

A Labour of Love

The refurbishment of a 1973 long wheel base BMW R75/5

Why I carried out this project and how I did it

Like many of us, I started riding motorcycles at an early age, passing my test on a 200cc LE Velocette in 1957.

I rode this delightful little bike to and from college for a couple of years and then bought a 1936 MKII KSS Velocette for the princely sum of £12.10s! This I rode to work for a couple of years until I met a girlfriend who did not like bikes – so I sold the Velo (wish I hadn't) and bought a car.

A few years passed so did various girl friends and one day on the way to work I saw a BMW R60 (1959) lying forlornly in some one's front garden with a for sale notice. On the way home I stopped and after a haggle bought this bike.

It started me in BMW restoration work as the main bearings were finished. To cut a long story short, I totally rebuilt this bike from the crank up and it ran like a sewing machine for the 5 years I owned it. I had fitted it with an Avon fairing and Craven panniers.



My next bike was a 1973 BMW R75/5 with only 19,000 miles on the clock and after I fitted an Avon fairing and Craven panniers I toured this bike around France for holidays and locally in the UK.



This bike really took my fancy but work and marriage regrettably forced a sale, but I vowed to get another one!

Well, I did eventually get another R75/5, the subject of most of this article, but this one came much later (2010) after I had run several BMWs ranging from R80RT (2), R1100RT, R1150RT, R1100R, R1200RT, R1200GS and currently sharing the garage with the R75/5, a one year old R1200GS Adventure.

As I said, I really was hankering for another R75/5 so started looking two years ago. I trawled the Journal, online websites, Ebay etc etc., and looked at six but turned down all of them for various reasons until I finally tracked one down in Devon. The photos looked fine and the owner's description read well.

He had bought it from the first owner in 1996 (who had laid it up since 1982) – it showed 7672 miles on the speedometer.

He fettled it and replaced various parts, put it through an MOT and covered some 600-700 miles only as he was now working offshore on oil rigs and had no time to ride it. He tells me, on leave home, he would kick it over and occasionally start it and kept it like this until I bought it in October 2010.

I hooked up my trailer and drove to Devon and collected the bike and various bits and pieces which all old bikes seem to accrue. He started it up briefly (he said he had changed the oil but not the filter). Both tyres were flat – bit of a job pushing it on to the trailer!

Once home, I unloaded my exciting project, ran the engine briefly again and then wheeled it up on to my hydraulic lift to carry out the refurbishment.



I had some uncertainty about what this last owner had actually carried out as I was starting to find odd things done to the bike – nothing terminal but just not correct. I therefore decided to carry out

a complete check of all components as far as I could with out dismantling the engine, which appeared to run well.

You will recall that we suffered the coldest winter for many years from December 2010 – March 2011 so working in the garage was not pleasant. I fitted some second hand carpet over the concrete floor, bought a gas fan driven space heater and wore extra jumpers under my overalls! Work progressed slowly as it was cold!

The Dismantling Work Starts

Petrol Tank

This was removed and was in excellent condition. I emptied it and removed the leaking filler cap, replacing the sprung loaded gasket. The taps had been replaced with new type one.

The Seat

The seat came off next, also in excellent condition so it too was carefully wrapped and stored away. (There is a tool kit and pump).

Exhaust System

This had all been replaced in stainless steel and after removing it, I gave it all a good polish and put it away in storage. It is interesting to note that all through the work I had no problems with undoing any fastening!



Rear Brake Lever

Next I removed the rear brake lever complete with rod and stop switch, cleaned them all and put them in the storage box after painting the rod in silver paint.



This photo shows various items removed around this time – front and rear foot rests etc.



Carburetors and Airbox

These were removed and the breather pipe was seen to be incorrectly routed – not going through it's designated hole in the RH airbox casting!



Photo below show correct route for breather pipe from crank reed valve.



I left work on the carbs until I was ready to refit them so they were put in the storage box (I had a large box!)



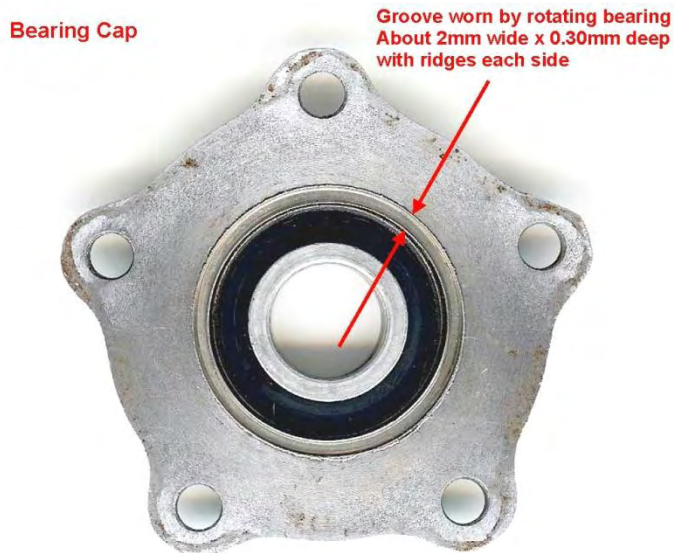
Starter Motor and Cover

Both were removed and as the starter had been a new replacement by the previous owner and worked well, I cleaned up the outside and packed it away in the storage box. The cover I cleaned and polished myself as it has the two BMW R75/5 side emblems stuck on and I was worried vapour blasting might damage these. I had located a person locally who carried out the vapour blasting and I must say it is very soft on alloy and does not affect even small moulding marks and numbers. This system uses micro glass balls propelled through a gun by high pressure water and air – all done in a tank with the operator wearing gloves!

