Trail Bike Project – Created from extracts of the Daily Blogg Part 10

Sunday 3rd May 2020

No furher work done on the bike but I have placed an advert on the MZ club website for a bare frame. If one does turn up at a reasonable price and not to far away, then I will consider rebuilding the bike from scratch. Don't expect a quick response but something may turn up and no real problem if it doesn't.

Friday 1st May 2020

One of the things that concerned me about the hi-level exhaust was the flexi piece which is weeping slightly. It may simply need to settle and let the oily residue seal the slight gaps but just in case, I found a roll of exhaust wrap I bought for a previous Trail bike project but never used. This went on quite easily and seems effective – time will tell. I took the bike out for a short spin down the road and the brake mods seem to be an improvement. My foot finds the lever more easily and though a wheel locking slowdown seems unlikely, you can feel it is more effective. Off road you don't want a back brake that locks too easily so it might just be about right. I cannot say I noticed much if any undue effect on the performance and it trickles along easily in high gear if needed. When the lockdown eases, I feel confident enough to take it on a longer run. Too my surprise both the mechanical and bicycle speedo both worked though test with the gps will be needed to establish accuracy. I suspect the mechanical one will be under reading as the gearing is for a 16" rear wheel and the bike is now running a 4.00 x 18" rear tyre. The bicycle speed is on default setting and reading in kms and has so far defied my attempts to ste it up correctly – but it does at least now work.

Thursday 30th April 2020

Today I removed the standard MZ exhaust and refitted the hi-level exhaust that the bike came with. Main reason was to get the silencer out of the way so that I could set the brake pedal to a more comfortable position. I was expecting trouble with the fuel tank which when I got it was raised well above its normal position and backwards a little. I had assume this was two-fold, to increase steering lock and to clear the hi-level exhaust. However, it always looked odd to me and when I fitted the standard MZ exhaust I moved the tank back to its correct position. To my relief the tank was still well clear of the exhaust and the forks don't clout the tank either. So moving the tank was not necessary on either count – very odd.

The only other slight issue was moving the RH rear indicator as it was in the way of the silencer. With that done I was able to adjust the brake pedal but not as much as I had hoped. The footrest bar now limits its movement. Nevertheless it sits at a more comfortable position with respect to my foot. Rain stopped play so a test ride will have to wait until tomorrow. Must say though that it does look more the business with the hi-level exhaust and I'll probably keep it that way even if it does crucify the performance.

Wednesday 29th April 2020

I had another play with the rear brake on the Trail bike today and improved it slightly but I am still not overly happy with it. The rain cleared after lunch so I was able to take it for a short test ride to the end of the road and back. There were no major problems, everything seemed to work ok but as I suspected the rear brake was awkward to use and not terribly effective. The pedal has to be set high so that the brake bites before the pedal hits the silencer which makes it difficult to operate. I am going to try refitting the hi-level exhaust tomorrow to see if that helps.

Tuesday 28th April 2020

Very little to report today other than the Trail Bike was finally taxed today at Holt Post Office as an Historic Vehicle. The V5c is now on its way to DVLA to be reissued with the change of class. The bike itself is back in the workshop to see if I can improve the back brake operation and maybe sneak a ride on it.

Thursday 23rd April 2020

The silencer has been refitted to the Trail bike. Not sure if the caustic soda has done any good, what came out was pretty black. Some was trapped at the silencer box end so I drilled a small hole at the bottom. Doubt it will cause a problem, but I can always block it with a self tapper. I half expected a jet of steam to emerge or it to sound like a hubble bubble pipe

but disappointingly it just made the usual ring ting ting noise. I have run out of the large capacitors which are used in place of batteries to smooth the voltage and allow the indicators to work. VAPE want £30 for theirs and the Lucas type are around £25 on eBay. Paul Goff has a clone type for £15 with postage but usefully , he did give the specification. I now have a pair to a higher spec on order from eBay for under £4 inc postage. In the interim I borrowed the capacitor from the TS250 as it does not have indicators anyway. With this fitted, the Trail bike indicators worked fine. I still plan to make a better set of front brackets but its not urgent

Not so fine however was the pool of oil under the offside front fork, some of which had got into the brake drum. I removed the front wheel and cleaned up the linings with thinners and dried them with the hot air gun. I thought it was a leaking seal which is odd as I replaced it only a few weeks ago. Closer inspection showed that it is coming out of the bottom of the fork so now the wheel has to come out again so I can get at the 10mm nut which secures the damper assembly. This has (or should have) a fibre washer inside to seal the aperture. I am hoping I can fit one externally to do the same job should it be more than just a loose nut.

One other task to make the Trail bike ridable is a rear view mirror. Previous attempts to fit a wing mirror were blocked by the ali handlebars which have a much smaller hole than steel bars. I found a bicycle type bar end mirror on the ETZ250 which was surplus so removed it to see if I could modify it for the Trail bike. This meant I had to find one of the MZ bar end caps to hold the twistgrip in place, then cut a hole in the twistgrip for the fixing screw and find a correct size screw. Predictably it then went to worms when I overtightened the twistgrip fixing clamp. These are quite fragile and I am always careful with them, quite why this one decided to give up the ghost today I don't know. I did manage to find a previously repaired spare which is now fitted (very gingerly). Finally I was able to modify the bar end mirror to fit the Trail bike handlebars. What should have been a simple job took all afternoon.

Wednesday 22nd April 2020

This afternoon I fitted the indicators to the Trail bike. As the bike does not have an MZ headlight, I had to use some brackets held in place by the bolts that lock the yoke to the fork stanchions (as on ETZs). These were made a while back and inset quite a lot as the plan at the time was to use a set of ETZ251 indicators which are quite big. These turned out to be incomplete hence the gift from Terry. The new ones are a lot smaller and possibly inset too far but they are adequate for the moment. At the rear, there was a handy bracket on the RH side (intended for the hi-level silencer) but I had to fabricate a bracket for the LH side. With the indicators in place I could sort out the wiring. This is all hidden under the tank along with the flasher unit and operated by the standard MZ indicator switch. I temporarily fitted a battery and all is working well. I cannot test it running from Powerdynamo alone as the silencer is still being pickled in caustic soda. The noise on an open pipe is unbelievable. Tomorrow's task is to drain and refit the silencer – another messy job.

Monday 20th April 2020

Sunday 19th April 2020

The Trail bike, now has the 5 spd engine fitted and runs, albeit very nosily and not for long as the silencer is currently filled with caustic soda to try and degunge it. One thing I was relieved about was the fit of the 16t gearbox spocket. When the 4spd engine was fitted there was what I thought to be a tight spot when I fitted the 16t sprocket which made me wonder if it was faulty. However, when I stripped the 4spd engine to fix the gearbox, I found that the chain had been rubbing against output bearing cover and had chewed up a couple of the fixing screws. In part this was my fault as I had used round head rather than countersunk screws but even so the cover itself was gouged slightly. Possibly the fact that the chain was a new HD type with thicker side plates did not help. Fortunately the cover design on the 5spd engines is slightly different and is not fouled by the chain. Always something waiting to catch you out.

