borrowed from another friend.

Sunday 17th June 2012

Took the bike for a 10 mile ride today. The slight wobble was still present at about 30mph but in practise I soon forgot about it and by the time I got back I did not notice it at all. Reminds me of poor wheel balance in a car and I think I will get the front wheel balance checked. In general everything went well though I was riding quite gently as befits a newly rebuilt bike.

I did notice that some vibration was apparent as you wound it up through the gears and on the long straight back to my house, I took the bike up to an indicated 64mph. Vibration was very noticeable from about 55mph onwards and got worse as the speed (and engine revs) rose. This was disappointing as one of the nice features of MZs is their smoothness as perceived by the rider. Most of the vibes were coming through the tank which was starting to drum. The engine itself is not in the best condition but I don't remember it being that bad when it was in my TS250. Nor do I remember ES250s being vibratory like this. The only way to establish if it's the experimental engine mounts not being up to the job is to convert it back to standard bottom mounts and try it out. Not a difficult job if you have the bits. A search of the garage produced the correct bottom bracket but only one of the rubber mounts, None on ebay so I am going to have search farther afield. In the interim, I will get the bike up on the ramp and make sure that everything is lined up properly and that the engine is not fouling the frame somewhere.

Monday 18th June 2012

All the checks failed to find anything obvious wrong with the engine's mountings. I therefore removed the new front mount and after a bit of a fiddle, managed to install the original mounting arrangement. The bottom bracket only fits on one side as the Supa 5 engine lacks the necessary mounting lug on the nearside (one of the main reasons why the previous owner decided to design the new style mounting. I jammed some hard rubber blocks against the frame to stop the unsecured bracket from flapping around and rattling. Engine started and there was no tank drumming or other noticeable vibration for the rider. I then secured the exhaust system back to the engine and still no vibes. Took the bike for a test ride and it was much nicer to ride, running up to 50 in 4th very nicely, something it certainly would not do on yesterday's test ride. Finally I connected the new engine mounts back up with the old style one still in place. Immediately, the vibes could be felt through the tank. So it looks as though the new design of engine mount is not going to do the job. Great pity as it was a wonderfully elegant idea. I have passed my findings back to the designer to see if he can think of anything else to try.

Friday 22nd June 2012

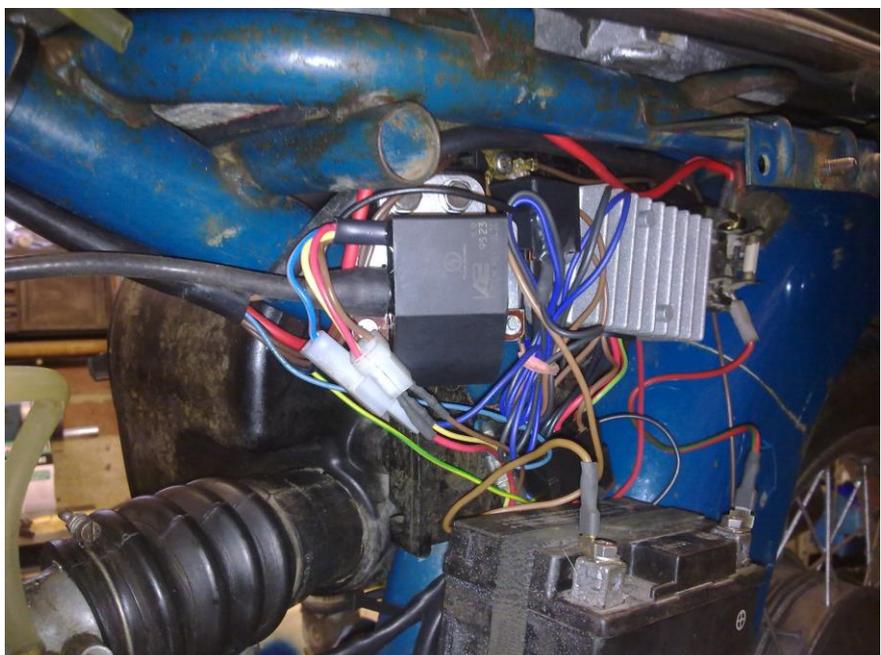
No new ideas forthcoming about the mounts so I have reluctantly ordered a second silent block mount and some new chain rubbers from Phil Speakman's new venture The MZ Shop. Another



TS250 motor has also been fitted over the past couple of days, This one has been used in an ETS250 frame in the past which uses the same type of engine mounts as the ES250. This engine has an extra lug grafted on the near side crankcase to connect up to the bottom engine plate. Cannot complete the engine installation until the second rubber mount and the chain guides arrive so whilst waiting I decided to fit the

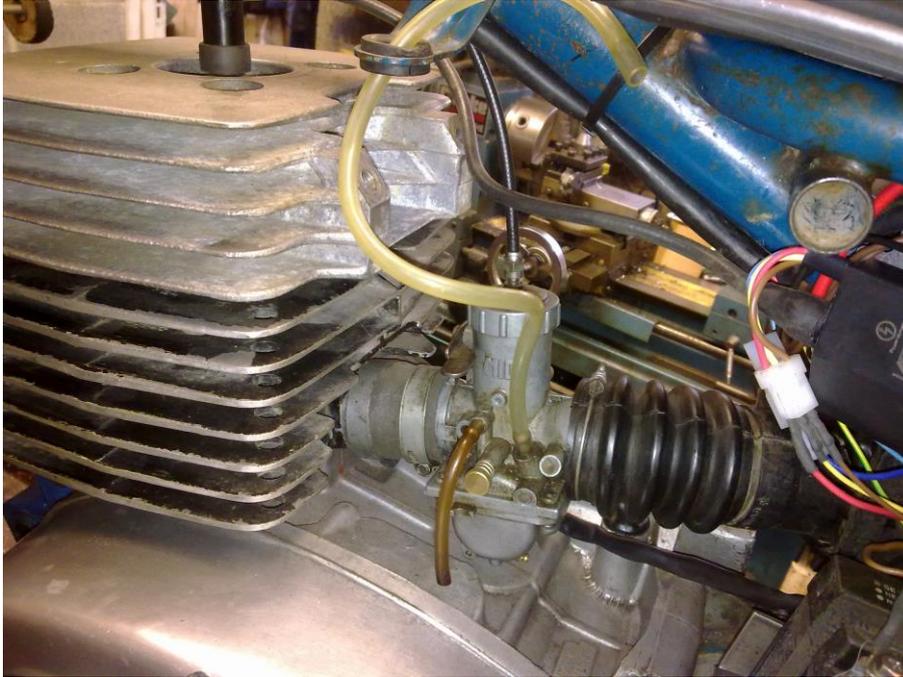
Powerdynamo kit. The first pictures show the alternator rotor and you can also see the bottom engine bracket and one of the silent block rubber mounts. This one differs from the other two in that the ignition trigger is inside the rotor, whereas the older style have an external pickup. This is much neater and also appears to have some adjustment for the timing, though quite how you can actually measure the timing is not yet clear to me.

The second picture shows the ignition coil, regulator and the relay to stop the engine. As it's basically a self energising flywheel magneto (albeit with electronic trigger rather than points), the ignition is normally live all the time. They have included an earth wire to short out the low tension side and provide a number of options for wiring this in circuit. If you normally use a battery, the most elegant solution is to use the supplied relay energised when the ignition is switched on (I used the live wire that originally went to the coil). If the battery goes flat then disconnecting one wire restores sparks or you can fit a switch to do the same thing. The beauty of this system is that you can run it entirely without a battery and it will provide full power for the lights, indicators etc from just above tickover with the



regulator somehow stopping all the bulbs from blowing. I find it ideal for my purposes as with a large number of bikes, they can get left for long periods and its annoying to find the one you want to ride has a flat battery. With this system it's never a problem.