Rear wheel

Whilst looking around the bike I had discovered play in the rear wheel bearing and rear drive splines. Off came the rear wheel and all was revealed – the wheel bearing had been set up

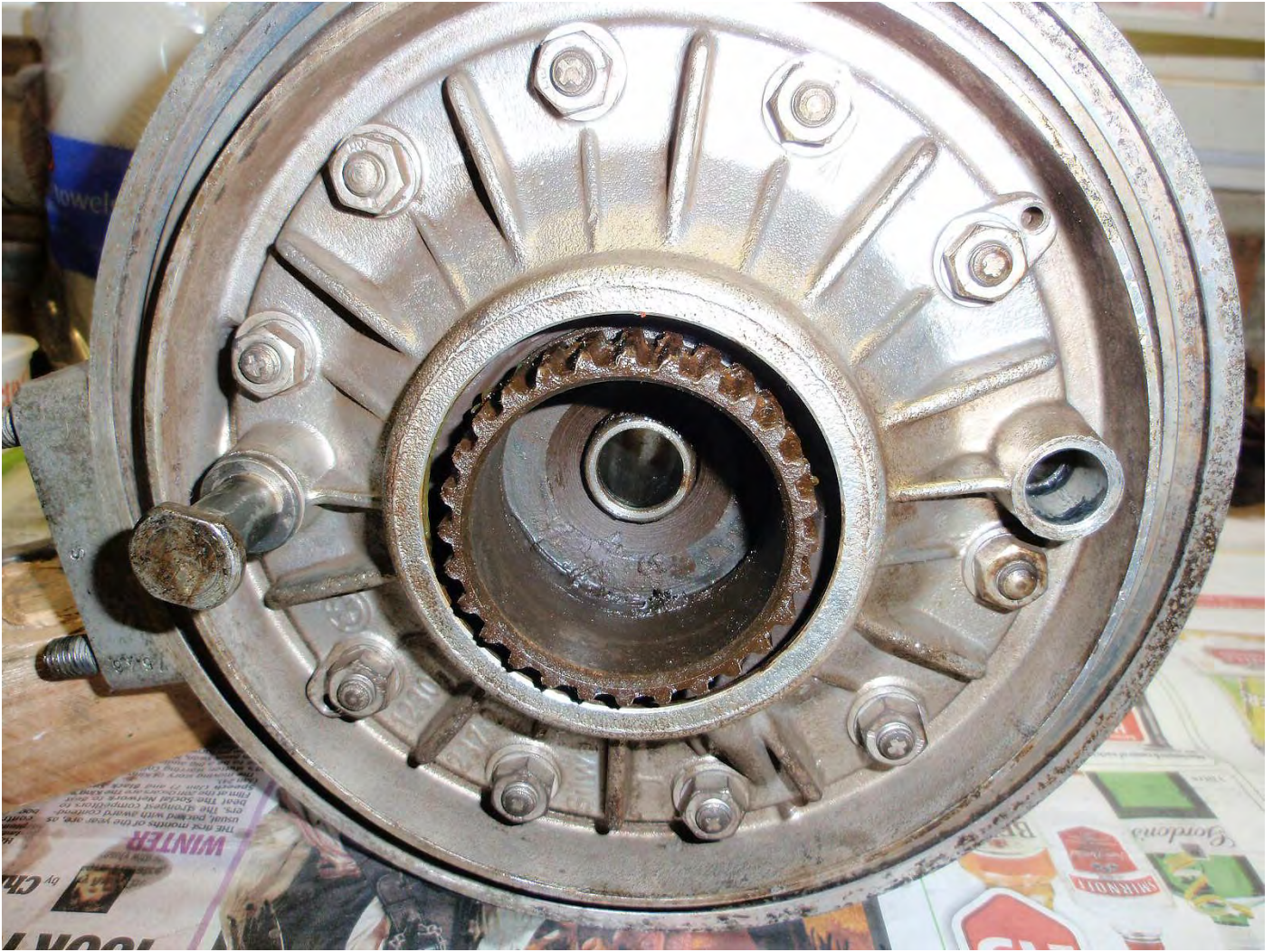
incorrectly and the outer race had been rubbing on the bearing cap, scoring a neat 2mm wide x 0.30mm deep groove.



New bearing cap and bearings were ordered.

Rear Bevel Drive

The bevel drive was removed (badly worn splines for the rear wheel drive – a not uncommon problem with the /5 model) and sent to Motobins for rebuilding and vapour blasting. Steve Scrimminger actually does their work and I had a good chat with him on the telephone and he assured me all the bearings were fine and he would replace all seals and gaskets and set the drive unit up correctly.



I had also decided to have both wheels rebuilt with stainless steel spokes and vapour blast the rims and hubs. I had located a local wheel rebuilder and took him the wheel after replacing the rear wheel bearings, correctly set up by Bob Tucker of Tab Bikes. Bob had a box of various “wedding rings” – the spacer needed to set the correct pre-load on the bearings. It took two attempts to get it right.

Frame and Swinging Arm

The removable rear frame had been powder coated so needed no work. The main frame and swinging arm however required repainting and I decided to use my usual method of spray painting in primer and gloss black.

This shows the rear of the main frame with 2 coats of primer.