Saturday 18th April 2020

The 5spd engine in the TS250 is now sitting on the bench and the 4spd engine partly installed. The chain and sprocket are in place (horrible messy job) and the Powerdynamo system is fitted and sparking well. The only odd thing is that the low tension cutout does not seem to be working. This is probably down to my memory as I cannot be sure which method I adopted to stop the engine. I'll have to trace the wiring but it can wait for now. I swapped the cylinder heads over as I wanted the one with the trimmed fins to stay on the Trail bike. This meant resetting the squish gap, easy but tedious as you have to fit the head, measure the gap, then remove the head and measure the shims to see how much to add or remove. Then refit and re-torque the head to check again. Tomorrow I can jack the ngine into the top mounting and refit the exhaust system which should complete the engine swap.

Friday 17th April 2020

The ES250/2 gear cluster did not appear to be damaged despite the missing thrust washer so I started rebuilding the the TS250 engine with the Trophy cluster. Had to dig out the MZ workshop manual as it was having a bit of a mental block over rebuilding 4spd motors. In fact the gearbox is a lot easier as you can build it up bit by bit, unlike the 5 spd cluster which has to be assembled in special tray and offered up as a complete assembly. Initially all went well and I could spin the shaft freely but as I started to select gears, some worked and some simply locked the whole cluster. As you do, I dismantled and tried again even reversing one of the gears and the selectors but that made things much worse. In the end checked each gear individually and found that 1st gear (the big one on the output shaft was immoveable. Tapping the shaft gently towards the output sprocket it quickly freed off and gear changes all worked perfectly. As far as can tell, the cause was the bronze bush the gear runs on not being quite long enough so that the gear could be trapped between the bearing inner race and the thrust washer I had just fitted. I checked the original TS250 cluster and it's bush is also slightly shorter than the hub of the gear.

Monday 6th April 2020

I have been offered some indicators for the trail bike but cannot pick them up due to the current lockdown. I did identify a way to fit the rear indicators and a way of improving the

wiring. However, these jobs are best all done together so I have put the trail bike in one of the sheds to clear space in the garage for another project

Saturday 4th April 2020

It struck me after I had tried the smaller blue tank that the original white tank should also fit on the forward mounting and sure enough it did. The rear connection is now in the wrong place but it was easy enough to drill and tap 6mm bolts to hold it to the frame and the result is below, Saves me making a decision about painting the other tank anyway. I have also modified the seat fixings so that it now fits snugly against the rear of the tank

I think I have just about exhausted all the possibilities with respect to the petrol tank and seat. This picture is now my screen saver so I can ponder over which version to go with.

Today I made a start on the wiring in part necessitated because the headlight stopped working. What a rats nest and all bound up with ordinary insulation tape so well sticky. The loom appears to be from a Japanese bike but the wires have not been trimmed to length so all the excess is coiled up in various places and of course the clours are not MZ standard. I have now dismantled it totally and rebuilt the loom with just the number and lengths actually needed for the job. It is minimalistic, there is no lighting switch and no sidelight. The headlight and rear light are permanently on though the dipswitch operates and is in its normal position. I added a neutral warning light as with the 4spd box it is often difficult to tell when it's actually in neutral. No battery, current comes from the Powerdynamo but obviously only when the engine is running. Not totally happy with my workmanship as the

wire is old and will not solder so there are more choc strips than I like. If I keep the bike I will probably replace it all with new wire. I retained the ignition switch which just earths the low tension side of the coil as a security measure and the ign cut-out on the handlebar. Indicators would be desirable but I could not find anything suitable in my electrical spares box nor could I see any obvious place to fit them at the rear – so a job for another day.

Thursday 2nd April 2020

Out of interest I have now tried the smaller tank currently fitted to my 4spd TS250. This was an option at one time and appears in the spares book but mine is the only one I have seen in the flesh. The shape is identical to the TS125 tank but it has the correct bottom fitting for the 250 frame. I cannot make my mind up which looks best but the smaller tank did emphasise the big gap between seat and tank so I have been examining the fittings to see how easy it would be to move the seat forward. In the picture it is only loosely held in position but does look better.

I also gave the exhaust system a further clean up yesterday and sprayed pipe and silencer with silver hi-temp exhaust paint. Not sure in hindsight that black would have been better but regardless it is certainly better than rust. I still need to clean out the silencer but that wil have top wait until I can get some caustic soda. Despite my reservations about the effectiveness of this product I will give it a try before resorting to cutting it open.

Since I am now pretty much wedded to the idea of a low level exhaust, I removed the remaining brackets used to retain the hi-level exhaust. This revealed a bracket in what appeared to be an ideal location for the silencer rear support rod. The picture shows that this does work but on balance I prefer the forward mounting I made on Tuesday and will revert to that at some point.

Tuesday 31st March 2020

The new model locomotive has occupied most of the last couple of days but today it was the Trail bike's turn again. I spent the morning tidying up some of the shelves in the workshop and reorganising things so that as far as possible all parts of common type are in the same box or boxes rather than being mixed up and scattered all over the place. The net result was quite pleasing as very little got thrown away, yet the garage shelves are more accessible and there is empty shelf space on the workshop shelves. Ready for more clutter no doubt. Anyway whilst doing this I came across the TS250 petrol tank so decided to make this afternoon's task getting it to fit. The front mounting for the current (TS125) tank is something a PO has welded in place and though similar in design is too far back for the TS250 tank. I spent ages pondering how to overcome this problem but in the end it was quite simple and did not require any further mods to the frame or removal of the current front fixing.

The PO had cut of the original front lugs, which are just a piece of 10mm rod but then drilled right through the frame at the same point to provide a fixing for the horn. So all I had to do was use a length of 6mm studding with double bolts either side and as everyone knows 6mm nuts need a 10mm spanner. Job done, but it did take most of the afternoon to figure it out.

Personally I think it looks better as it does not leave a large gap at the bottom or the front exposing much of the frame. Curiously, the forks still clear the tank even with their extended lock. However, I am not sure if there would be enough clearance for the hi-level exhaust – not that it matters to me as I plan to stick with the standard exhaust system whilst in my ownership. I will keep all the bits I removed so if I sell the bike the new owner can make his/her own decisions. I have done nothing that prevents it being put back exactly as it was when it entered my workshop. Probably not easy to see in the photo, but it now has a height adjuster for the brake pedal. In keeping with my philosophy; it's very simple, just a piece of 30mm plastic rod 15, wide with a 6mm hole drilled off-centre; fixed by the rear cover screw.