One of the other features of the new engine is the barrel and piston. They were reputedly race tuned items which were given to me by a friend some time ago. We are not sure who did the work, but the ports have been opened up and polished, the inlet manifold is totally different and is straight



rather than curved which is ideal in this application. The bottom of the barrel has been milled down as was the head that came with it. In fact when first assembled, the piston hit the cylinder head. I have used a standard head for now which seems to give adequate clearance but I must remember to check the squish band. I cannot remember what changes have been made to the piston, but

both it and the barrel were in excellent condition. I have used the 28mm Mikuni carb for now and the engine did start and run very briefly this afternoon. A proper test will have to wait until the engine is correctly mounted and the tank is replaced. It will be interesting to see if the engine does perform well and is flexible enough for road use. Could be a flyer or a damp squib; if the latter, I will simply use a standard barrel & head.

Tuesday 26th June 2012

The silentblock mounting and rubber chain guides arrived yesterday and I spent the morning fitting them. The chain guides were absolute pigs to fit. For some reason, the TS250 crankcases fit very snugly round the swinging arm spindle and make it extremely difficult to fit the front end of the chain guide, both top and bottom. It was a question of blood sweat and tears but eventually I did get them in place. I did have to trim the lip from the inside edge of both guides to create a little more space but this will not affect them in use. The engine mounting was thankfully easy. The exhaust system when re-fitted was even more snug against the rh footrest even with the existing dent increased a tad. Eventually I found that fitting a washer under the lh bracket of the footrest tilted it away from the silencer. In fact I think that this trick would create enough clearance to be able to fit the new silencer without denting it at all. It was then just a question of fitting the tank. I have found out the hard way that you need to be careful not to trap the clutch or throttle cable. Trapping the former limits the steering movement to the left and the latter makes the engine revs its head of when the steering is turned to the right.

A test ride round the block revealed two minor problems, the speedo had stopped working and the brake light was on all the time. The Powerdynamo system worked perfectly and we now have a decent horn and good lights. Neither the speedo nor the brake light responded to treatment so the latter was disconnected for now (I still have a front brake light switch thanks to the BMW master cylinder), and the former was ignored for now. A longer test ride of 10 miles or so was done without further incident. I detected no undue vibes even when revving the engine hard through the gears. In fact this engine seems to thrive on revs as befits its racing pedigree. It is a bit pedestrian at low revs but certainly no worse than an ETZ motor. I think it's a bit strangled by the 28mm carb as you need to wind it open a lot to get it moving, more so than I am used to anyway. Thinking back, I fancy I found the same thing when I tried this carb on Supa 5 some while ago. I checked the plug after the run and it was a nice shade of chocolate so the mixture must be about right. I have assembled a 30mm BVF carb to try out on the motor to see how it performs with that. I will however, need to buy a new bicycle speedo to give me some instrumental measure of performance as well as gut feeling.

Friday 29th June 2012

New bicycle speedo duly purchased and fitted so we now have a reasonably accurate measure of speed. Curiously this one only provides calibration by wheel diameter in inches. All the previous ones I have used required a rolling diameter in mm which is a much more precise measure. I opted for 22" based on a 16" rim with a 3" tyre. Seems to be about right but I will try to fit my GPS to the bike some time to check it out.

Took the bike to my VMCC club meeting last night. Either a brave or a foolish decision as it required a return home in the dark. In fact the electrics all worked fine and even the headlamp beam seems to be in adjustment. Beam setting on these bikes is not quite as easy as on a normal bike with headlight shrouds. A couple of things emerged from the run. Firstly I ran onto reserve which was a bit worrying as I had not done many miles on the gallon I put in. The engine appears to be running too rich to me. Smoking more than I would expect and it felt lumpy and woolly. I meant to check the plug this morning but forgot. However, I did remove the air cleaner and it did feel a lot happier when I took it out later. I will run without the air cleaner for a couple of days and then check the plug again. Strangely enough, my last ES250 was also fussy about running with an air cleaner and I finally junked it on that one as well. I still have a droning noise mostly on the overrun and I cannot detect yet where it's coming from. I think it might be the new chain rubbers as they were very tight and may just be bedding in. If it's in the engine, I am not overly concerned as I intend to give it a complete makeover at some stage. There was a rattle from the rear chain which was sorted by adjustment and I did the alignment at the same time. In fact it was very close to correct anyway.

The steering wobble was still present and with the speedo fitted, I now know it starts at 23mph and is gone by 30mph. Today I tried a couple of experiments; firstly I fitted the original drum brake front wheel and the test ride showed absolutely no low speed wobble, I had left the disk brake calliper in place in case it was the imbalance of weight on one side causing the problem. Since there was no wobble this is clearly not a factor. What it did remind me however was how much better the disk brake setup is and it's worth getting the issues sorted; I do not want to go back to the weedy drum brake.

Next I removed and refitted the tyre on the disk brake wheel but moved it round about a third of diameter. This time the wobble was still present but much less marked and hardly a problem at all.

Finally I put some lead piping on the lh side of the swinging arm to counterbalance the weight of the calliper on the rh leg. This did not get rid of the wobble, but it did move the point at which it started to around 26mph. Next thing to try is balancing the wheel itself. Not sure yet if this is something I can do myself or if I need to find a friendly garage.

Perhaps the other thing of note is that the bike is really comfortable and smooth to ride despite the various niggles. I will get to the bottom of them as I think the Trophy is going to be a long term favourite.

Monday 16th July 2012

I have been using the Trophy quite a lot including a 50 mile tour round the lanes with some friends, shopping trips and a visit to the MZRC South Coast Camp at Tilshead last Saturday. Plus of course innumerable trips round my test route trying out various things. The front end wobble is still there despite my attempts to balance the wheel. To be honest I barely notice it now and am inclined to leave it be until funds allow a new front tyre as I am sure the Barum currently fitted though new, is the culprit. It did grind to a halt on the lanes run but this turned out to be an over tight rear brake which got hot enough to melt the grease out of the wheel bearings. Still stripping it down to check and re-grease did also allow me to sort out the rear brake light switch and grease the chain.

The bike was reluctant to pull top gear and it has always had a harsh metallic knocking noise which I could not really trace. I did try fitting the correct 30mm BVF carb but a test run showed that it did not help top gear pulling and was impossible to set up for tickover. Not surprisingly, it did not get rid of the rattling noise either. I checked the squish band and this seemed to be way below the minimum 0.9mm so I set about removing the head. As I feared, this was not immediately possible as the head fouled the top frame before clearing the studs. To get it off, I had to remove all four studs. However, once on the bench I was able to hacksaw of the projections at the rear for the top engine mount required when in a TS frame. In the Trophy, these are not needed and once removed the head can be removed and replaced with the studs in place. Having solved that problem, I set the squish clearance to 1.00mm and reassembled. Of course it made no difference to the harsh rattle and a road test showed no improvement in top gear pulling.

Overnight I reached the conclusion that the racing barrel & piston had to be replaced if only to eliminate it as the source of the rattle. I thought it would be a long job, but in fact it only took a couple of hours. I used a worn but reasonably sound (only a slight wear ridge) barrel & piston from another motor which had been running ok but lost 3rd gear. To get the barrel off with the engine in situ I had to remove the studs again. In fact it is easier to replace the piston and barrel with the studs out of the way and everything went back together without drama. While I was at it, I put the Mikuni carb back on as though a bit puny at 28mm, it does at least provide a reliable tickover and clean carburetion across the range. I may try the 30mm BVF again later once everything else is sorted. Anyway, the engine started first kick and sounded much quieter mechanically. I checked over the racing barrel & piston and though both looked in top condition and on standard bore, there was a lot of play with the piston at tdc so I wonder if they bore them very slack for racing.

A ride round my test route confirmed it was much quieter and it certainly pulled better from lower revs. Top could be used from not much over 30mph whereas with the racing barrel, it would not pull top below the low 40s and rather higher if it was uphill or a head wind. It went up my test hill pulling

an easy 50 in top gear. With the racing barrel it needed 4th gear and a wide throttle to do the same. Overall it is a much nicer bike to ride.