This shows the 2 coats of black gloss applied and removable frame refitted



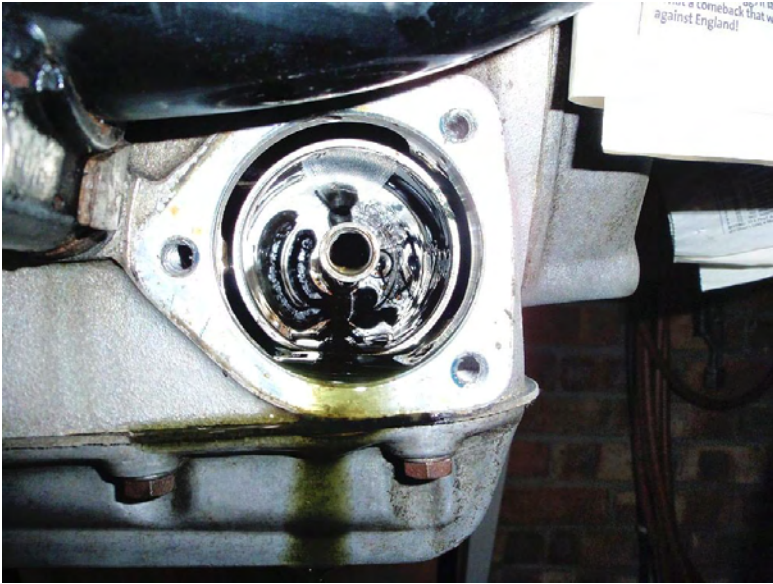
Sump and Oil Filter Removal

Despite the freezing weather I had progressed well and after a break over Christmas and New Year which continued in March because of the cold, I now continued with the sump and oil filter removal.

The joys of the hydraulic lift allows this sort of work and photo without a problem!



This photo shows how clean the inside of the engine turned out to be, thus bolstering my belief that the mileage is genuine! The oil filter came out without trouble. Here is the aperture minus the filter.



Wiring Loom under tank

I needed to straighten up a little after the sump work, so decided to check and clean the wiring loom – that mass of wires usually hidden by the tank! I am not an electrical wizard but will tackle what needs to be done. Luckily, before any dismantling I had checked that all the electrics and switches worked – they did!

So all this needed was a good clean – I did take it all out of the harness guide and clean all wires.



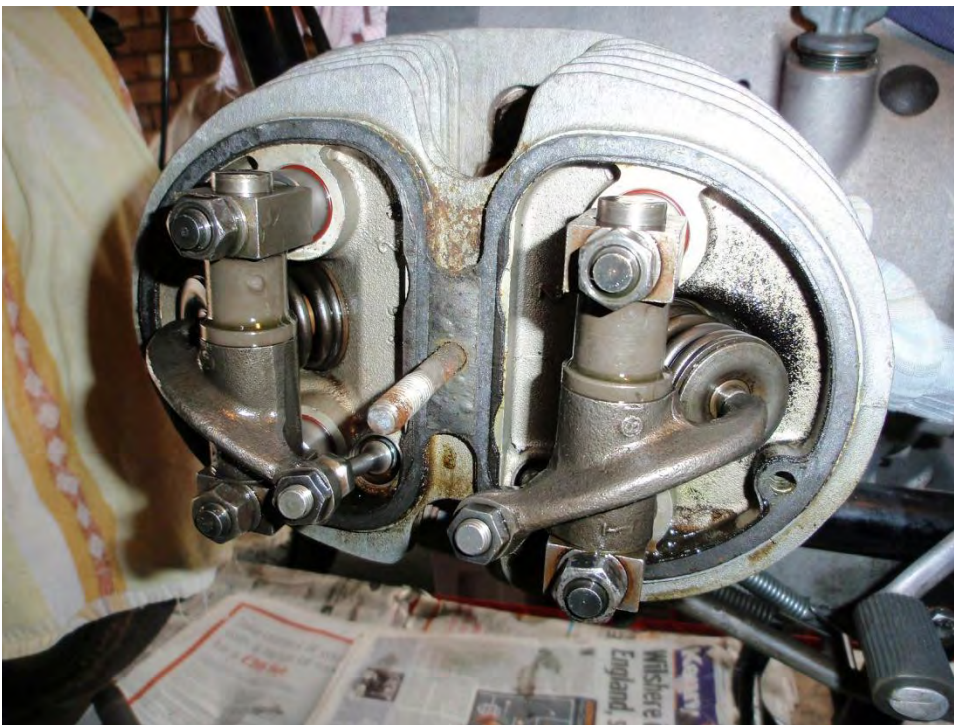
After the clean – all gleaming!