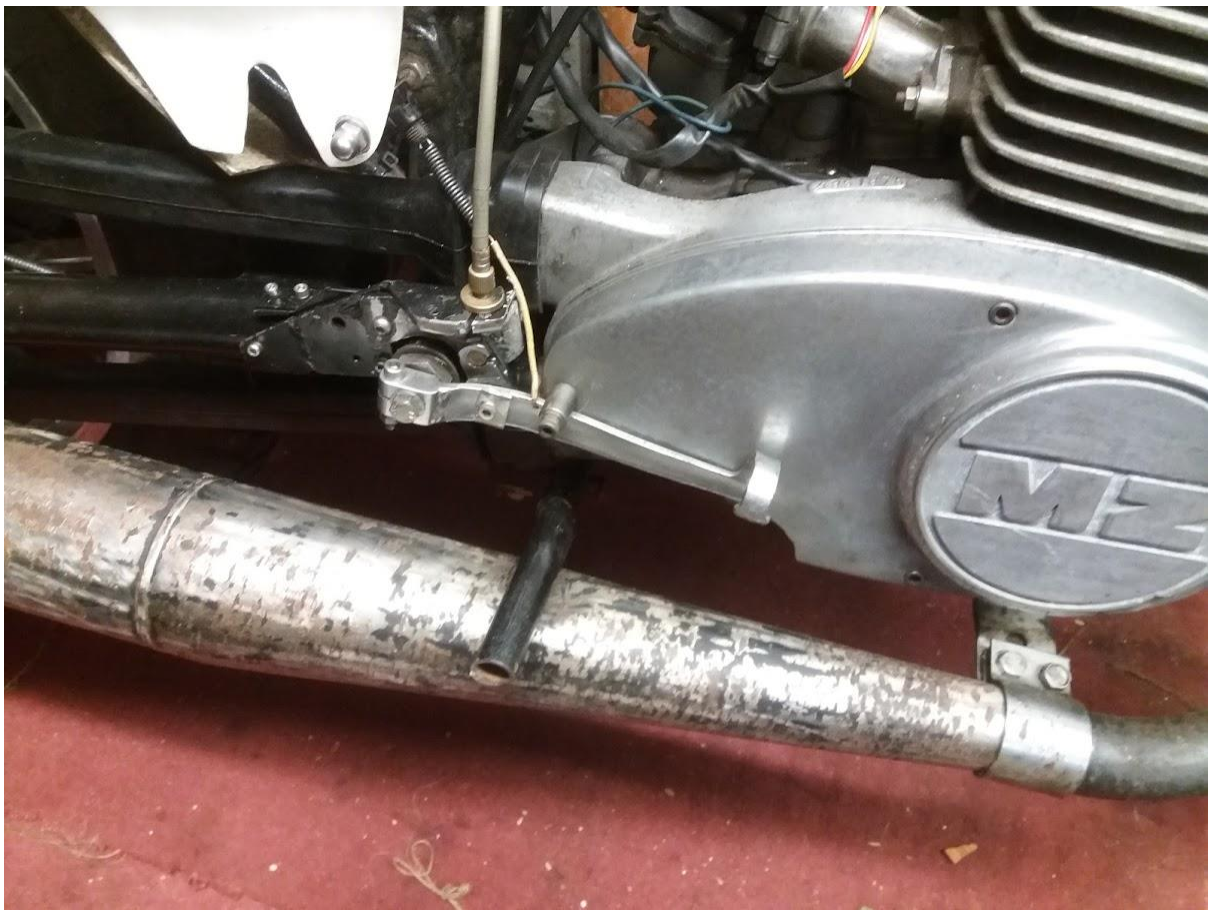
If it all still looks good tomorrow, I will prep the tank ready to paint it white. As luck would have it, there is a near full rattle can of gloss white cellulose on the shelf. The only downside to today was that my memory clearly played tricks as I thought I had a bottle of caustic soda to use on the blocked silencer. Found two bottles of Spirits of Salts but no CS. Don't think the lockdown rules will allow me to do shopping for that – dammit. Also tomorrow is 1st April and in a perfect world I would have been in the post office at 0900 to register the bike as historic. That's not going to happen either and will have to wait until the rules are relaxed a bit. Annoying but I cannot ride the bike yet anyway due to the lockdown. This is one of those things that has to be done at a post office for some reason; not on-line, not over the phone and not by post.

Now I am beginning to wonder about fitting the standard airbox, battery cradle and cover. Sadly my tidying up efforts today only found a battery side cover for a TS250. I did find the relevant bits for at ETZ251. They don't fit as far as I know but might be worth a try...

Saturday 27th March 2020

A lot has changed in the last 10 days. We are now in total lockdown because of the Covid-19 virus and have been for over a week. Only allowed out of the house once a day for exercise and no driving for leisure or pleasure, just to get to the shops or medical emergencies. In fact as over 70s we are not supposed to go out at all but who would walk the dogs or get our groceries. Worse still its me that has to do the shopping as there is no way Daph could stand for an hour or more in a queue waiting to get into the Supermarket. Let's hope things ease of a bit as people begin to realise that its not necessary to panic buy.

Anyway, being confined to home has meant lots of workshop time without the guilt complex. Most of the time has been spent working on the Trail bike. I had two goes at improving the rigidity of the rear brake lever assembly. The first using the existing parts but beefing it all up. Not really the success I was hoping for; still not rigid enough and the pedal was awkward. What it really needed was a new longer lever tucked in closer to the s/arm. Then I had a brainwave, why not try a gearlever. Well not an easy conversion but it finally worked out and the result is below:



You may notice in the picture a different exhaust. I am not convinced the hi-level exhaust the bike came with is going to be satisfactory long term. I think it will be overly restrictive

and the flexible part above the head is already leaking. Plus of course it's a one-off and should it rust through or fail in any other way it's back to the drawing board. So I decided to see if it was possible to fit a standard exhaust system using old parts I had lying around. The picture shows the result but it was not straightforward as explained later:

There were two problems, the first was the standard TS250 exhaust pipe. No way could I get a decent line for the system using this part as the footrest was in the way. The second problem was finding somewhere to mount the rear strut as the part of the rear subframe it normally attaches to is another of the bits removed by a PO. The first issue was resolved by using an ES250 pipe which sits a little lower. The footrest is still a slight issue solved temporarily somewhat crudely by tapping a dent in the silencer. I plan to raise the footrest by about 3/8" with spacers. To provide a top mount I drilled and tapped 8mm in the bracket just in front of the shock absorber top mount. As its quite thin metal I drilled right through to the tube the other side and put in a long stud rather than use a bolt. Overall, I am quite pleased with the end result. I may stick with the hi-level system to start with but at least I know I have another option.

The silencer was bequeathed to me by Rob P-N when he was moving house. It was seriously cosmetically challenged but a couple of hours with rotary wire brushes improved it to the point where I could paint it with hi-temp exhaust paint as I will have to do with the pipe. The other issue is that it is known to be at least partially blocked so I am considering ways to clean it. Never had much success with caustic soda so I may well cut it open. Consulting on this at the moment.