Sunday 12th August 2012

Whilst I have continued to tinker with the bike, life has been too busy to allow time or enthusiasm for writing up the diary for some time. This is a catch up exercise and the things described may not be in chronological order. The tyres were an issue, I wanted a better tyre to try on the front to establish and hopefully eliminate the wobble and the rear tyre was barely legal. Searching the internet identified a distinct lack of choice of 16" tyres, particularly a 3.00" size for the front. There were plenty of 3.25" and 3.5" tyres suitable for the back.

I finally settled for a pair of Michelin M45 tyres, 80/80x16 front and 100/90x16 rear. These turned out to be something of a mistake, they were really nowhere near the sizes I was expecting, 80mm should have been just over 3" but on the wheel it looked tiny and the 80% profile meant it presented a very low rolling diameter, nothing like a conventional 3" tyre. The 100/90 rear was a little better proportioned but again nothing like a conventional 3.25" tyre for rolling diameter. Though it looked a tad ridiculous, on the road it actually worked quite well giving very sharp cornering and confident road holding compared to the old tyres. During this period a friend and I swapped bikes, his ES250 had 3.25" front and 3.5" rear tyres. Not only did the handling feel slower and ponderous but the gearing was much higher due to the greater rolling diameter. My bike would pull top gear much better even though it was running a 19t sprocket against the other bike's 18t.

I persevered with Michelin tyres for a week or so but decided it looked silly with the skinny front tyre and I was concerned that the low profile could lead to a damaged rim. The compromise in the end was to put the 100/90 tyre on the front and re-fit an old 3.25" tyre to the rear. Now looks ok and still pulls top gear easily but not quite so frenetically. When I get some spare cash I will probably try a 110/90 M45 as I do like the cornering and road holding of these tyres.

Apart from that the bike is now a regular part of the fleet getting ridden frequently as the rear carrier and bag are jolly useful for shopping trips. With the 12v electrics even night time trips are fine. A couple of things are under consideration: Firstly the home made speedo assembly needs a re-design to move the speedo itself forward (so that it does not get clouded by the handlebars) and angle it backwards as the display tends to be in shadow too much. The main beam warning light can come backwards so that it is no longer obscured by the speedo. I also want to fit indicators as a safety measure, waving your arms around giving hand signals is not totally effective in this day & age. I am agonising a bit on what type to fit. The original style bar end ones would probably be easiest and look right but they are vulnerable and they do make the bike a lot wider in the garage. Any other type of indicator is likely to need holes drilling in the bodywork which I am a bit reluctant to do. If in doubt do nothing seems to be the order of the day for now.

Monday 17th September

Hard to believe a month has gone by since I last wrote up the diary. Fortunately I have actually done some work on the bike during that period. I have now fitted a new 3.25 x16 Mitas rear tyre which has a nice tread profile and looks better than the very chunky Russian off road tyre I used as a

temporary measure. I re-spoked the back wheel while I was at it so we now have a tidy and well shod rear wheel.



I found some pattern bar end indicators for the ES250 on ebay for not too much money and these are now fitted to the bike and work a



treat. Does make it a bit wider and on full lock they tend to hit my knees but I feel much less vulnerable with them fitted. While I was at it, I made up a new speedo and warning light mounting on the lines discussed above. Works much better but I would like to find a larger bicycle speedo as the display on mine is a bit small. Not a priority, something will come arise if I am patient.

Perhaps the most noticeable thing about the bike is the shiny new exhaust system now fitted. The new silencer came with the bike along with a new exhaust pipe but the latter was for a TS. Looking on the MZ-B website in Hungary, I saw they had correct pipes for around £10. The main drawback is the cost of postage from Hungary (and indeed anywhere on the continent). They had other parts



equally affordable so I put together an order which included a new pipe and silencer for my TS150 and some other stuff. Slightly fiddly process to complete the order and pay but once this was sorted the goods arrived within 5 days and were of quite acceptable quality. Fitting

was straightforward, once I had found the correct mounting bracket buried in my spares box. With the correct pipe I can also get some longer bolts to drop the footrest to give a better riding position.

I reckon I can also raise the seat a little (as I did on my TS250) which further improves things for tall riders.

On a different tack, I have just had a response to my ad in the MZ Rider magazine for some ES250 engine studs and head nuts and with luck will be getting a set soon. These are not a priority matter but something for the longer term to make in-situ work on the engine easier. Come the winter I am going to have to make a decision on whether to keep riding a scruffy but reliable old banger or throw some serious dosh at the powder coater and sprayer.

24th September 2012

Last weekend was our annual run to Cornwall, staying at St Ives for a few nights. I did agonise briefly on whether to take the MZ or the BMW and the latter won in the end largely due to its bigger fuel tank. However, the BMW refused to start after we had signed on for the official start to the run at Wellington. Neither I nor the AA Patrol could restore sparks so the BMW was recovered home (a saga in itself) and the next morning I set off to the Lizard on the faithful Trophy with no more than a quick check of gear oil level and tyre pressures. The bike performed well though I was bit surprised to run out of fuel after only 130 miles or so. Reserve seemed reluctant to co-operate so I had to resort to the old trick of tipping the bike on its side to get enough fuel to reach a garage at Holsworthy. I had started with a full tank and it only took 2.5 gallons to top up the average was just over 50mpg – not too good. That apart the bike performed really well over the whole weekend and was cruised at 55-65 along the A30 from Hayle to Exeter (nearly 100 miles) with just a brief stop to refuel at Okehampton.

A rather more scientific check on fuel consumption indicated it was about 57mpg overall. A bit better and possibly indicative of the hard time I was giving it but not what I would have expected. The plug was a nice dark chocolate when I checked it so the mixture is not excessively rich. Normally my 250 MZS give around 75-80mpg and on a holiday in France the Blue TS250 averaged over 90mpg. I suspect the Mikuni carburettor as, when fitted to the Blue TS250 some while ago its fuel consumption also dropped markedly to the low 60s. Unfortunately, I don't have a suitable alternative carb to fit on the Trophy as yet so the Mikuni will have to stay. Though the MZ is fully capable of a touring holiday in performance terms, the small tank, high fuel consumption and need to premix all make it a bit of a chore. However, that may be academic as right now the MZ lives and the BMW is still without sparks and no clue to the problem.

22nd February 2013

A big gap in the saga as the Trophy has continued to be used as my winter hack and was getting steadily scruffier though totally reliable. As the Mot has now run out and the TS250 has now been tested and taxed, I decided that the ES250 should be SORN'd and given a long overdue makeover.

One thing I did try immediately before the strip was to fit the 30mm Amal Mk II Concentric which I bought last year. When I tried this before, it fouled the gearbox filler if I used the standard ES250 manifold. This engine is a 5 speed TS250 motor and the filler is on the opposite side to the 4 speed engine. By using the standard TS250 manifold, the carb will fit but would foul the battery tray if it had not already been sawn off by the previous owner. The tray now fitted is a something I fabricated and bolts on so removal was easy enough. The carb worked well though the induction roar was quite

pronounced even with a proprietary air cleaner fitted. There will be a decision to make at the rebuild stage regarding this carb. To fit it with the ES250 manifold will require a modicum of surgery to the TS250 engine, basically reducing the height of the oil filler neck. If this can be done safely then it would enable the use of a wider range of carbs in conjunction with the standard air box and filter. Retaining the offset TS250 manifold would necessitate a redesign of the battery platform, though with the Powerdynamo setup, no battery is needed anyway. It would probably also need surgery to the LH side panel. On balance I favour modifying the engine as this already has already been modified to include a second lower mounting bracket. Time will tell.

Taking the bike apart took under a day. I sorted it into major components, firstly a pile of parts that required painting, a pile of bits that needed other refurbishment (mainly stuff I will zinc plate) and remaining bits that just need a clean. Doubtless other repairs will be required given a more detailed examination of the parts but hopefully these should be pretty straightforward.

