Velocette MAC 350cc

Rebuild Project Part Three

From January 2020

This is the continuing story of progress and work done to my lovely little 1953 / 1954 Velocette 350cc MAC, in my third year of ownership. I discovered via the Velocette Owners Club 'Archives' that my MAC was first registered in 1953 and NOT in 1954 as per the Logbook. The VOC Records (I have a copy) of the original order number for my bike, together with details of which Dealership it was sold to and who the FIRST Owner was, and when it was registered for the very first time in 1953.
What I didn't realise when I purchased my MAC (way back in October 2017) was that there had been a 'Frame' change in 1954? I have no idea why the Frame was changed, but, as is usual practice, the registration follows the Frame and not the engine or rest of the components – therefore, the details on my MAC Logbook – lists it as a 1954 registered bike. So, I guess my bike (or rather, most of the components) was actually made in 1952 or thereabouts.

This Blog illustrates future trials & tribulations, repairs & rebuilds and otherwise modifications &/or improvements made in Year Three . . . onwards.
The Following Photos & Blog begin at the start of January 2020 onwards . . . Part Three of my MAC Blog Story. Please, Read-On . . .

I have now completed just over 3,000 miles on the MAC since I bought it in 2017 (Zero Miles on Clock). The Engine goes well & sounds Bldy Brilliant!**

The photos below illustrate the work I did on the MAC Forks in 2019 (from Last Year's Blog). I purchased New Fork Tubes for the Venom Re-Build and decided to 'Use' the old Venom Fork Tubes on the MAC (I had two sets of Venom Forks to choose from), so I cleaned-up & checked the best two old Venom Fork Legs (on my Lathe for 'straightness / concentricity') and was confident that they were 'Good-to Go' (onto the MAC). Also; I had to separate the bottom Fork Casting from the Bottom Slider Tube (due to oil leak) to re-solder said components back together again. I can now report that this repair was a major success (I am pleased to say), and the Forks *'NO LONGER LEAK!* = RESULT ✓ And . . . I once more have 'Damping' and it 'Steers' well too. These photos have been included, as a 'Starting Point' from where I 'Left Off' work Last Year. And . . . to report on the results of my 'Labours'.

Forks now refitted, tried and tested, and are working perfectly. As previously stated = RESULT! However . . . I do have a concern (not with the Forks) but with the Clutch. On a long run, I have experienced clutch slip. Not all of the time, and only on very steep up-hill sections of my journey. I have adjusted the Clutch on numerous occasions (EXACTLY to the Letter of the Velocette RED BOOK), but to no avail.
All is well when I set out on a journey (no sign of clutch slip) and it 'Rides' wonderfully . . . until I get to those pesky long hill-climbs, which then gets the better of my MAC Clutch. So, the only option open to me now, is to strip the clutch down again and investigate to see if I can find a reason for this mysterious clutch slipping problem. Upon my return from an extremely wet Ride the main Fuse blew and all power was lost? (Water ingress I guess?).

11th January 2020: I put the MAC on the hydraulic bike lift and set about dismantling said Clutch to see what I could find?

Photos 1 to 5 below show the Clutch being dismantled ready for inspection.

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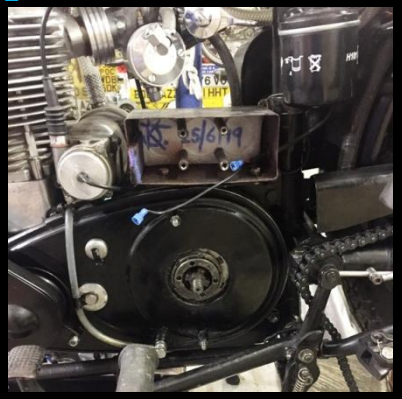

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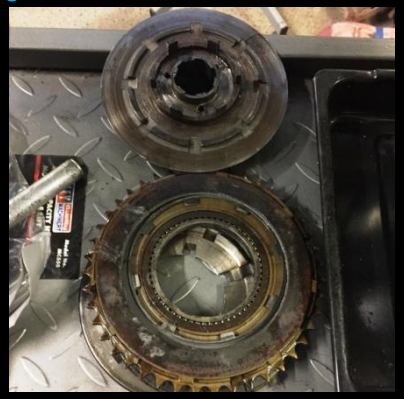

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Once dismantled and cleaned-off, it became apparent that one of the plain metal clutch plates had been catching & rubbing on part of the centre *Hub* of the Chain-wheel, and not allowing the friction plate to rest fully 'Home' under Spring pressure. The final prognosis was; the wrong thickness of friction plates & plain steel plates had been fitted or rather a combination of mismatched parts fitted in error. And . . . to *'compound matters even further'*, there was far-too-much 'Play' in the Chain-wheel Bearing which obviously added to the overall problems. I am surprised that it worked as well as it did under the circumstances.