Assuming the bike is now fundamentally road worthy (proving which could be some way of given the Covid-19 lockdown), there are at least two other things I plan to tackle. One is the petrol tank which is from a TS125 so only 2.5 gallons and its set too far back to give better steering lock. Both these features make sense for a trials bike but not for a road/trail bike. The other thing is the wiring which is a mess and the switches make no sense. The dip switch is the on-off switch and the indicator switch is the dip switch – not very logical. I think in essence I am slowly putting this bike back the way MZ designed it – sad really.

Wednesday 18th March 2020

I think the pictures say it all. Very pleased with the way it has turned out and I test rode it round the garden this afternoon. A few things I am not totally happy about and the cosmetics still need attention but it does actually work:

Possibly does not look too much different to how it arrived but this is now a bike you can sensibly and legally ride on the road with a reasonable off road capability. As collected it was a purely a trials bike.

Things still on the todo list include:

Fabricating a stiffer cable stop for the rear brake. Fitting an original TS250 petrol tank. Fitting a16t gearbox sprocket. Redoing the wiring loom. Fitting a 5spd engine. None of these are critical at this point and doubtless when I get it on the road I will find other things needing attention. The big question is do I keep it or move it on?

Tuesday 17th March 2020

St Patricks Day, not that it matters much to me as I am not Irish. The Trail bike is now pretty much back together. The s/arm looks very smart, so much so that I had to give the side stand a make-over as well. Not sure what it was painted with previously but one part needed a serious amount of heat to get rid of the paint. Fitting it was a struggle as it has actually been fitted the wrong way round which means the securing bolt is under the spring so you cannot use the stand itself as the level. Got there in the end without too much spilt blood or bad language. The next thing which gave trouble was the spacedron the rear spindle. It was too long and so were the 5 others I found in the spares box. Very odd as I know I have come across narrower ones in the past which needed a washer to pad them out. Anyway it was easy enough to turn off 5mm to make one fit.

With the 18t gearbox sprocket and a 130 row chain, the rear tyre has about ½" clearance from the s/arm cross piece. This is fine as I plan to fit a 16 or 17t sprocket and the chain is brand new so lots of adjustment available. My newly fabricated cable stop bracket was a litte disappointing as it does flex more than I was hoping for. It does work but I will need to revisit this at some point. Now that the government has told us oldies to self-isolate because of the Corona Virus scare, I can foresee lots of workshop time without feeling guilty.

The angle grinder and the welding torch came into play to reshape the rear brake pedal which is now a better fit. I have also devised a very simple method of limiting its upward travel by extending the screw holding the rear of the timing cover. Initially the brake did not want to pull off properly but I found a suitable

spring to fit between the rear cable stop and the brake arm which has solved the problem quite neatly. So flexing apart, we have a neat rear brake arrangement. You can see the chain rubbers are now standard length and also that I need to paint the brake lever. I will do this when the bike is back on its wheels as I also want to paint the footrest assembly and at present the scissor jack is in the way. While it's on its wheels, if it stays dry tomorrow, I will give it a short test ride and hope for a better result than the previous attempt.

Monday 16th March 2020

I did get a rather better ETZ250 s/arm from Ollie on Saturday as well as a look round his workshop and sheds. His Dad is into projects as well and has built an awesome 500cc twin Supa5. It was tucked away in a corner and not too accessible so I did not get a good look or a picture. Apparently it runs and is nearly finished, just trying to sort out the dynamo charging as the second set of points it needs get in the way of the brushes.

Anyway the second s/arm was missing the rubber buses and steel inserts so I had to hunt round to find some replacements. In the end I used old ones from another s/arm as a temporary workround that will likely never get properly fixed. Derusting the arm was a messy business but its does seem much more solid than the previous one. The brake cable stop has been fitted with slightly larger screws and with brackets top and bottom to stop it moving under load. The side stand bracket is also welded on. Just waiting for the paint to dry properly and it will be ready to fit.

Friday 13th March 2020

I have another idea about fixing the cable stop arrangements for the rear brake pedal which I think is more elegant. I can only mock it up at present with the current ETZ250 s/arm as it will eventually need to be welded. However, it is surprisingly firm even though currently only held in place by two 3mm screws.

I also found a new chain which now has the correct 130 links. The chain used with the s/arm that came with the bike was far too long for the ETZ250 s/arm. Making progress and hopefully I will be getting a better s/arm tomorrow at Shepton. I have also sprayed the chaincase silver to make it look like the ali style cases fitted to ISDT bikes.