The parts that needed painting were divided into two piles. The frame, front and rear forks, footrest, stand and various other brackets are in the first wave of things to be powder coated as with these done I can build the rolling chassis again. After some thought, I added the rear mudguard to this pile. Various parts were masked where I did not want thick paint to cause problems (steering head, spindle holes in the forks etc). I also found a crack in the footrest which I welded up. Then it was off to my favourite powder coater who handily lives only ½ mile away in the same village. Snag number one, the premises were all locked up and enquiries confirmed that he had in fact closed down just after Christmas. Fortunately, there is another guy not too far away who I have also used previously so the parts were transported to Seend and given into the care of Steve at TPCS. The parts should be ready in about 3 weeks though I am not overly concerned about the timescale as this is not an urgent project; I have enough bikes to see me through the coming riding season (too many if you ask my wife).

The remaining tinware consists of the front mudguard, side panels, handlebar cover, headlamp shroud and tank. Ideally I would like these items painted rather than powder coated to get a better finish. I need to get some quotes for this work as to see if it's affordable, otherwise I will have to get the stuff stripped/blasted and do the job myself. However, this will be a last resort as I am not very good at painting. There is no hurry over this part of the project as basically all these parts just bolt onto the rolling chassis.

In the meantime, I will work through the pile of other bits cleaning and repairing as necessary.

Friday 1st March 2013

Not a huge amount of time spent on the Trophy recently. I did sort out all the bits that should really be shiny and had a session with my Zinc plating kit. One or two parts came up really well, the other were a bit dull. Nevertheless, they will look ok in situ and at least the plating will hold the rust at bay. I partially stripped the engine mainly to check the state of the big end and the piston/barrel. The latter has a fair amount of wear. My engineer friend Terry considers it to be within tolerances but I have a new piston in stock at the correct oversize. The big end seems to be ok, just a slight amount of sideways rock but no measureable up & down play. I do have a conrod kit in stock but as the engine was performing fine I am tempted to leave the bottom end alone for now and just go for the rebore.

There is the possibility that the added friction created by a properly fitting piston will take the big end out but it's a risk I will take as the bike is not going to do a huge mileage.

A couple of further mods have been made to the engine. The first was to bore out the holes in the cylinder head to 12mm This allows the use of the long sleeved cylinder head nuts originally fitted to the ES250 4 speed motor along with the shorter studs. The main purpose of this mod is to allow the head and barrel to be removed whilst the engine is still in the frame. With the original long studs and conventional nuts used on the 5 speed motor it's a much fiddlier job. Whilst the engine was on the bench I also cut down the oil filler neck by about ½". I then offered up the 30mm Amal Mk II concentric and a 30mm BVF. As far as I can tell, both will now fit on the ES250 straight manifold and line up with the original air cleaner box. This gives me a range of options for a carb when I get to that stage in the rebuild.

I have not yet done anything about the remaining paintwork and will need to give this some attention soon.

Thursday 7th March 2013

I fitted the rebored barrel and new piston to the engine today so the engine is now complete ready to install in the frame when the first batch of items comes back from the powder coater. On the advice of Steve at Piston Broke, I modified the piston slightly by drilling some 1mm holes on the front (exhaust side). These allow a tiny amount of oil to reach the hottest part of the swept area of the piston and is a mod he used to do when carrying out warranty repairs on ETZs for Hub motorcycles. The holes have to be carefully located so that they are not exposed to the exhaust port. The easiest way I found was to put the piston in the bore at tdc then draw the shape of the port onto the piston. I drilled three down each side alongside the port opening and two at the base below the port. Unlikely to do any harm and may just stop a seizure given that this is an Indian piston obtained from MCZ-B in Hungary. Oddly enough talking to a friend who runs a couple of 1930s Scotts, it seems to be a mod used on these engines as well.

I have decided to paint the tank and headlight cowl myself but get them stripped and blasted by the powder coater to make life a bit easier. If the finish on the rear mudguard is ok, I will have the front mudguard, side panels and handlebar cover powder coated gloss black as well.

Though I laboured long and hard to fit the Disk brake conversion to the Trophy and it does work



well, I must admit that aesthetically it looks wrong. I do have the original wheel and brake drum so I will clean both up so that I have an option. I have modified the brake plate to use an external brake arm which gives greater leverage. This involves drilling the pivot hole for the original brake cam right through, then using a rear brake cam which is much longer; in fact too long really. Mine has been

shortened and re-splined by a friend who did a similar mod to his TS250 with very positive results.

Friday 15th March 2013

Steve from the powder coating shop rang yesterday to say that most of the powder coating was done and ready for collection. The exception was the centre stand in which he had found a couple of deep cracks. I picked up the stuff this morning, the sharp eyed will see the stand unpainted at the front end of the boot. An hour later I was back at the shop with a freshly welded stand. It's



obviously suffered considerable trauma in its life and there were plenty of other repairs evident, many as incompetent as mine. I will search out a better one but for now it will suffice. A centre stand is pretty much essential for the early stages of a full rebuild.

I also dropped of the other parts that need powder coating (side panels, front mudguard and handlebar cover) and the tank/headlight surround which are to be sand blasted only ready for me to paint. Hoping these two bits and the stand will be available within a few days so that the rebuild can begin.

Saturday 16th March 2013

I needed to create some space in the workshop before starting the Trophy rebuild so I tackled a few outstanding jobs. First task was to carry out a bottom end rebuild of a spare 5-spd TS250 motor which had been stripped due to a reported jumping out of first gear problem. Not something I have come across before and when stripped I could find no obvious reason. Everything looked fine but just in case the bottom end has now been rebuilt with my last remaining 'good' 5-spd gear cluster. Talking over the matter with the guy who reported the first gear problem, it now seems that it may

actually have been an issue with an excessively slack rear chain. Anyway I have kept the suspect gear cluster in its own box with a suitable label; it may yet have to be pressed into service. Tidied up a few other items and moved a bike to the rear garage so that there was room to set the bike lift up. I find this creates a useful working area which is accessible from all sides. As it was raining quite heavily on & off there was little prospect of doing anything outside I decided to get the zinc plating kit out and tidy up a few items. Most were for the Trophy but I also did a couple of items for the Simson which I had missed first time round (though the winter weather found them ok. I also did the side stand spring for the ISDT bike which had been festering away over winter and annoying me. The results are shown below. Not wonderful but they should be rust proof; I ought to have taken a



before picture to show how much better they now are.

Final job of the day was to clean up and respray the rear chain enclosure. This is perfectly sound and an original Bakelite type (replacement ones now are a softer plastic which is prone to cracking easily). The drawback is that they tend to fade and look scruffy. A couple of coats of satin black has restored the colour but not overly impressed with the result. On reflection I wonder if the stuff used to rejuvenate black plastic car bumpers would have been a better choice. Once the stand is ready, I can start the rebuild.

Monday 18th March 2013

Steve from the powder coating shop rang at lunch time to tell me that the tank and headlamp unit had been shot blasted and the centre stand was powder coated so by early afternoon the bits were back in my garage. For various reasons, I do not want to start the rebuild until next week so the

stand joined the other bits in the spare bedroom. It gives me a chance to concentrate on prepping the tank and headlamp. Whilst tidying the garage last week I found ½ litre of the red paint I used on my last Trophy rebuild together with some hi-build primer so that saved me some expense. I did have to buy some more Cellulose thinners and while I was at the paint shop I got them to make up a spray can of the red paint. It only used a small amount so I will have plenty enough left but a spray can will be useful later for touching up and such like.