Photos 6 & 7 (above) show me checking the outer & inner covers & plates. The other problem that was discovered was the top 'Tangs' (or Castellations) at the top of the Friction Plate showed evidence that it had also been catching somewhere (i.e. evidence of shinny metal on the tops of the tangs). Photos 8, 9 & 10 (above right) show the new Clutch Chain-wheel (including a New Bearing Assembly fitted, and two new Friction Plates. I couldn't get hold of a new plain steel plate, but managed to get a good second-hand 'serviceable' plate to replace the damaged one (I could have ordered a New Steel Plate from VOC but I am so impatient and literally – couldn't wait).

I managed to order these parts (see photo 8 above) from Nick Payton yesterday (Monday 13th January 2020) and they came today (Tuesday 14th January 2020). "Thank You Nick" for an amazing *First Class* service. If any *Fello-Velo-Owners* wants or needs parts urgently then I can Highly Recommend Nick Payton. He has always provided an incredibly reliable source of both parts and experienced advice and guidance whenever I have contacted him, and has always despatched – Next-Day-Service (obviously - providing he has the required parts in stock). I must stress here & now: I have no business or other links or financial benefit in Nick's company, except as a thoroughly satisfied paying customer.

16th January 2020: I decided to modify the second-hand plain steel plate that I bought the other day, by drilling the plate to replicate the one that I had just removed (using it as a 'Template' (see photos below). Followed by adding 'slots' into the plate (this mod is well documented in Fishtail & various Velo Tomes) and is intended to reduce the risk of these steel clutch plates from 'buckling or distorting' when they get hot. Well that's what I have read . . .





The photo below left shows the Clutch Back Plate (Velo part No. KC1 / 25) in the Jaws of my Lathe, having a quick clean-up on the outer edge of the Back Plate. Once these unwanted marks had been removed from the Back Plate I then cleaned-up the whole of the Clutch and assembled it together (holding all of the Plates together with Elastic Bands) ready for re-fitting it all back onto the Gearbox Sleeve Gear (Velo part No. B6 /2AS). And then re-assemble the rest of the Clutch mechanism and other Primary Chaincase parts together again. Third photo below shows the 'pre-greased' new improved VOC Clutch Thrust Roller Bearing.