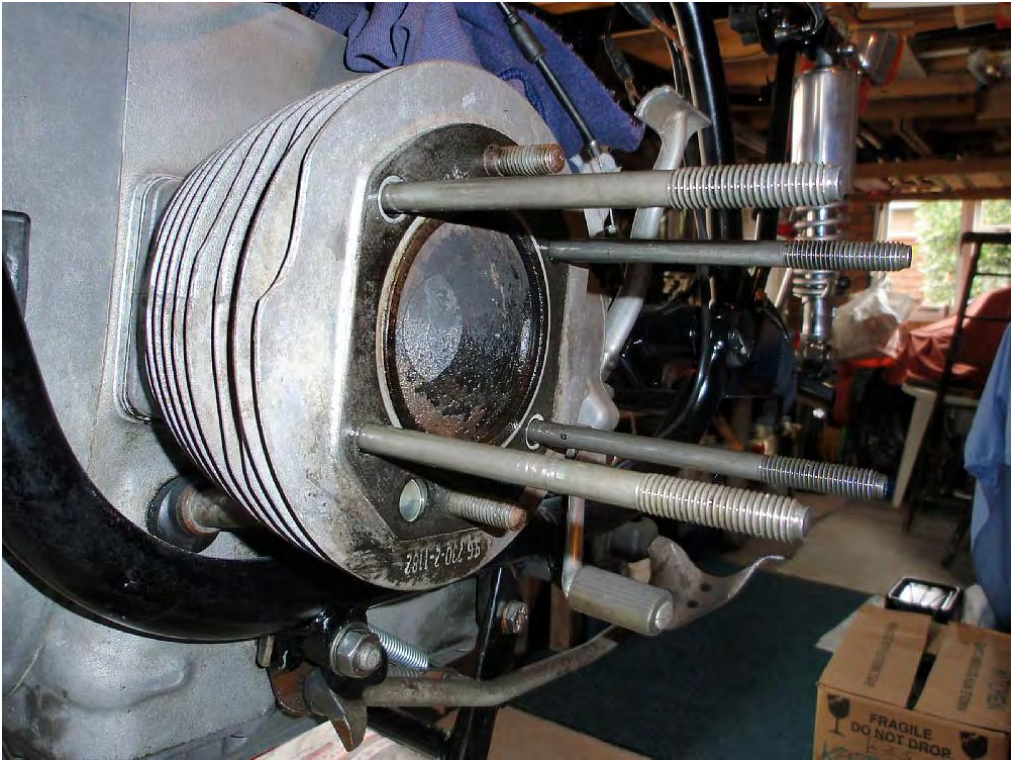
Head and Barrel Removal

Now I was into the mechanical stuff which I prefer. The boxer engine is easy to work on here as it all sticks out conveniently and on the lift it is about chest height. Both LH & RH components came off easily and were carefully placed in convenient Tesco Ready Meal plastic trays!

This is the Left Hand head before removal.



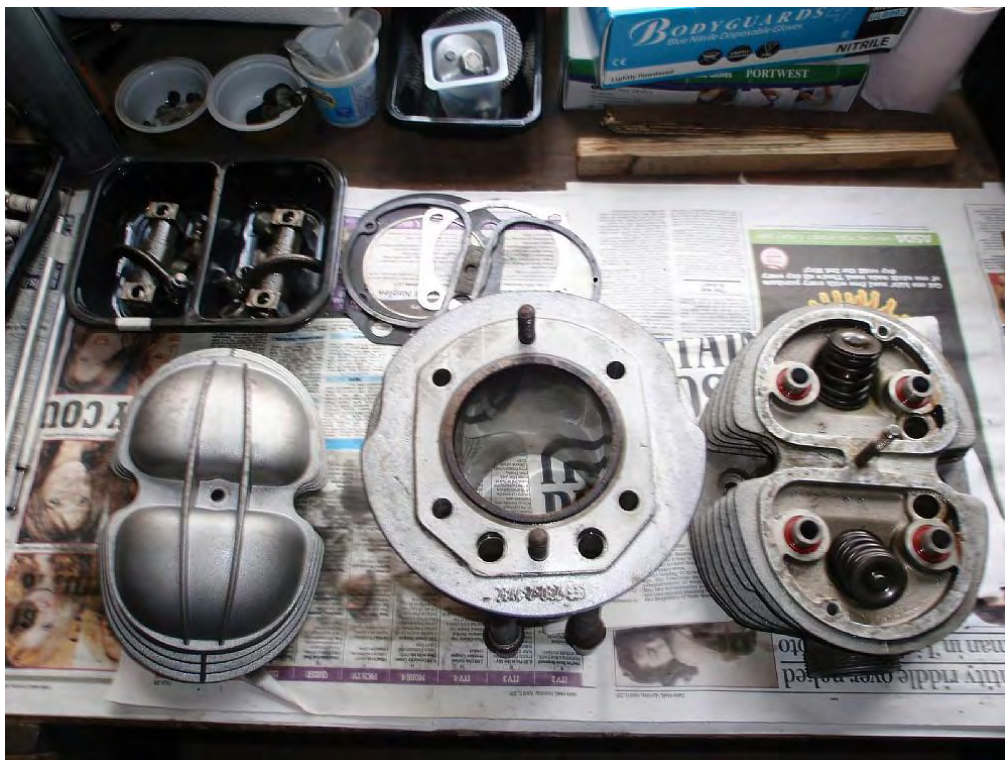
This shows the head removed. So far no nasties!



Here are the rockers off the LH head in their Tesco tray!