First job was to rub down the metalwork, blasting leaves quite a coarse finish which is fine for powder coating, not so good for spraying. Then I had to fill a couple of dents in the tank and a small one in the headlamp. Tedious job but it now looks ok apart from a small area on the tank where it looks as though someone had tried beating out a dent from the inside and had raised the metal in small dimples a bit like chicken pox. I have filled and rubbed down as best I can but it really needs a panel beater with the proper dollies. I had never noticed the imperfection in the tank when it was on the bike so I am hoping it's not going to show too badly when re-painted.



I dug out my HVLP spray gun and managed to get a couple of coats of primer on the headlamp and one coat on the bottom of the tank before it got too cold for serious spraying. I also tried a quick burst with the spray can inside the headlamp



shell to see how the colour came out. In the picture it looks rather brown but in reality it's a spot on match for the original MZ red. I will also need to practise the settings on my spray gun as it's running at far too high a pressure presently. Not really a problem with primer but it will cause problems with the top coat. Hopefully the headlamp at least will be completed tomorrow. The tank is not so urgent and will probably be given a number of top coats over several days.

Monday 25th March 2013

The major painting task is still on hold due to the extreme weather we have been experiencing. I did manage to get more a couple more coats on the headlight shell and one more should complete the job. The tank has been sprayed red underneath but nothing more for now.

This afternoon I finally cleared the decks to make a start on the reassembly, mainly because we have visitors next week and Mrs F wants the spare bedroom cleared for our grandson. Funny how the big jobs seem to take little time, by early evening I had the front and rear suspension fitted and its beginning to look like a bike. I would have fitted the rear mudguard as well if I could remember where it was stored.



Wednesday 27th March 2013

Life got in the way for the last couple of days so I have only been able to work on the Trophy rebuild in fits and starts. Added to which some of the parts needed cleaning or other work before they could be re-fitted. However, it is coming together. Both wheels are now in and handlebars are fitted as is the rear mudguard so at least it is a rolling chassis if I need to move it off the workbench. The brake lever finally fitted after I had rubbed down the powder coating on the shaft, tedious job and something I will remember should I rebuild another 250 MZ. The engine is also back in the frame along with the exhaust pipe so it begins to look like a bike. I chose to use the original drum brake wheel front wheel as this will make it look more original. Retro fitting the disk brake assembly is easy enough should the drum brake not come up to scratch. I was rather disappointed with my modified front brake plate, the shoes seemed to be binding and the whole thing felt quite spongy so I used the standard plate for now. This is probably my fault for using a second hand set of brake shoes. I do have a new set somewhere so I will re-visit this issue later as it's not a priority.

The footrest bar fitted easily and with new rubbers looks very smart. The welding I had to do is underneath so does not show. I did some cleaning up of the rear brake rod and operating arm, in hindsight both should have been part of my plating session but a coat of Smoothrite silver has freshened them up for now. I have spares of both these items somewhere which I will plate at some point and then swap over. I also forgot to do the special 16mm nuts which retain the top of the rear suspension units so these also will have to be plated eventually.

Reading the above it does not seem much progress for the time spent but it's surprising how long the little jobs take. Even fitting new s/s bolts requires a few minutes a time to mill the head to remove the identification embossing and attain a flat polished finish. This makes all the difference in my view. I hope to get the bike outside briefly tomorrow to take some pictures of progress so far.

As the sun was shining for the first time in ages though still very cold, I took the headlight up to our spare bedroom while Mrs F was out and gave it a couple more coats of red paint from the spray can. The room faces south so it was really warm in the sunshine and I managed a reasonable finish. By tomorrow the paint should be good and hard. With the headlight assembly in place I can start the electrics; this is always a tedious job and not to be rushed. Easter is coming and I want to get as far as I can this weekend. I am having an operation on my knee next week and the grandchildren are coming to stay so it may be a while before I can resume work.



Friday 29th March 2013

The picture above shows the bike at close of play on Wednesday. Over the last 2 days it all the wiring has been fitted and tested. A few minor hiccups along the way as I could not remember initially what some of the wires were for. The overall loom was excellent as I had largely replaced it earlier in the year. However, I had added a few extra items which of course I failed to document so some head scratching was needed before everything fell into place. One other issue was the need to run additional earth wires from the back wheel and the engine for the brake light and neutral light. I assume the thick powder coating was insulating things that previously provided a metal-metal contact. Once this was done everything worked fine. I did take the opportunity to tidy up some of the excess cable that was provided with the Powerdynamo kit so overall it is now much neater. The only mistake was to forget to fit the new twist grip rubber which now means dismantling the bar end indicators and sundry other bits so it can wait.

Having given the matter of the front brake more consideration, I opted to refit the disk brake assembly which pleasingly fitted very easily. I did have trouble getting the various spacers lined up to centralise the wheel. I need to make up a pair of proper spacers rather than rely on a combination of spacers & washers. The exhaust system was refitted and given a good clean. Though new last year, it was showing rust spots no doubt due to the winter salt. I also fitted the rear chain and guides (least said about this messy job the better) and the rear brake lever which had been painted a couple of days ago. The bit I most enjoyed was fitting the new VIN plate which really makes it look good. In fact that was about as far as I can go with the bits I have available. The tank still awaits a

warmer day for its coat of paint and the other tinware is still at the powder coaters. So far it's looking pretty good.

Thursday 2nd April 2013.

Not a huge amount of progress since the last update mainly because Easter and a short spell in hospital for a knee op combined with the continuing cold weather have limited the appeal of the



garage. I did manage to make up a couple of Comet badges for the headlamp shell. A set of the enamelled badges is around £40 and are a long way down the priority list for now. I also put the gold lining on the rear mudguard. However, I have ordered some new chrome top covers for the front shocks as the present ones are pretty scabby. These are coming from Germany along with some other bits ordered for a friend so goodness knows when they will be here but no hurry. Likewise the

remainder of the tinware is still awaited from the powder coater as is some warmer weather so that I can spray the tank. No sooner had I typed up the above report than Steve the powder coater rang to say the bits were ready for collection. As I am not allowed to drive for a few more days, it will be tomorrow before I can get someone to take me. The weather forecast is for a sunny Saturday so with luck the bike could be substantially completed over the weekend. To celebrate, I spent an hour or so this afternoon, polishing the crankcases and the wheel rims though the picture above was taken before I did this job.

Saturday 6th April 2013

Bit sad today as I should have ridden the Westward Ho Road Trial last night and by now be sleeping at the Tors Hotel in Lynmouth. D*****d knee, however there is always next year. I collected the bits from the powder coater yesterday thanks to my wife's chauffeuring. The side panels and handlebar cover were excellent and are now fitted, the former awaiting their new decals from the MZShop. I was less happy with the front mudguard. The lower section is superb with a deep glossy finish; the front section which is what can mostly be seen of course, was nowhere near as good. The paint looked thin, all the imperfections in the metal still clearly showed and some of the finish was rough as though there was dust or grit present. Annoyingly, I did not notice it until I had nearly finished the gold lining. I tried gently rubbing it down but you cannot really do that with powder as it's too soft. I was tempted to put it on regardless just to get the bike finished. Common sense finally prevailed over impatience and I rang Steve to discuss the matter. Profuse apologies, apparently he had let his son do the mudguard and not checked it before it was wrapped. It's going back in for a second coat next week.

The parcel arrived from Germany on Friday so I was able to fit the top chrome suspension covers. Of course they now make the lower ones look naff so I am going to have to shell out for some lowers eventually. The parcel also contained a pair of 6mm grease nipples for the suspension pivots. With

these fitted I was able to grease the bushes properly, the old nipples simply did not fit the gun properly and most of the grease leaked out of the side. The parcel also contained two of the plastic strips which cover the gap between tank and headlamp. Looking at the pictures when I got the bike, it shows these strips in place but several recent searches of the garage failed to locate them. No doubt they will turn up now that the replacements are bought and fitted.

Today was wall to wall sunshine so I put the tank outside to warm up on the workmate and prepared the garage for spraying. By 1pm the conditions were perfect so I put several coats on in quick succession. It's not a professional job by any means; a bit of orange peel effect in places but at least no runs and I am happy enough with it. After a couple of days to harden off, I will T-Cut and polish to improve the appearance. Once the knee grips and decals are fitted it will be fine.