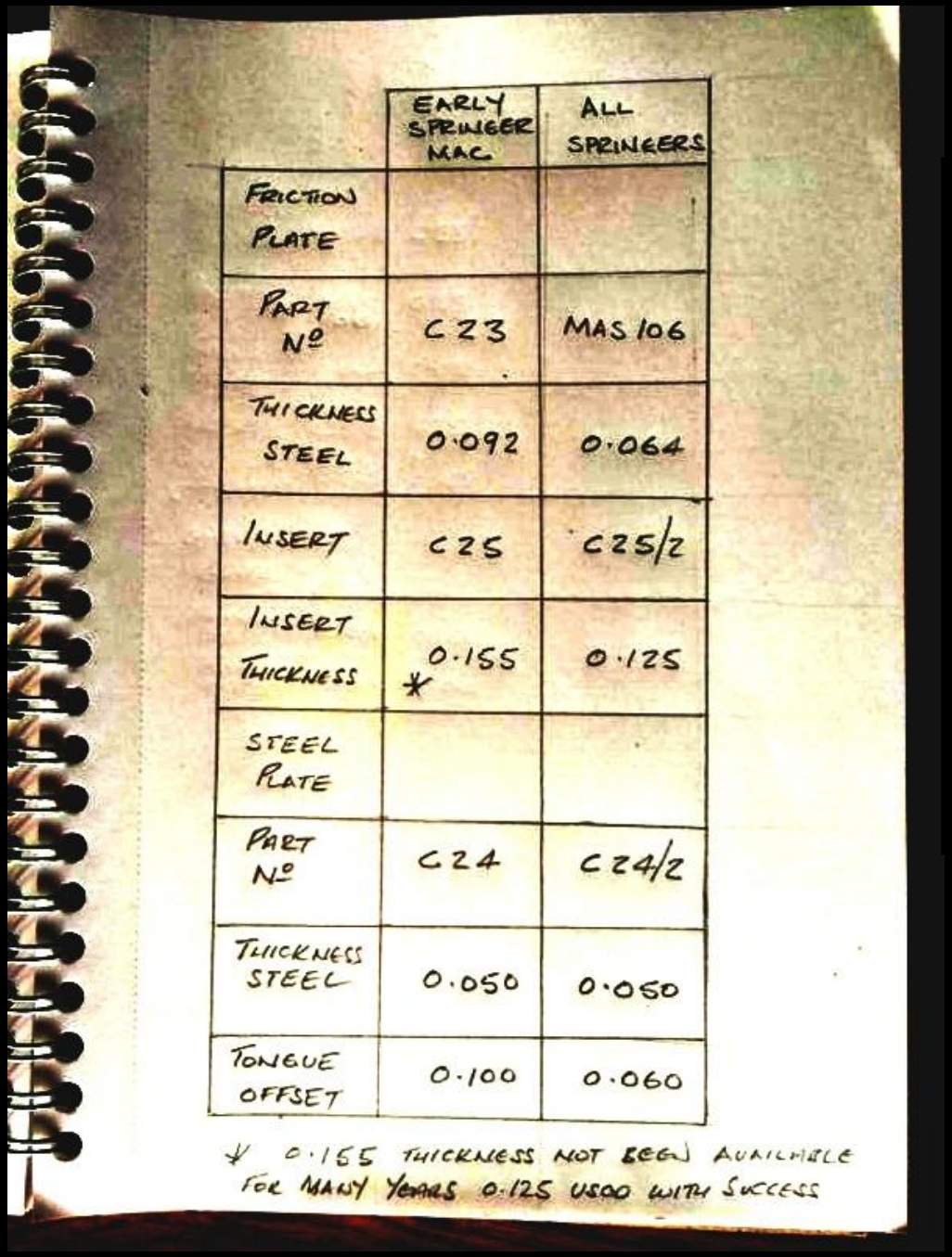


Photo below shows the 16 Clutch Springs (checked for length & straightness) and ready for reassembly.


2nd Photo (left) is my method of bringing the primary chain 'together', in order to engage the chain 'Split Link' (the use of Lock Wire). And obviously (3rd photo left) I also 'Lock-Wire' the split link together.

Photo Right: My Mac is almost re-assembled again.

I can't wait to get my MAC back on the road again and this time . . . I am optimistically confident that ALL of my Clutch Slipping Problems will be resolved.



	EARLY SPRINGER MAC	ALL SPRINGERS
FRICTION PLATE		
PART Nº	C23	MAS 106
THICKNESS STEEL	0·092	0·064
INSERT	C25	C25/2
INSERT THICKNESS	0·155 *	0·125
STEEL PLATE		
PART Nº	C24	C24/2
THICKNESS STEEL	0·050	0·050
TONGUE OFFSET	0·100	0·060

* 0·155 THICKNESS NOT REGD AVAILABLE FOR MANY YEARS 0·125 USED WITH SUCCESS

This chart was drawn up by my good friend & Velo Mentor Rick Essex to help me identify 'Various' clutch parts and dimensions.
It may also be of great interest & help to other MAC Builders.

Using this reference chart, it became evident that I had inadvertently assembled the Clutch using 'mismatched' Plates.

The word 'Numpty' comes to mind (and I know those who read this may have a few other 'choice' words to describe me and my blunder!).
Reminder to self: "I really must pay more attention to detail in the future".

I'm hoping that it was this combination of said mismatched clutch plates that was the likely cause of my 'Clutch Slipping' problems (Fingers Crossed . . . I certainly hope so).

This whole MAC 'Journey' has been one great big (& Long) Learning Curve – right from Day One.

Don't you just Love Velocettes?

All will be revealed, upon my next MAC journey.

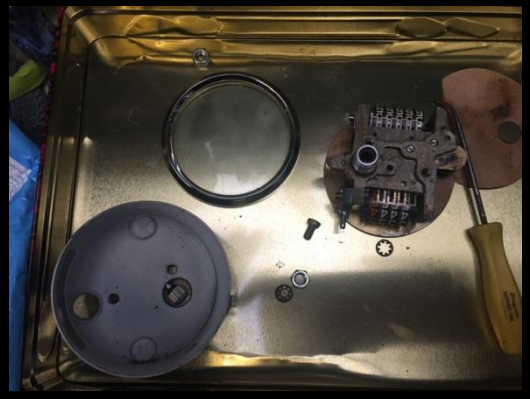
26th January 2020:

I Rode over to the Three Counties Show Ground on the MAC, to attend the Classic Car & Motorcycle Auto Jumble. The Weather: Well! It *Pizzisted-down* BIG Time. To say that both MAC & I got wet is one hell-of-an-understatement. However . . . I am pleased to say "MY clutch now works absolutely Fine – Just as it should do"! Even in such diabolically wet weather. Did I mention "It Rained"? The BIG News then is that; 'Finally' my MAC Clutch has been FIXED.
On a negative note: upon my return home, the main battery Fuse failed? (yet again?), so that's my next challenge.