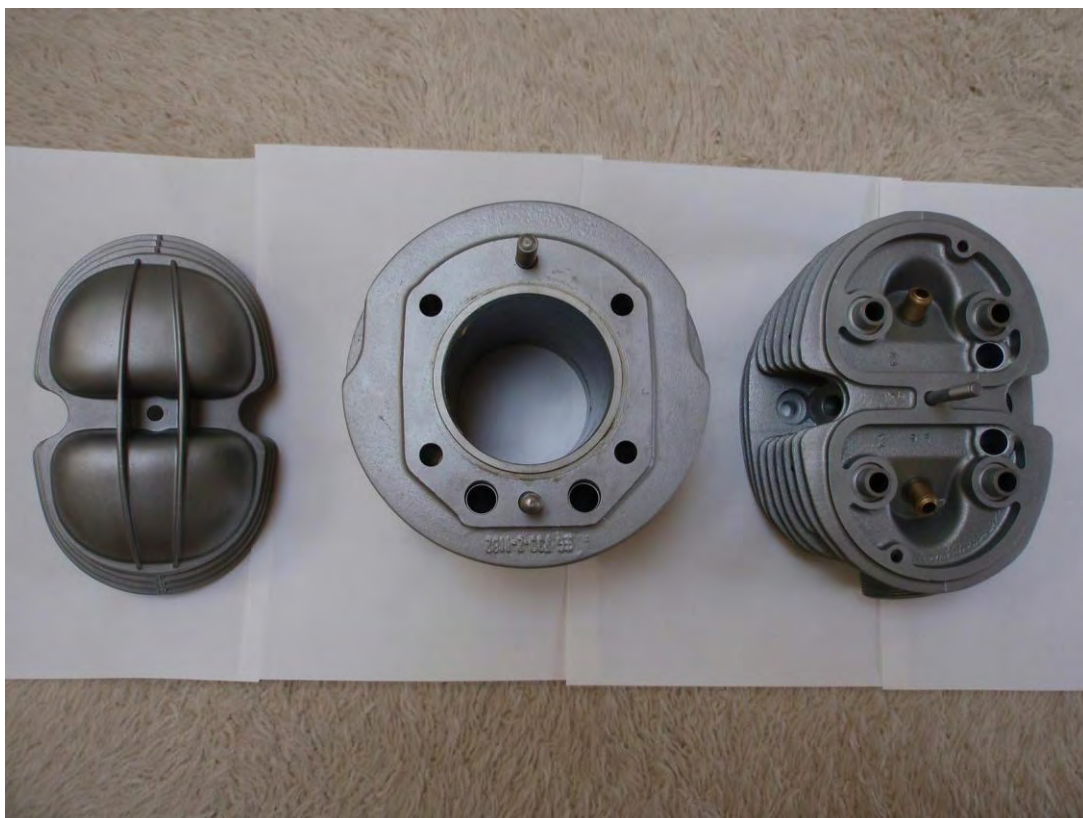
All Left Hand components on the bench – note valves still in place.



The right hand items came off easily too so no need to show them.

After extracting the valves in each head, I cleaned up the piston tops, checked the piston rings as far as possible and sent all alloy castings for vapour blasting. Here are the LH items back, looking like new. The cost for each is thus:

Rocker cover £15.00. Head £40.00 Barrell £40.00 You could never get them looking like this by hand!



The valves of each head were then ground in – they need very little actual grinding! I checked the valve stem/valve guide wear – negligible – again reinforcing the recorded mileage.

I had bought two sets of stainless steel pushrod tubes and carefully extracted the old tubes – a little heat around the old tube in turn (gas blow lamp) and using a drift of the correct diameter, both old tubes were driven out. There is no mention of the correct height to insert the new tubes so I called Steve Scriminger again and he said drive them in until they are 0.5mm below the highest face of the head. Thanking him, this I did, again using a small amount of heat (and drove all 4 new tubes in to position.

Now for the pleasant task – refitting all new, vapour blasted and clean components.

Refitting the barrels, heads and rocker covers

I had purchased a complete gasket set which includes the rubber pushrod tube seals so pushing these correctly into position I applied Hylomar gasket sealant to the block and one side of the new gasket and carefully slid the LH barrel over the piston rings, having lightly oiled both barrel and rings. I did not use a ring clamp, merely compressing the rings by hand until they slid over the chamfer into the barrel.

This photo shows the RH barrel, head and rocker cover refitted with valves correctly adjusted.

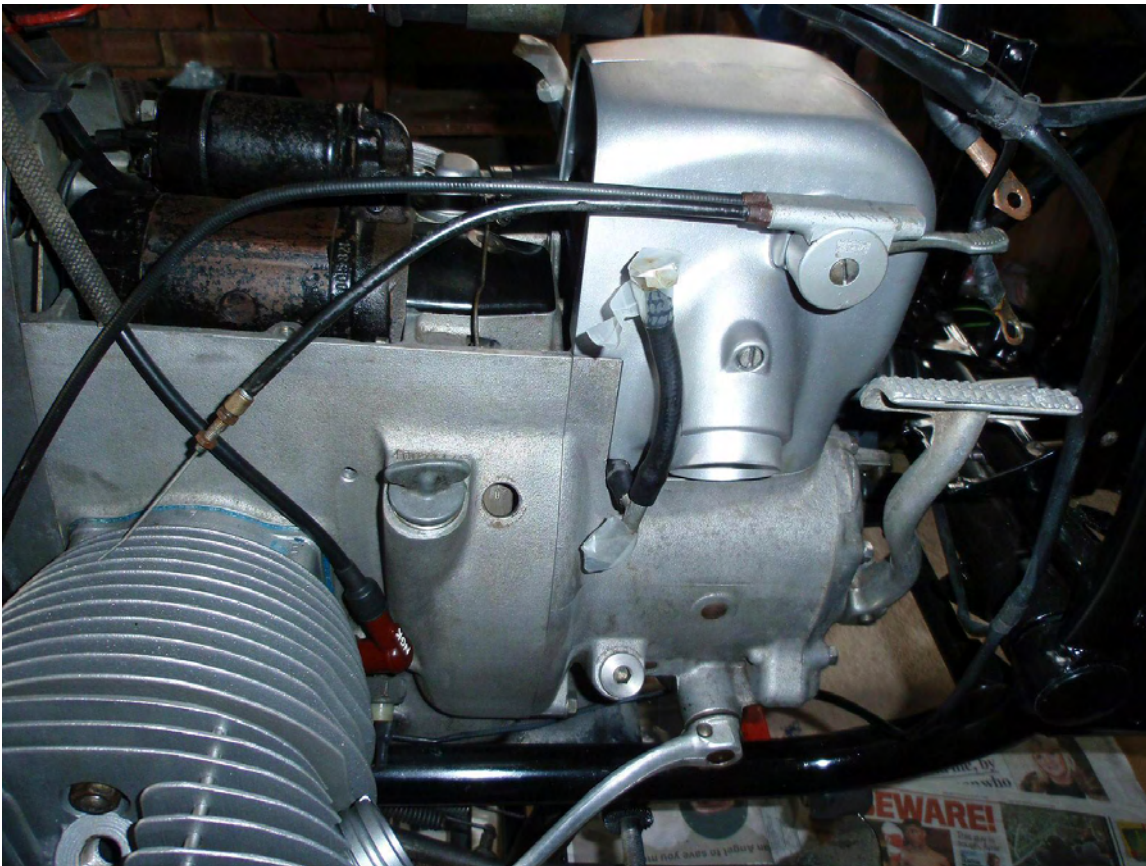
Note Hylomar gasket glue and barrel/block joint and new stainless steel pushrods with new rubber seals. The forward parts of the main frame have also been sprat painted.