Sunday 7th April 2013

Only pottering in the garage today as I had some domestic chores which took up most of my time. The tank is now fitted, it needed copious quantities of Vasilene and some gentle persuasion with a



piece of timber before it finally slipped into place. It will get easier with time as the new rubbers stretch. The petrol tap was stripped and cleaned before re-fitting. This threw up a query as there was nothing actually wrong with the internals including the main and reserve configuration. Yet when I took the bike to Cornwall last September it ran out of fuel almost completely whilst the switch was still in the main feed position. I had assumed that the main feed tube was missing but it was present and fitted properly. Very odd and

something I will need to keep an eye on. I bought a couple of items for the bike today whilst out shopping. A pair of stainless steel jubilee clips to replaces the rusty items holding the carb in place (I do like shiny things), a new charge warning light to replace the one I broke and a wireless bicycle speedo. The latter is now fitted and gives much more flexibility as to siting of the actual speedo head. The original one was hard to read and the length of the wire limited where you could locate the base.



Tuesday 9th April 2013

The front mudguard and the rear carrier which I found whilst tidying the garage have both been taken to the powder coater. The decals arrived today and have now been fitted. I will not bother with another photo until the mudguard is fitted and I can get the bike off the lifting table. Checking the bike over I found that the clutch cable was severely limiting the steering on left hand lock. I had this problem once before but with the tank in place no amount of jockeying with the cable run could create enough slack. I got round this problem previously but cannot remember how and I did not want to remove the tank at this time as it was quite a struggle to fit yesterday. In the end I searched my spare cables box and found a clutch cable that was a couple of inches longer. To fit this I had to remove the headlight and in so doing broke one of the spring loaded clamps which provide the location. No great loss as it was clearly about to fail anyway. Managed to find a spare clamp which had also broken at some time but been welded up. Took ½ hour of grinding and filing to make it fit but headlight and clutch cable are now both fine. I checked the throttle cable and this seems fine on both locks.

Friday 12th April

The rear carrier and the front mudguard were picked up yesterday afternoon. Both have an excellent finish and I am now very glad I suspended operations to have the mudguard done again. Today I applied the gold lining and the mudguard fitted quite easily; as did the rear carrier. So the bike in theory is now finished. However, I noticed a few things whilst taking the pictures; funny how looking



through a lens shows up things you had not spotted previously. The first is the tax disk holder which is very scruffy and badly sited. Easily fixed; just need to pop into my local bike shop. The wire and sender from the previous bicycle speedo also needs to be removed. The other issue is also not serious but potentially more time consuming. The rear mudguard is not vertical, initially I thought I had put the number plate on skew whiff. The problem seems to be a slight twist of the rear brackets, probably where it has been dropped in the past. I think it just needs a tweak on the brackets but to get at them safely the wheel and mudguard need removing.

You can clearly see the twist in the mudguard in this picture. Can't think why I never noticed it when I was riding the bike last year.

Of course I have yet to run the engine or do any test rides so I can expect a few more commissioning issues. I want to delay putting

fuel in the tank for now to give the paint plenty of time to harden off. Modern paints do not seem overly petrol resistant and the longer I leave it the less likely to get a problem. In any event, my knee

is not yet up to kickstarting a bike. No further work on the bike for a few days as I am off to Wales for a long weekend. Hopefully by the end of next week the bike will have done its first test ride since the rebuild.

Wednesday 24th April 2013

Most of the outstanding jobs are now completed. A new tax disk holder complete with renewed tax to April 2014 has been fitted. I used the bottom nearside shock absorber bolt in the end. Using the top bolt creates collision problems between the moving front fork and the fixed headlamp I discovered the hard way. The back end has also been straightened. This required a long metal bar,



lots of padding and two strong blokes but it's now looking fine with the mudguard central to the wheel. The number plate still has a slight skew so it will need some attention but no panic for this. Finally put some petrol in the tank this morning and kicked the bike over a couple of times and bingo away she went. Flushed with enthusiasm I rode it down to the garage to fill up with fuel and then round to my local bike shop to buy some lead replacement gloop for the Ariel and Matchless. It started to cut out and I thought for a moment I had a problem, then I remembered to put the tap into reserve and everything went fine thereafter. Only about 5 miles but I think I could have gone much further without issue. It felt a bit sluggish initially, then I remembered the new piston and treated it with more respect. I also think it's running a bit rich possibly because I have re-instated the air filter unit which it never liked previously. However, probably best to

be too rich during the running in stage. Other than that all seems well so now need to get some miles on the clock.

One final observation, my wireless speedo worked fine once I remembered to switch it on. This had been a concern as previous attempts to use this type on other bikes (mostly old British ones with dynamos and magnetos, had been unsuccessful). The Powerdynamo system does not seem to affect the performance at all. The ordinary type self-start once the wheel has rotated past the sender. It appears that the wireless type have to be explicitly switched on at the readout head to start up the sender unit. Annoying but apparently something done to conserve battery life. I will need to check the calibration but I fancy it is not far out based on my short trip this morning. Looking Good.

Monday 6th May 2013

I have ridden the bike a few more times to try and get some miles on the clock and run the new piston in. Somehow the bike still seems a bit sluggish to me, the throttle seems to need a lot of

movement to get any progress and the power then comes in with a rush. I don't remember it behaving quite like this before the rebuild though the only change to the engine was the re-bore. I think it came into focus more when I rode my TS250/1 yesterday. This simply flies in comparison with the Trophy, throttle response is more progressive as well. I found the Trophy was banging and knocking on the overrun towards the end of a longer (10 mile plus) journey so I raised the needle two notches to the centre position. This did improve matters somewhat and the overrun knocking has now gone. However this flies in the face of my theory that the bike was running too rich as raising the needle will have richened the mixture across the range. I guess I am going to have to try removing the air filter at some point to see if that improves matters.

In the interim I have made two other changes. A quickly detachable top box has now been fitted in place of the soft bag I was using. Trophy's don't have any practical space for things like spare oil so a



bag of some sort is essential. The top box was borrowed from my TS150 which has a much larger carrier than the soft bag fits much better so a good swap. Though looking at the picture now the top box does look bigger than I had realised. The other change was to fit a passenger footrest assembly onto the top nearside shock mounting. This gives a handle to pull the bike onto the stand. Previously I was using the

rear carrier but the top box now gets in the way. Interesting to see how both mods work out.

One thing I did find today was that the tyres were both a bit low in pressure, the rear was down to 16psi (normally 30psi) and the front was about 19psi (normally 25psi). I have restored both and intend taking the bike on a much longer run tomorrow to see how it behaves.

The plan to use the bike on a longer run was thwarted when I found the front tyre had dropped to around 5psi overnight. I pumped it up to 35 psi but decided it was better not to risk a run until this matter had been investigated. The Supa5 was pressed into service for the trip and I had to fill it up during the day. Fuel consumption on this bike over 161 miles was two gallons so it's doing 80mpg, about what I have come to expect from this bike – in France it averaged over 90mpg running on 99 octane petrol. The ES250 which is also running a Supa5 engine has never given much over 50mpg which is a bit of a mystery as well as a concern to my wallet. Especially when it's the primary contender for a 1200 mile run from John O'Groats to Land's End in September. More investigation needed – pity the weather has turned to worms again – it's cold, wet and windy for the next few days.

Friday 10th May 2013

Oh dear. Took the Trophy out for what was intended to be a longer ride today. Met up with friend, also MZ mounted and all went well for about 10 miles. In fact I was presently surprised at how well it was going, then the bike started smoking badly and eventually stopped. Managed to get it going again with a change of plug but it would only run on full choke. Fortunately we were quite close to my MZ friends house so we parked the bike in his garage and had a coffee and bacon sandwiches whilst we considered how to fix the Trophy.