Oh! Did I mention "I've sorted my Clutch"?

I've included the above two photos, because I LOVE my little MAC to bits. As you can tell, I was the very last person to leave the Car Park at the 3 Counties SG.

The next job that I tackled was the MAC Speedo. It stopped working last year, so I removed it and fitted my Venom Speedo as an interim measure (see the 1st photo below left); The Venom Speedo is capable of registering +*120 mph* (very optimistic I know) but at least it worked out okay. Whereas the MAC Speedo only goes up to 85 mph (which I think is still mighty optimistic). The GOOD NEWS is = The Speedo now works, or rather shows what speed the MAC is doing. The BAD NEWS is = the Odometer doesn't actually work anymore. So, it is still in need of attention (tested 2nd February 2020 . . . Bummer!)



On the last couple of 'Ride-outs' the weather has been atrocious – RAIN, RAIN and even more Rain!!! And . . . unfortunately for me, the MAC has developed an electrical fault? On both journeys, upon return home –Soaking Wet – both bike & me, as I turned the Lights 'off', the main Fuse *'Blew'!* I'm guessing this is due to water entering the headlight unit and shorting out the Light Switch (maybe). Or shorting out the Dipper Switch that I fitted? It's not like I haven't ridden the MAC in the pouring Rain before. In fact, I've ridden Loads of times in the pouring-down-rainstorms that frequent our lovely UK. But now it has developed an electrical fault?

In response to this latest challenge: I have decided to fit two new Fuses into my electrical wiring system, in order to isolate the 'Lighting System' with its own Fuse. Then, isolate the Ignition system with its own Fuse. The original Main Fuse (that goes directly to the *'Live'* side of the Burlen 6 volt Battery) will remain in place as before. The thinking behind this latest electrical modification is to help *identify* which part of the electrical circuit is the *'Culprit'* (by a process of elimination). In other words . . . next time I go out for a ride (especially in the rain) and a fuse blows, it should indicate which part of the system is affected.

Well! As usual . . . that's the plan.

Photos 1 & 2 show the Air Horn (driven by a compressor, via a 'Fused; Relay). Photo 3 shows the Air Horn Trumpet, & photo 4 shows my new pair of Tyres.

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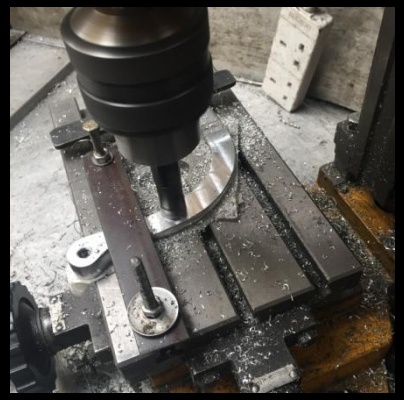
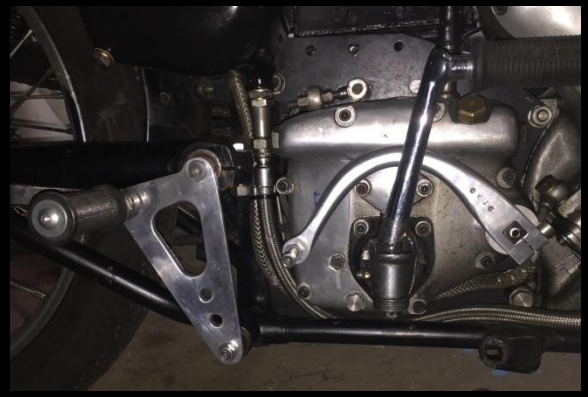
After many weeks of Covid Lockdown . . . which I have spent most of my 'Self-Isolating / Lockdown' time working on the Venom rebuild (go see the Venom progress by 'Clicking' onto the Venom Link on the home page). So, the latest work done on the Venom has found its way onto the MAC. I decided to 'Try-out' the new Rear Set Rest Footrests (that I've made for the Venom) on the MAC. But before actually using them . . . I had to make a new Gear Change Lever – to go with the new Rear sets. I made the Lever out of a flat sheet of 13mm thick Dural plate. I made a cardboard template and then transposed the shape to the Dural plate. Hand-cut and shaped, milled and drilled, turned a few things and finally (after removing the original footrests and gear change) I fitted the new parts.