Next the starter was refitted.



Air boxes (also vapour blasted) back on



Rear mudguard refitted

New rubber washers and new stainless steel lock nuts and washers used.



Battery tray fitted and new alloy spacers used on the lower mudguard bolts.



Bevel Drive with new rear wheel drive splines and vapour blasted

This had now come back from Motobins and looked superb after Steve Scrimminger had worked his magic.



Bevel Drive, Rear wheel and Rear brake refitted

Note new stainless steel spokes and all vapour blasted and new Metzeler tyre and tube



Carburettors refitted

I had cleaned both carbs and checked them visually but was to discover some problems after running the bike – see later!

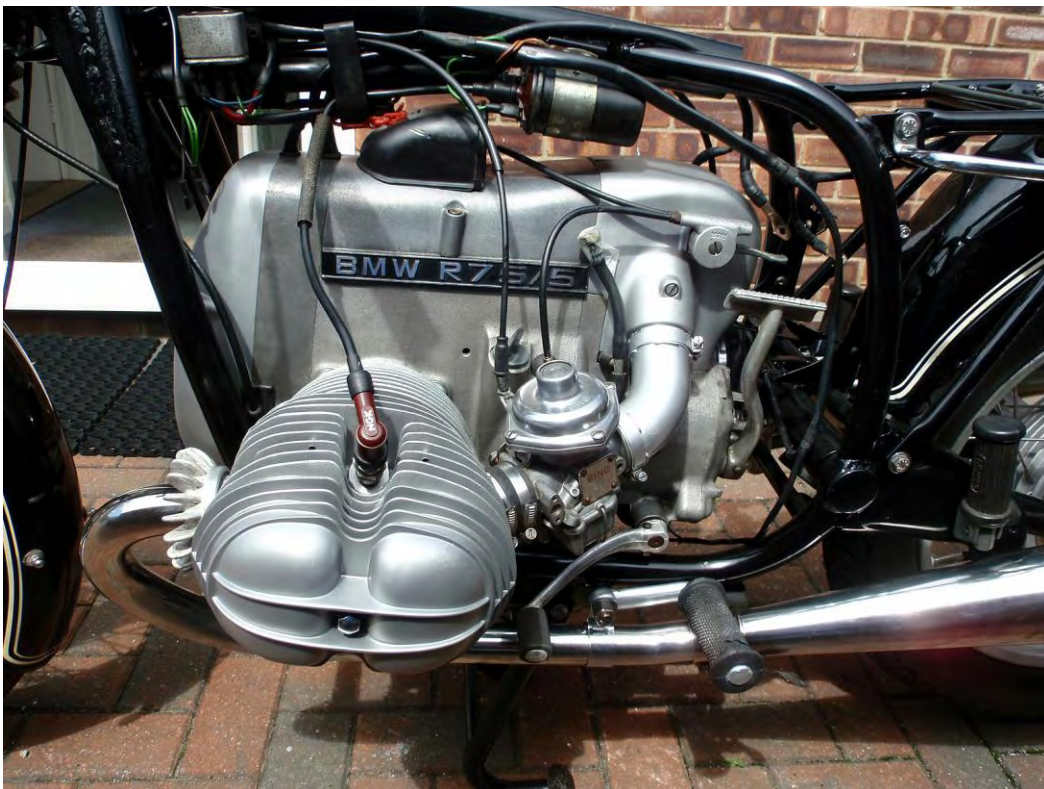


Off the Hydraulic lift at last

I had bolted the exhaust system back on prior to taking the bike off the lift – new stainless steel bolts to attach the silencers. Front wheel not yet rebuilt – went off to wheel man shortly after this. The bearings were fine so I stripped them and greased them before re-assembly. Note the split gaiter – this is why the bike came off the lift now so I could work on the front end.



Close up of LH side engine



Bike back in garage and front wheel removed and new gaiter fitted to RH side. This was done by releasing the top nut and fork brace clamp nut and lowering the fork complete (mudguard had

been removed). I had assumed the forks were ok – big mistake as I found when later riding the bike – see later for work on forks.



Seat, Rear Number Plate and Mudflap replaced

Front wheel now at the wheel builder – again new stainless steel spokes, vapour blasting and new Metzeler tyre and tube.



Front wheel back and bike ready for first run!