Plenty of sparks so the problem had to be fuel related. Carb stripped and checked, spotless inside, no signs of any contaminants and the jets were all clear, Blew through all the orifices with an airline and checked the fuel height – all correct. Put back together and same result; would only start and run on choke (or rather starter jet). As soon as this was disengaged the engine stalled. The whole process was accompanied by dense smoke which my friend considered to be greyish rather than the blue normally associated with burning 2-stroke oil. Also I had noticed since the rebuild that the engine smelt rather different. Our final conclusion was a failure of the clutch side main oil seal which was allowing a major air leak and sucking in oil as well. No alternative but to get the car and trailer the bike back home.

Later: Well the engine is now partially stripped. Fortunately replacing seals can be done with the engine in the frame so it was not too difficult to get the clutch side oil seal exposed and removed. Lot of fuel behind the seal but I assume this was due to running with the choke on. No obvious damage to shaft or seal so I took it to another friend who concurred that the seal looked fine. Anyway he happened to have a pair of Fred Rogers special blue crank oil seals which he gave me so I could get the bike back together.

As its now quite late I decided to leave the rebuild until the morning and write up the saga. It was at this point that I started thinking about the day's events. The bike had run well for 10 miles and the problem only became apparent about a mile after I had refuelled (just over 7 litres). Sudden horrible thought, had I put diesel in the tank. Checked the receipt but it only confirmed the cash value of the transaction not the nature of the purchase. Rushed out to the garage and sniffed the tank but this was not conclusive. It did not obviously smell of diesel but then it would have been at most a 50/50 mix and the premix oil adds its own bouquet. Not much else I can do for now, the engine has to be reassembled anyway. However, I will not bother doing the generator side oil seal until I have tried running with fresh petrol.

Saturday 11th May 2013

The bike is now back together and filled with fresh petrol; surprise surprise it now starts and runs properly. Still a lot of smoke initially as would be expected but this had pretty well cleared after a trip up the road and back. I replaced the clutch side oil seal as the original was damaged beyond use getting it out though I am sure it was not faulty. I am now 99% certain that I filled the bike with diesel yesterday as I split some emptying the tank and after the petrol had evaporated, you could see the oily residue of diesel and smell it. The 3 gallons of fuel drained from the tank is now residing in a jerry can. Fortunately we have a diesel car and van so in small amounts it will doubtless get used productively.

It was not an entirely wasted exercise as I took the opportunity to change the O rings for the gear and kickstart shafts, both of which had been weeping slightly. I also played around with the clutch thrust race shims to get rid of end float and reset the squish band clearance. The motor had been prone to metallic knocking which I mentioned before though normally only on the overrun. I noticed that it started doing this under load just before it stopped yesterday which given it was running on 50% diesel was not really surprising. I found the squish clearance was well under 0.9mm so added a 0.2mm shim and got a reading just under 1.1mm which is well within the tolerance of 0.9-1.2mm. This should give the big end an easier time as well as hopefully getting rid of the knocking. Certainly the bike felt a lot more flexible on its short test run. When the cold wind and rain ease off I will try a longer run.

Wednesday 15th May 2013

I took the bike for a 20 mile ride today using the same route on which the breakdown occurred last week. Initially I bumbled along very gently and the bike felt absolutely fine. Giving it a bit more welly as I neared my destination it started to cut out and I pulled the clutch in thinking it might be a piston nipping up. However, the engine was quite free and letting the clutch out as we coasted the standstill, the engine fired up and ran quite happily (albeit very gently to my destination). Over coffee we concluded that it was fuel starvation and I remembered that I had played around with the float level last Friday in an attempt to solve the previous problem. Riding the bike home it did the same thing a couple more times and I stopped for a look. The fuel level in the petrol pipe was only just above the carb and I was pretty sure that I must have reduced the float level to the point where the engine was starved at anything much over tickover.

By riding very gently we made it home where I stripped the carb and carefully set the float level. On the Mikuni, the float needle has a very softly sprung base pin and the weight of the float is enough to depress this when upside down, which was how I had previously set the float height. I did it the other way up this time and set the float level with the base pin just touching the float lever as the float was parallel to the carb body. Re-connecting the petrol pipe and holding the float bowl in place by hand, I was able to check the fuel level in the bowl was about right without flooding. More to the point, the fuel flow into the carb was much better. A test ride round the block which includes an unrestricted main road section showed the bike pulling well up hill on quite wide throttle openings without cutting out. Cannot give it too much stick yet as I am still running it in but I am reasonably sure of the diagnosis and the corrective action. I have a club run tomorrow so plan to use the bike on this and see how it behaves. I want to get the bike to a state of trusted reliability as it is a candidate for a John O'Groats to Land's End run planned for September.

Sunday 26th May 2013

The Trophy was taken for an outing on 16th May and performed without problem. However, since then I have been away enjoying a week's riding in Dorset using a different bike. Today I was able to give the Trophy a longer ride by joining the Swindon Moonrakers section on their Spring Run around North Wiltshire. Did about 100 miles altogether, the engine is loosening up nicely and did not miss a beat all day. I did notice some small oil leaks which I investigated when I got home. Main one was from the clutch cover plate so I fitted a new 'O' ring. I also checked the gearbox oil level and found it was overfilled by about 100cc which will not have helped matters. The other leak seems to be from

the gearchange shaft which is a bit disappointing as I did fit a new 'O' ring whilst the cover was off a few days ago. It mainly leaks if the bike is left on the side stand so the remedy is obvious.

I checked the fuel consumption which was about 70mpg. Rather better than it has been but not as good as the TS250 especially considering the fairly modest speeds used all day. I had a look at the plug; this was on the rich side which is fine whilst running in. I will drop the needle a notch after I have done another 50 miles or so (currently just over 200 miles since the rebore) and lean off the pilot adjustment a tad. Overall a satisfactory test ride and in all other respects the bike is going well.

September 2013

The Trophy has not had much use during the Summer as I was busy with other things including preparing a bike for the John O' Goats to Lands End Run. However, I did find time to rebuild the engine from a friend's ES250 (though it was actually a Supa 5 motor). Anyway he was very pleased with the result and brought it round for me to try out once he had completed the running in. What a revelation. The last time I rode this bike it was rough and gutless and made mine seem like a racehorse. Now it was smooth all through the power band and very quick. I was also impressed with his front brake which is still a standard drum. Made my Trophy seem like a real dog when I gave it a run shortly afterwards.

Looking back on my notes of the Winter rebuild I did agonise over whether to replace the big end but finally decided it was ok. Anyway I decided that I had no choice but to rip the engine out of the frame and give it a proper overhaul so I started this at the end of September.

1st October 2013

With the engine apart, the big end still seemed ok but since I had a conrod assembly on the shelf I decided to take it to Steve at Piston Broke in Bristol. A good decision because once apart it was obvious that the pin was badly worn and Steve reckoned it would have been very noisy in operation even though there was hardly any detectable play. The other bearings were quite new as I must have rebuilt this engine at some time in its life but I decided to play safe and replace the lot. Along with the bearings I included a new 1st/3rd gear selector as there were slight signs of wear on the original.

Thursday 10th October 2013

Ordered the parts from Germany on Sunday 6th October and they arrived at lunchtime today; very good service. The parcel also had a few other bits which will figure in other tasks on this and other bikes later. I had already cleaned up everything in the paraffin bath so I was able to get straight on with the rebuild. First snag was an inability to get the gearbox into the crankcases. Normally this is pretty straightforward if you pre-assemble it in the special frame I was given. After two attempts to get everything in place I pulled the whole lot out and finally found the problem was with the new 010 selector. It was simply too thick to fit into the groove in the sliding gear thus pushing everything out of line. Nothing for it but to complete the rebuild with the old selector. The gearbox had been perfect in operation so I do not expect this will be a problem, more annoying than anything else. I will report the problem to the shop in Germany to see what they have to say.