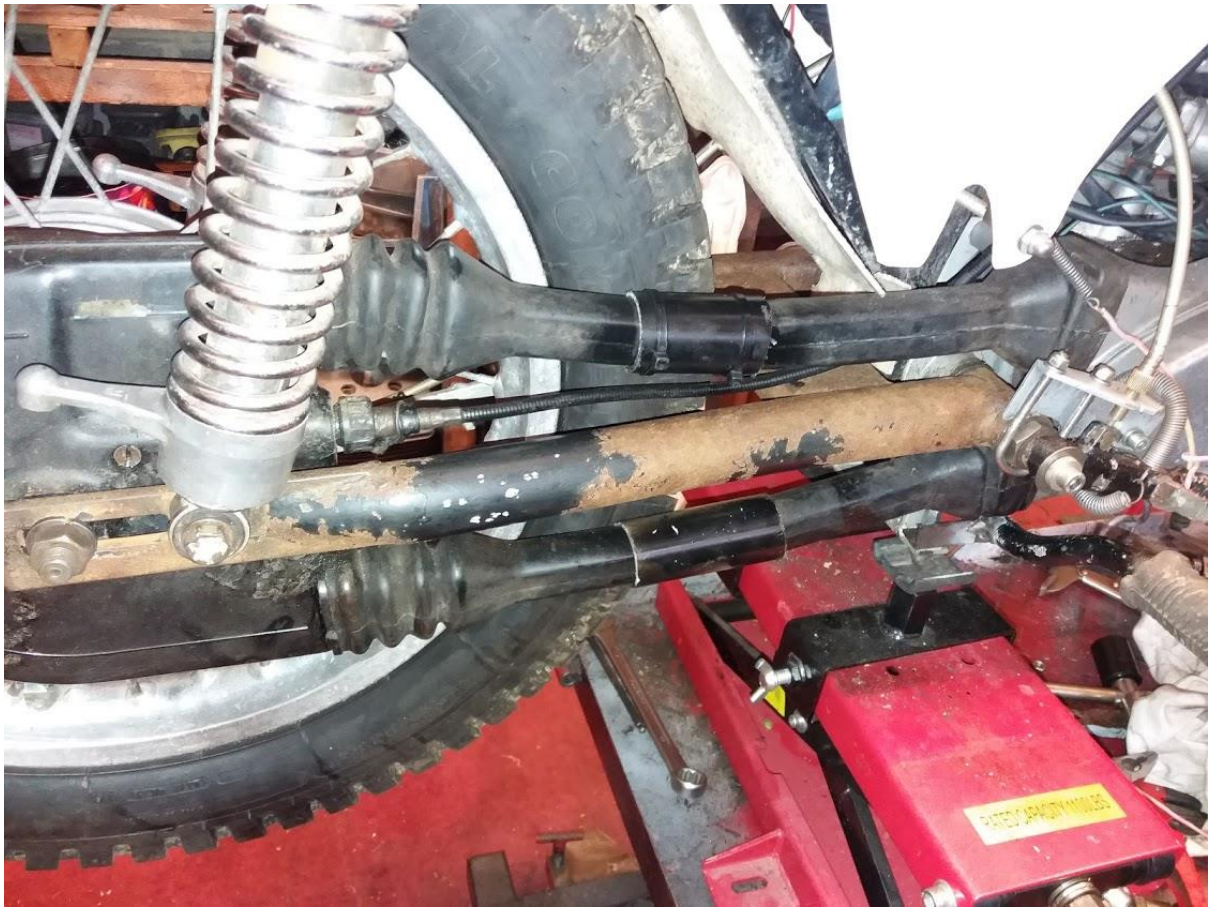
Tuesday 10th March 2020B

Well two paces forward and one pace backward. Flushed with enthusiasm over the revised rear brake assembly, I stripped the whole back end of the bike and fitted the scruffy ETZ250 s/arm donated by Ollie Harris. As expected it fitted the frame perfectly and when I offered up the wheel there was still plenty of clearance for the 4.00 x18 tyre. While the wheel was out I fitted a standard MZ rear brake switch inside the hub – had a new one in my spares box for years and glad to find a use for it. The only part that I did not have to hand were the brackets that locate the rear hub assembly and provide chain tension control. This was to bite me on the a*s later. The next part was hard work and very time consuming but I made up a bracket to fit the side stand arm. This has been tested on the bench and will work well. To help in fitting I added a lug at each end for jubilee clips to hold it in position when I get to the welding stage. All good so far so the bike was taken off the lift so that I could check the alignment of the side stand bracket. Spot on so really motoring now. Next check was to run the engine and observe whether the wobble was going to cause a problem with my rear brake bracket. Nope, hardly any movement of the engine at all so another tick in the box.

Then things started to turn to worms. My attempt to use the standard MZ rear brake light switch came to nothing. This works on the principle of earthing the bulb and requires an appropriate design of light unit common on MZs until very late on. The rear light unit on the Trail Bike is a different type which requires a switch that provides the power, the bulb itself is earthed inside the unit. However, I did manage to connect theoriginal switch somewhat crudely along with a return spring, equally crude but effective. Things were going so well I

decided to give it a quick test run round the garden. The result was some unpleasant noises from the transmission which turned out to be a very slack chain jumping the rear sprocket and smashing the chain case in the process. The chain was slack because the rear wheel moved forward due to the lack of those chain adjusters!!!.

In truth it is not catastrophic; I have a couple of used but serviceable chain covers somewhere in the shed. However, the back end now needs to be totally stripped partly to repair the damage and partly to tidy up and paint various parts. There is also the question of the ETZ250 s/arm. Though it has served its purpose, it is really very rusty and I am not sure it is worth spending time and effort shot blasting & powder coating plus welding on my carefully manufactured side stand bracket. I think it will be best to halt the project until I find a better s/arm. I now know that my modifications will all work so perhaps time to think about the cosmetics of the end product. Also whether the 4 spd engine has served its purpose and its time to fit the 5 spd unit. Another reason to pause is consideration of its long term future. Do I plan to keep it or is it going to be moved on.



The picture above shows the state of the ETZ250 s/arm. It also shows there is plenty of clearance for the big tyre although I doubt you can move the wheel all the way forward in the adjuster slots.

This picture shows the positioning of the side stand bracket. The jubilee clips are just to hold it in whilst getting the position just right. Eventually it will be welded but probably not to this particular s/arm unless I cannot find another. The rubber bands are also temporary, I have the proper spring which works fine but is a b****r to fit.

Overall, I think this bike will be much improved by the time I have finished and certainly more likely to get through an MoT. Whether it actually works any better – who knows possibly not. The good thing is I have not destroyed any of the original fittings so it can all be put back the way it was.

Sunday 8th March 2020

Back in the garage I am still working on the revised footrest arrangement for the trail bike. The TS250 footrest mounted on the engine plate brackets was a step in the right direction but has now been improved by using an ETZ125 footrest bar which is much flatter. This allows it to be mounted higher up without having your knees under your chin. I should now also be able to refit the bash plate if I need to. I have solved the rear brake pivot dilemma by machining the s/arm spindle. The end has been turned down to fit the internal diameter of the brake pivot and it is tapped 8mm for a fixing bolt. I made up a special stepped washer to hold it in place, This lined up well with the new footrest assembly. I believe I have also have a solution to the cable stop issue.

The bracket is a piece angle iron fixed at the engine end by the rear bolt of the timing cover. It is shaped to fit round the top of the s/arm trapped partly by the large washer and partly by the u-bolt. In fact the latter doubles as a security fixing for the large spindle nut as I did not have enough. space to include its lock nut. The u-bolt nuts are not done up very tight as the s/arm will move in use but very little. The large is not supposed to move and part of the function of the u-bolt is to stop it moving as well as supporting the bracket. I tapped an 8mm hole for the cable adjuster and you can see the result. I still need to reshape the end of the brake pedal and I may have to reinstate the brake light switch in the rear hub. Apart from that I think it's job done and the current s/arm is redundant provided the ETZ250 s/arm fits. There will remain the question of a side stand but I may well cheat on that in the short term and use a standard MZ rear spindle mounted sidestand.

My only reservation is what effect the MZ engine wobble might have on this bracket. Something to test.

Sunday 1st March 2020

With space in the workshop I brought back the Trail TS250 to experiment further with alternative footrests. I tried various permutations including the style used on the TS125s which did seem promising. However, in the end I settled for using the a set from a TS250 as they gave the best fit and only needed a small amount of welding. It ticks most of the boxes, the k/s will operate and it is well located with respect to the gear lever. The existing rear

brake will just about work but can be extended if need be. Yet to actually try it in earnest but good progress.

I have also acquired an ETZ250 s/arm, very rusty but appears sounds – enough for me to experiment with anyway. This was designed to take an 18" wheel (albeit with a 3.50 tyre) and if my replacement footrest bar works then I would like to use the ETZ s/arm in preference to the existing monstrosity. This will mean adding a side stand bracket and providing an alternate mounting for the rear brake pivot and the cable stop. Not insurmountable but the latter certainly requires inspiration. In an ideal world I would also like to bend up a complete new footrest bar based on the TS250 style but with less height so it can be mounted above the bash plate brackets and with a little more clearance for the k/s. As they say, watch this space.