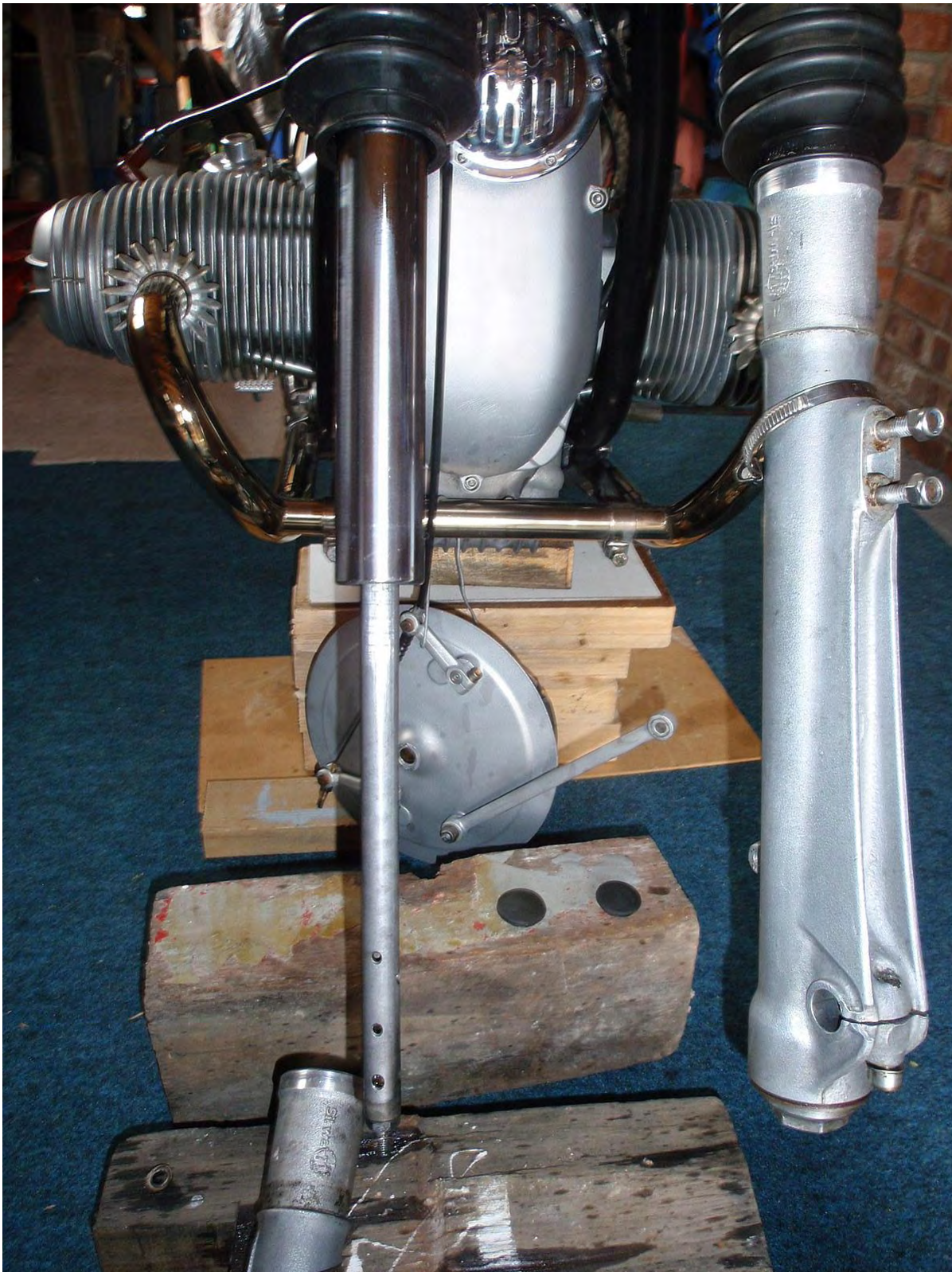
I had been kicking the engine over for several days after getting it back together just to get the new oil to flow around – it was good to see the yellow oil light go out when only kicking the engine over. I had replaced all oils and filter and fitted new spark plugs. With a gallon of new petrol I cautiously turned on the petrol taps and push the starter – after a few stutters it fired up and I took it for a half mile slow run around the block – the first time running on the road for fifteen years!. Immediately I felt the front brake was terrible so that needed adjusting, the carbs were not right and on a longer run later it was apparent the forks where going down but not coming up!



Back in the garage I removed the front wheel and mudguard and stripped down both forks completely.

Both had large accummations of dirt in the bottom valves and the top valves were completely stuck!

There are very few parts actually needed to replace inside the forks, they just needed a good clean out to ensure all moving valves worked.



The Main Fork Components

I measured the spring lengths whilst dismantled – both were exactly the correct length!

I also used my engineers heavy cast flatplate to check that both stanchions were straight – they were!



This is the Damper Rod taken apart.

The sprung slider on the left was stuck on both forks and where the ball and spring on the right locate, the tubes was full of dirt.



End Cap, new Buffer and new Crush washer



New top oil seals fitted



I bought a 100mm syringe and correct oil from Motorbins. The manual shows two volumes as the amount was reduced later for better damping – I put in the amended amount – 235mm in each fork.