With the gear selector replaced the rebuild went ahead with no problem. I usually only assemble the bare minimum so that the engine is as light as possible to put back in the frame, then add all the other bits afterwards. Whilst the engine was in bits, I decided to drill an oil filler hole in the LH crankcase as the original is obscured by the carburettor (On 4 speed motors it is on the LH crankcase anyway) For now I have drilled and tapped for a 12mm bung which I made from a piece of nylon bar. A breather hole is included (something I forgot until I came to block up the original filler hole).



Saturday 12th October 2013

One of the things which I was not happy with after the rebuild was the bicycle speedo arrangement. They are inherently unreliable (at least in my hands) and of course not easily visible at night. Having ridden Terry's bike I realised that that standard front brake could be made adequately effective and I pondered whether to convert mine back to drum operation. The disk conversion was a satisfying project but probably overkill and of course it does take away from the period look. Reverting to drum would allow me to use the original MZ speedo. However to do this requires a speedo drive mechanism. On the 4 speed motor a speedo gearbox fits inside the crankcase and is driven by the gearbox output shaft. My 5 speed engine does not have the necessary lugs and previous attempts to install them did not work as I could not get the drive tang central to the output shaft.

My solution was to fit the later type of sprocket carrier which does provide a speedo driver mechanism. Unfortunately this means changing the wheel as well as the earlier wheel does not fit the TS/ETZ sprocket carriers. In this case I have used an ETZ assembly and wheel as I had the necessary parts in stock. This is also more robust as the carrier has two bearings against the single bearing in the TS carrier. I gave the wheel and the rest of the bits a good clean and put them on the bike today. Initially I had a problem with a slight ticking noise but I found the plastic cover (which also carries the speedo drive) was not fully home on its carrier and once this was sorted everything

seems fine. I connected a speedo cable and speedo and the needle moved as the wheel spun so looking good.



Then I realised that the ES250 rubber chain gaiters would not fit the new ETZ chain case which was wider. This was not quite the disaster it seems as the ES gaiters would need replacing anyway. Though quite new, they are made of very soft rubber and the chain had carved part of the sidewall away; particularly annoying because they were quite expensive. AS it happened, my German order included a pair of ETZ gaiters which though too long can be cut down and spliced to do the job and are much more robust. A picture of the two halves waiting to be joined is below. Cannot finish the job until my new roll of self-amalgamating tape arrives – hopefully on Tuesday.



I refitted the Powerdynamo generator; had to consult their web site as I could not remember how to set the timing. Once reconnected I span the engine over found I had good spark. I also turned on the fuel and it started first kick but did not run it for long as there is no pipe or silencer fitted at present.

Nothing much more I can do until the tape for the gaiters arrives. I don't want to experiment with swapping the front wheel and the speedo until I have checked out the work so far.

Wednesday 16th October 2013

The tape arrived on Tuesday and I was able to remodel the ETZ gaiters to the correct length. The bottom one was a swine to fit as there is practically no clearance between the top of the crankcase and the swinging arm. In the end I had to cut a small piece out of the gaiter to get it to fit and use a cable tie to hold it in the correct position. Not ideal but it cannot be seen once the air box cover is in place. I had a similar problem with the original ES gaiters so I think it's to do with the slightly differing shape of the 5 speed crankcase at the rear. However, the top one fit more easily though still a tight fit and they are now in place. The splicing is obvious if you know it's there and look for it but not really an obvious eyesore.



Flushed with this success I decided to press on with the reverting the front end to drum brake. First task was to rebuild the front wheel with the shiny stainless steel spokes I bought from Germany last week. Tedious but a fairly quick job as all the old spokes unscrewed quite easily so I must have given this wheel some attention previously. Fitted some new bearings while I was at it as the old ones were the unshielded type and felt a bit slack. Getting the old wheel out and the caliper out of the way took only moments and then I was able to offer up the rebuilt wheel. Slight snag when I found

that the embellisher plate on the nearside which is also the spacer for the wheel spindle was the wrong type. Half an hour of searching the shed produced the correct embellisher and the wheel was in and span smoothly. Next job was to remove the tank and the headlamp so that I could get inside the housing to remove the brake master cylinder and its cable. Had to disconnect the hydraulic pipe briefly to get it out completely so there was some fluid to clean up quickly before it attacked any paintwork. The brake cable was connected up and bingo a working front brake.

Next task was to strip out my home made speedo mounting plate and the excess wiring. The speedo itself is a correct type for the bike but of course the back end gearing is an ETZ. Its going to be a lottery to see if its set up for an 18" wheel or the later 16" type. I left the bicycle speedo bits in place until this is resolved. I briefly ran the engine to make sure it was charging and put it in gear. The speedo actually worked but seemed a tad slow so I think I have some work to do in this area. Everything else seems to be working fine so road test is the next step; however, I need some petrol and better weather for that.



Looking at the picture of the speedo below, I realise that I have left in place the torch which I used to illuminate the Bicycle speedo. As the speedo internal lights are notoriously dim I will leave it in place for now.



Thursday 17th October 2013

I managed a short test ride on the bike and a number of hopefully minor things came to light, none of which I could attend to for at least a week as I am off to Egypt early on Friday morning. In no particular order they were:

Oil was coming out of the breather hole on the new gearbox filler

The carburetion did not seem quite right, whilst the engine pulled well on from mid throttle upwards, it was fluffy at lower revs and the revs seemed reluctant to drop back which often suggest an air leak somewhere.

The speedo worked but is reading very low compared to the electronic speedo so the gearing will need attention.

I plan to put the 28mm Mikuni carb back on the bike. This has always worked well but does have a much higher fuel consumption than the 30mm BVF. Currently its running a 140 main jet but I have ordered 135 and 130 to see what effect this may have. The 28mm BVF only uses a 120 main jet and the 30mm BVF a 135 (on petroil) so 140 is probably way too big.

Monday 28th October 2013

Back from my holiday and the immediate domestic chores have been dealt with so I got an hour or so in the garage today. The new jets have arrived si the Mikuni carb is now fitted 1itha 135 and is back on the bike. This has more clearance over the old gearbox filler plug so I was able to insert a

breather tube in the rubber bung and block off my new filler hole so that should cure the oil leak. The bike started easily on the Mikuni and once warmed up a little I was able to set a steady reliable tickover. As we are still suffering from the weekend gales, a road test will have to wait. Not had any thoughts yet on how to re-calibrate the speedo.

Wednesday 30th October 2013

Windy but sunny morning so the Trophy was taken for a spin. Firstly to the post office to tax a couple of my other bikes, then to the garage to fill up with fuel and finally to Neston to visit a friend. Only 10 miles or so but the bike ran very well and seemed to improve with every mile. I returned via a slightly longer route then checked the tickover settings while the bike was still warm. In fact very little adjustment was needed. The front brake seems to have bedded in well and was perfectly adequate, I think in retrospect that my disk brake conversion was overkill and really only needed if I ever decide to fit a sidecar which is now unlikely. I checked the plug and it was still showing signs of richness so I fancy I can go down to the 130 main jet in due course. As usual I had forgotten to tighten the plug which was quite loose and this may well have been the source of the minor air leak affecting the rev die back. I also remembered that in an attempt to improve the fuel consumption when previously using the Mikuni, I had dropped the needle to its lowest setting. I have now moved it to the middle groove. Tomorrow, I will take it for another test ride.

Thursday 31st October 2013

Had another tinker with the carb this morning and fitted the 130 main jet. I took the bike for a 5 mile run and it definitely felt crisper with no flat spots and plenty of pulling power. I will leave it in this trim for a while. I noticed that the speedo is very sticky as well as being incorrectly calibrated. It takes time to run up to speed and the odometer is stuck on 24699. At a steady 45mph on the bicycle speedo it registers 30mph so at least I have a rough measure of its variance and should be able to make up a new mph dial as I did for the BMW.

[Back to start](#)