Thursday 27th February 2020

Last night pondering on the Supa5 trail bike I had an idea which I checked out this morning. The epiphany was to use an ES250 Trophy footrest bar fitted to the brackets prev owner had welded to the engine plates for the bash plate. These are very robust, equally as strong as the original MZ footrest bracket and as the pictures show they get the footrest closer to its original position and more to the point not on the s/arm. I am doubtful about this on grounds of comfort and legality. The LH side will need a folding footrest too clear the k/s but it should be possible to use a standard gear lever. On the RH side the rear brake pivot can

probably stay on the s/arm but the lever will need extending a few inches. I am consulting with John May about this as he has a lot of experience modifying frames both MZ and BMW. The idea is a long way from being a done deal but it has promise. I have also received a new 21" inner tube to fix the slow puncture in the front wheel and the bike is now insure so just need to wait until 1st April to get it taxed and classed as historic.

Sunday 9th February 2020

On Friday I popped over to Bradford to pick up the Trail bike gear lever from Mick. Brilliant job as he used s/s rods. Fits fine and works very well even on the stiff 4spd box. I got the V5 for the bike on Saturday and have emailed my insurers to get it added to the policy. Not

really planning to do any more to it until 1st April when I can get it registered as an Historic vehicle which makes it MoT exempt and tax free.

Tuesday 4th February 2020

This morning I fitted the Pirelli MT43 front tyre as it is a much better match to the Michelin on the rear. Not without problems though. I had trouble getting the tyre clamp to release and think I must have pinched the tube in the process. . When I tried to inflate the newly fitted tyre air leaked out everywhere so it all had to come off to find and fix the puncture. I have not bothered to fit the tyre clamps as I shall never be running it at the sort of pressures that require this item. This bike was built for trials riding where pressures of 5-10psi are normal. I plan to use about 18-20 in the front and 20-25 in the rear even for off road stuff.

While the wheel was out I replaced the leaky fork seal in the RH leg though I am not convinced there was anything wrong with the old one which was a good quality double lipped type. In fact I fitted an identical type as replacement. I don't have any fork oil at the moment so I reused the old oil. I measured it at 150cc so will need to add another 70cc in due course. Waiting to see if it leaks first though. I was going to order a 7mm bolt for the Powerdynamo rotor but the cheapest I could find on the internet was £2.45 with postage. So I made one by cutting down a dynamo rotor bolt, threading the other end 8mm and welding on a 13mm nut. Not pretty but it means I can now use the slimmed cover which hides it anyway.

I was then able to get if off the bike lift and wheel it outside. The engine started easily and I have a full set of working electrics plus two methods to kill the engine, a key under the seat and a button on the handlebars. The modified gear lever seems to be ok though right now one of the temporary bolts catches the kickstarter on full travel. This should be fine when it is welded up and the bolts removed. Worst case is I have to bend the lever inwards a little to clear. So this phase of the project is pretty much completed. I need to fit drain pipe tubes under the carrier, one for an oil bottle, the other for a tool kit. Plus I am sure a few more (hopefully minor) issues will arise once I can ride the bike. The next phase will primarily be to smarten it all up which may involve a total strip down to do it properly plus fitting a 5 spd engine. The 4spd engine currently fitted has done its job and I was impressed how quiet it was mechanically. It is a hybrid as it is fitted with a Supa5 crank the conversion for which was documented a couple of years ago in an earlier blogg. The conversion itself worked fine but the gearbox was very noisy so I put it aside but it has proved jolly useful for this project. Curiously, I found out later that what I had done was exactly how MZ built the /1 engines. Direct oil feed from the gearbox which required a modified crank, only came with the /2 models. I discovered that the bearing and oil seal sizes I worked out are identical to the ones in the /1 spares book so I was not quite as inventive as I first thought.


MZ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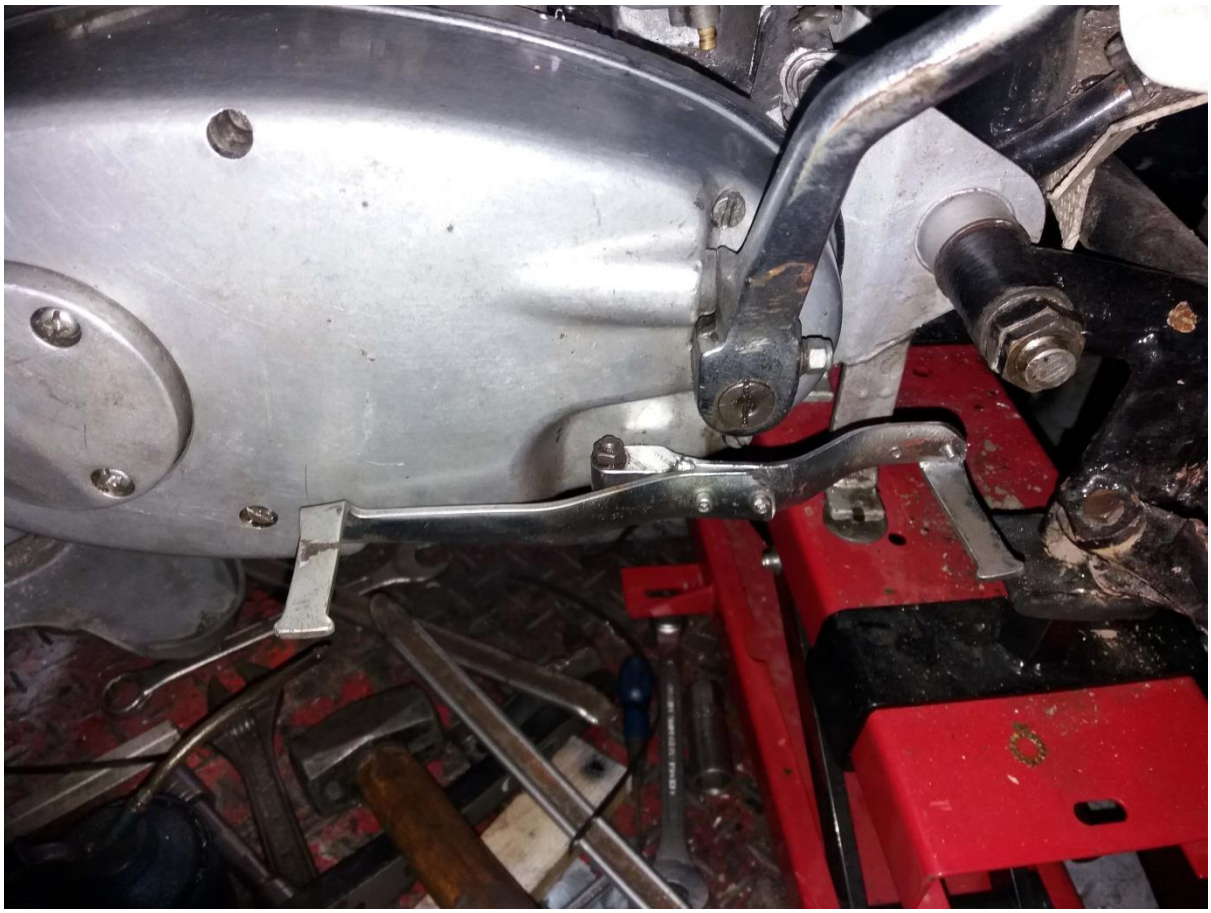
Monday 3rd February 2020

Later I resumed work on the gearchange of the trail bike and I think I have a working solution as shown in the picture. Basically I have created a rocking pedal lever so that you can press down at the front to change down and down at the rear to change up. The rear part is tucked well in so that it clears the kickstarter. I opted for this solution because any sort of conventional single lever would have been very short making it very stiff for upward changes. This way I can exert a lot of pressure without hurting my toes. At present it is all bolted together while I fine tune the positioning. Eventually it will all be welded up. I spoke to my friend Mick about the job as I ws not sure if you could weld on top of chrome. You can't unless you use s/s rods and he has offered to do the job for me.