After fitting the new Rear-Set Footrests and gear change mechanism, I took the MAC out for a good test ride.

After 133 miles I decided I liked the riding position BUT . . . the single seat was now very uncomfortable.

So, my conclusion was to try out another Seat. The seat (see photo below) shows the Venom Seat fitted to the MAC. I must admit it does look 'Right' to have this Seat fitted.

As well as the above work, I decided to remove the Air Horn (& compressor) that I fitted a while back. And decided to re-fit a neat & tidy, little 6 volt electric Horn. It's feeble, but at least it doesn't drain the battery every time I press the Horn. Yes I know, it was a bit ambitious of me, or even a bit naïve some would say (for a six volt battery system) but I just had to give it a try.

Another Mod includes re-fitting the Venom Speedo (for the second time) so that I once more can see how many miles I'm doing.

Photo Left: shows my New '*RamAir*' Foam Filter (as donated by my good friend and Velo Mentor Rick Essex). Thank You RE.

31st August 2020: I've finally got around to finishing-off the end of each footrest with an aluminium-turned-boss. Each one is now held in place by a stainless steel cap head bolt (countersunk into the aluminium boss), including the new (amended / redesigned) gear change lever. I decided to make three 'Fixed' footrests (rather than the usual 'Folding Footrests'). The only folding footrest now is on the front off-side (to clear the Kickstart Lever).

Photo below: as can be seen . . . I've finally put the gold stripe onto the MAC Tank. So it's looking a lot more Velocettified than ever.

The only thing missing now (to complete my lovely MAC 'Rebuild') is to put the Velocette name on the Petrol Tank.
Since I purchased this 350cc MAC in October 2017 I have completed just over 6,000 miles and it's still going strong.

RESULT ✓

2nd September 2020: Final Note.

Please feel free to re-visit this Blog page to see any further modifications and improvements. However, I think that I have finally managed to get this lovely 1953 built 350cc MAC to 'Exactly' where I want it to be in terms of 'The Look' and 'The Feel', and 'The Quality of Rebuild'.
The WHOLE EXPERIENCE & Journey has been truly well worth all of the effort and cost in terms of time, money and massive *Learning Curve.*

So apart from regular servicing & maintenance work (to be carried out at 500 mile intervals) and changing the consumables; such as tyres, bulbs, spark plugs, occasional cables, oil & filters, etc. etc. it's pretty much now 'Complete'. I am still Really, Really, Really Pleased and very much Enjoying riding this great little Velocette MAC around our Great British countryside.

The FINAL SPEND . . . to date (2nd September 2020) equals a TOTAL of £8,621.57 That is; £4,500 purchase price. Plus a TOTAL of £4,121.57 spent on Parts, Materials and Reconditioning Costs, and all of the consumables used so far. THAT ALL EQUATES TO: a Very Happy £1.44 per mile (covered so far). Now I reckon that equates to Bldy Good Value for money (£8,621.57 divided by 6,000 miles = £1.4369 pence). I've Loved Every Minute of the Rebuild & Riding ✓✓ (ok! I must admit, the figures quoted above do not include the main consumable used in all of this mileage covered, i.e. Petrol. Approx £400 used so far). But you must surely agree . . . This is STILL Great Value Motorcycling. And, still many more miles to do and pleasurable motorcycling to be had . . .**

I hope You have enjoyed reading about and seeing how my MAC Project has progressed from purchase to final rebuild-state (to date) as much as I have enjoyed doing all of the work and in the compiling (and telling) of my MAC odyssey. Loadz More Smiles'n'Miles to come ✓✓ (God & Covid willing).

Year One: October 2017.

Year Two: January 2020.

Year Three: September 2020.

The 'LOOK' hasn't changed that much, but the bike has been totally changed in character during the COMPLETE nut & bolt, from the ground-up FULL rebuild. Click onto the MAC photo-links above to go back to the 'My Projects' home page, where you can see how the Venom rebuild is progressing (& other projects).

This MAC Blog was last updated on 2nd September 2020

http://www.wyjc.co.uk/bikes.htm