Sunday 2nd February 2020

Having pondered the question of rear tyre, in the end I took the pragmatic approach and fitted the Michelin Competition tyre. It may not be the long term solution but at least I now know that a 4.00 x 18" tyre will fit and the bike can now be ridden for test purposes. I will keep looking out for suitable tyres, a 3.50 x 18 with enduro type tread would be preferable to give a bit more clearance – see picture below:.

I will now have to change the front tyre to the MT43 as it has a better match of tread pattern to the Michelin rear.

Next battle is the gearchange and I have a cunning plan.

Saturday 1st February 2020

. I should have known that things were going too well. I fitted the 18" rear wheel today and immediately hit a snag. The tyre is too wide and fouls the chain rubber. Though notionally a 4.00 x 18 it is actually nearer 5" wide as there are pronounced studs on the sides; doubtless to provide fantastic grip in sand and mud. The really annoying part is that if the swinging arm had not been extended the tyre would have been a couple of inches further forward and not fouled. I really don't know why the previous owner felt it necessary to extend the s/arm as there is enough room to fit an 18" tyre. I have done it in the past and so has Graham White. The centre stand is a problem but can be easily resolved. I toyed with the idea of sourcing a standard s/arm but then I have no footrests and no rear brake lever so a major job and not one I want to tackle yet if at all.

So for now I now need to replace the rear tyre and first port of call was the shed where the spares tyres that came with the bike are stored. These turned out to be a Pirelli 2.75 by 21" MT43 front tyre which is probably the optimum choice for mixed riding – and it looks brand new. The other tyre is a Michelin 4.00 by 18" Trials Competition, very similar tread pattern to the MT43 but equally it is stamped 'for off road use only in USA & Canada' – not encouraging. Research on the internet suggests that this tyre is legal for road use in the UK

but only for short duration journeys – but noindication of what this means in time distance or speed. Mine is stamped MST which stands for Multi Surface Tread which appears to make it road legal. The good thing is that this tyre is 15mm narrower at the critical point than the MT21 and should clear the chain guides easily. Although not new it is little worn and in good condition.

I am now in a dilemma. Use the Michelin or try and source something like an MT43. But if I go down this route, I will need to get my hands on one to check the width. Best to sleep on it.

Friday 31st January 2020

I went to see John May this morning. He is now able to walk short distances using crutches which is big improvement since my last visit. We had a long chat mostly about the trail bike project. He has built a number of BMW and MZ specials and is a useful person to bounce ideas off. We had a long chat about tyres – he has a lot of experience of off-road riding and MCC type events and recommended Pirelli MT43 as being a good solution. I have a feeling that the spare tyres which came with the bike could be MT43's but they are in a shed at the far end of the garden so not easy to check right now. The tyres currently fitted, which I thought were dedicated trials tyres turn out to be Pirelli MT21 Rallymasters which are actually road legal so maybe I don't need to make tyres a priority issue.

This afternoon I tackled a couple of small but time consuming jobs. The regulator is now rubber mounted. While I was working in that area, I tidied up some of the wiring and fitted the LH side panel. The stop light switch also has a proper mounting rather than flopping around on a cable tie.

Thursday 30th January 2020

After lunch I fitted the petrol tank to the trail bike. This is a modified TS125 type and though fine for a trials bike is perhaps a bit small for a 250 if longer journeys are planned. I tried offering up a Supa5 tank but the front mountings are now in the wrong place. I think it will be possible to make a second set of front mountings allowing both types of tank to be fitted but that is a job for another day.

Next job was to fit the Powerdynamo regulator and capacitor and connect the wiring loom. I have fitted the former under the seat but I am not overly happy with its location and ideally it should be rubber mounted. This will be tackled later as part of a general tidy up of the wiring system. The aim of all this work was to be able to run the engine. So with ½ gallon of premix in the tank I tried kicking it over. Nothing at all to start with so in the end I fitted a new plug. Still no joy so I then tried kicking the bike over with the throttle wide open on the basis it was probably flooded. Sure enough it soon started to cough and finally burst into life with the usual clouds of blue smoke. The lights came on so it seems we have a runner, always a great relief.

Apart from tidying the wiring and making a proper mounting for the regulator there is at least one outstanding issue. I found that my foot connected with the gear lever in what is supposed to be its running position. I have removed it altogether for now. The MZ gear

change requires quite a lot of pressure especially the 4 spd version. Changing down is ok as you are pushing downwards. Changing up means lifting the lever and can be painful on the toes after a while. The short lever necessitated by the repositioned footrest is not going to help and may need to work in reverse (down for up instead of down for down). The previous owner clearly solved this problem; hopefully so shall I. The other thing is to fit the 18" back wheel. In theory this should be straightforward but…

Wednesday 29th January 2020

Playtime with the trail bike was limited today due to other chores. However, I have solved two of the outstanding problems. The first was the chain tubes and the picture probably says it all. I have cut up 3 original tubes and mixed/matched them to create two longer tubes joined at the moment by a piece of plastic. I have left it white for now to show the join more clearly. I will paint them black later. In fact the chain keeps the rubbers quite rigid so their primary purpose is to keep the water out. To quote the Repair Shop's favourite saying 'pleased with that'.

The other job was to make up a new rear brake cable better suited to the torque arm now this has been moved back to its original lower position. I found a suitable donor cable in the shape of an old Honda front brake cable. This is a heavy duty design and one end is threaded 6mm which provides an adjuster at the hub end. I have also replaced the stop bracket as the old one was set to the wrong angle and was rather a long way back. Another job done.

Two other small jobs to finish the day. The front driving lights have been removed for now mainly because the new speedo gets in the way of the LH one. I doubt I will ever refit them but they are in the box of 'spares' just in case. I have also drained the petrol from the tank. It was clearly very old and a dark brown colour, not sure even the lawn mower could cope with this. Pleasingly very little muck was evident in the filter and there is no sign of rust inside the tank. I dismantled the tap but this was also very clean. So the way is clear to fit the tank, fill it with fresh fuel and try to run the engine.

Tuesday 28th January 2020

Things are progressing well with the trail bike project. I did briefly offer up the ETZ150 motor and I think it would fit but needs is own rear engine mounts which involves stripping out the swinging arm. I have parked this idea for now.

Instead I have fitted a TS250 4spd motor. Not the long term motor I propose to use but it was already in the garage and is fitted with the earlier type cylinder head which I hoped might be easier to shape round the hi-level exhaust. Indeed this proved to be the case as I only had to trim back 3 fins to give clearance and the system is now in place. Still not convinced I will stick with it long term but it is one aspect resolved.

Next step was to fit the Powerdynamo system and make sure it is working. This hit the blocks temporarily as some of the fixing screws were missing. A search of my nuts & bolts box found suitable countersunk head 5mm screws to fix the stator – they were even the right length. The bolt to fix the rotor was more difficult as it's 7mm – not a common size. I have got round the problem for now by using the bolt that holds the MZ dynamo rotor with a long spacer but as you can see from the picture, it sticks out too far. A better solution will emerge in due course. With the coil fixed in place and wired up, we had sparks so all looking good. I was hoping to find a 17t gearbox sprocket but the smallest I could locate was an 18t. I will look further as I also need a shorter chain. The one that came with the bike is sized for a huge rear sprocket – could be cut down but I might regret that later. This took most of the morning and it is bitterly cold so I have retreated to the house to warm up and consider the next move.

A bit more progress this afternoon. I have found and fitted what seems to be a good usable carb. And I also found a speedo, cable and Supa5 type housing. However, when I came to fit the latter, it fouled the headlamp. So I have mounted it on top of the LH fork nut which strangely enough is how MZ fitted a speedo to the early ISDT bikes. The speedo itself looks very tired and I am not convinced it will work properly, even supposing it has the correct gearing. However, at this point it's more about getting the construction sorted, a suitable speedo should not be hard to find. A clutch cable came with the bike but it was a home-made job based on a bicycle cable. The spares box donated a correct cable so we now have a full set of controls. The red button is the ignition cutout (and it works!)

Whilst rummaging through the spares boxes I found two used but very serviceable Supa5 chain rubbers. As expected they are not long enough but I have a cunning plan to sort this which will be revealed if it works. Still lots to do; need to make a plan.

Monday 27th January 2020

Quite like old times tinkering on a new to me bike in the garage. Perhaps I should list the changes observed so far to a stock Supa5 to create this machine. In case I forget to say it later; in the main the mods are well thought out and executed even if not always to my taste. In no particular order:

Steering stops modified to increase steering lock which is why the tank (from a TS125) had been moved backwards and raised slightly. The frame has been modified to provide a new tank front mounting. The tank has new rear brackets locating into the original rear frame mounting. All still rubber mounted. I am not too sure about how it looks and may well review the way the tank is mounted.

Swinging arm has been lengthened to allow the fitting of an 18” wheel. The extension is to the flat part where the wheel is fixed, not the tubes.

The bracket that supports the rider’s footrest bar and the centre stand has been removed, indeed it seems like the part of the main frame which supported these

bits has also been removed as there is also no sign of the tube through which the rear brake pedal fitted, nor the pillion mountings.

The rider's footrests, the rear brake pivot and the side stand bracket are all welded to the front of the swinging arm. I am a bit concerned about how this will feel when riding the bike. See below about the chain tensioner. The rear brake is now cable operated.

The rear sub-frame has been shortened and raised to provide a support for the plastic rear mudguard and a neat carrier. The latter has square tubes as retainers for the GS style panniers seen in the picture below. However, there is no way that this mounting is strong enough to support the weight of two loaded panniers so they have already been consigned to the shed.

Front wheel is a standard TS hub laced to a 21" rim. It is currently wearing a supposedly road legal trials tyre. A neat bracket which doubles as a fork brace lifts the trials type mudguard clear of the tyre.

Rear wheel is a standard TS250 hub laced to an 18" rim. It is currently wearing a supposedly road legal trial tyre and like the front will most likely get changed for something more suitable for mixed usage. The sprocket carrier has been modified to take a larger alloy sprocket to give better trials gearing. However, this is too large to take the standard chain cover with its speedo drive. This negates one of the benefits of MZ design regarding chain protection and will be reverted to standard in due course. I will simply use a smaller gearbox sprocket to lower the gearing. It seems likely I will have to make extended rubber chains guides as the standard ones will not be long enough. Once that is done, the chain tensioner currently fitted will be redundant.

The rear brake plate is mounted upside down so that the torque arm is at the top. I was told this was to reduce the chances of it snagging in trials sections. Indeed the late MZ ISDT G5 bikes also used this idea but I am pretty sure they may have modified the cam to ensure a correct operating angle. Apparently it was not worth doing and though the brake works it is no better than ok! Whatever that means.

Extra brackets have been welded to the rear engine brackets to provide the rear mounting for the bash plate. The front fixes to the engine itself. The exhaust system is a mixture of bits from several sources and includes a piece of flex pipe. I have no idea if it will work or not. One downside and a possible the reason why I will junk it is that the head has to be cut back clear the pipe. We shall see.

The speedo is a simple digital bicycle type and despite a new battery is showing no signs of life. I have never been impressed with these and will most likely fit a standard speedo.

The original battery box and air box have both been removed and the air intake is a 2" piece of flexi hose with an after-market air cleaner screwed in.

The electrics are totally non-standard and at first sight the wiring does not inspire confidence. The original dip switch is now the lights on/off switch though the horn button is still operative. There are no indicators, instead the switch is used as a dip switch. Amazingly, once I had traced a broken earth wire, all the electrics worked; even the LED running lights. It is intended to be run without battery using a Powerdynamo kit which I have also bought. For testing I have temporarily wired in a 12v battery – this will be replaced by a capacitor later. The trials type headlight looks neat but not sure how effective it would be for night time use. I will review the wiring once I have an engine in place and the Powerdynamo system fitted.

As of close of play today, I have replaced the forks and front wheel and fitted a standard TS250 sprocket carrier assembly and a 16" rear wheel (only because it was lighter and easier to work with). The brake plate and torque are at the bottom and I have bodged the brake cable so we have a temporary rear brake solution. This needs to be revisited but at least the bike is on two wheels and mobile.

I now need to take stock and come up with a more detailed plan of action. This may include offering up the ETZ150 engine to see if it would fit. Not something I have seen or heard of and I may well shortly find out why.

Sunday 26th January 2020

Today I drove over to Newport to view and (of course) buy another MZ project. It was in the not too distant past a Trials/Enduro conversion of a 1979 Supa5. The engine is now in a Racer that Bill is building so the rolling chassis was up for grabs. Originally Rob Parker-Norman was going to buy it but he is in the throes of moving so passed the details over to me. I thought it looked promising and when we were able to do a deal including some of my surplus parts it became a bit of a no-brainer.

We had to dismantle it to get it in the back of my Berlingo (The Renault van is on SORN at present) and the rain poured down the whole while. Anyway it is now back in my garage and tomorrow I can start reassembly combined with a detailed examination of what mods have been done. The deal included a Powerdynamo system which will be useful.