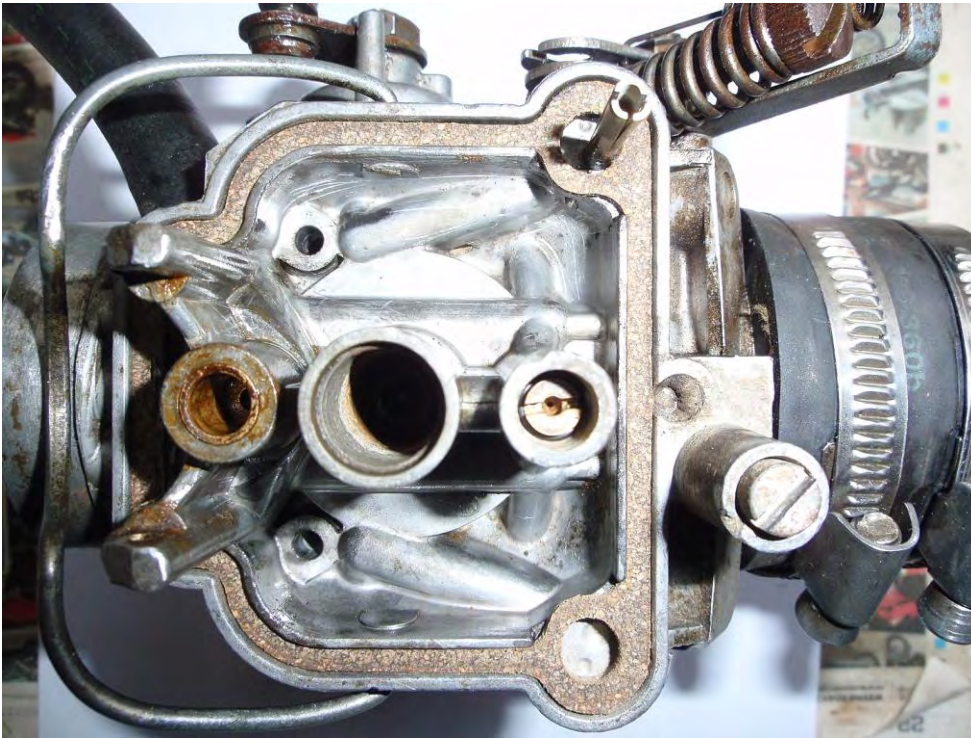
The next test run showed a marked improvement to the fork movement but it took a few more miles for them to feel as they should.

The carburettors were still giving trouble so off they came for a complete check over.

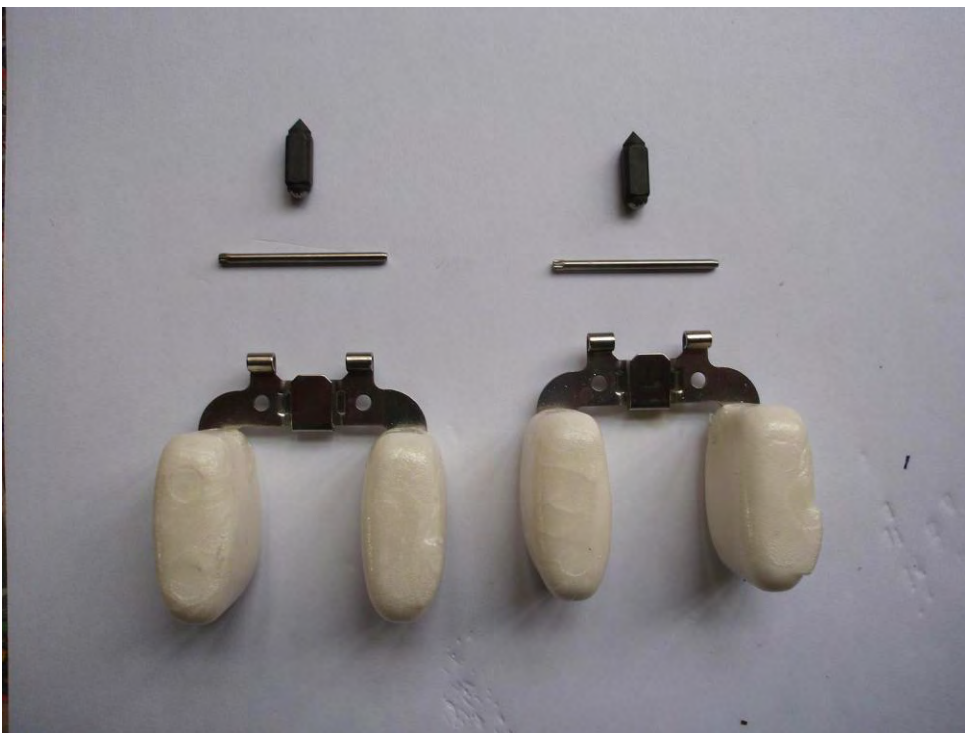
RH Carburettor before cleaning

I was getting persistant drips from the left hand carburettor and on dismantling, discovered a leaking float!

I stripped both carbs, blew out all airways, replaced the "o" rings where necessary, replaced the float assemblies and float needle jets and reassembled all.



New Float Assemblies



Off again for a run, also having adjusted the front brake – the adjustment is quite critical to obtain correct movement of both twin leading edge brake shoes. The front brake progressively got better and better bringing back memories of my first R75/5.

Still a leak from the RH carb! I must have adjusted the float level half a dozen times until I discovered the cause.

The float bowl has a tiny brass capillary like tube which is the overflow should the needle valve stick – this is what I thought was happening, but oh no! Where this thin pipe is fixed in the base of the bowl it was leaking around the hole into which it was pushed!

So I bought two new float bowls and bingo! Problem solved.

Back on the road and now the bike felt good! A few tweaks of the throttle wire adjustments and it really was running well. I felt a lot of play in the twist grip so dismantled it (a cunning mechanical device) and found the gears where one notch out – once corrected and greased, the play had gone and the throttle is now a joy to twist

So it was off to the MOT station where the R75/5 sailed through the examination – 89% on the front brake, although all the brakes have to do is stop the rolling road machine at a specific setting! It can also measure wheel run out – none on this R75/5! The examiner had owned several BMWs including a 90S and he was impressed with my bike and the condition it was now in.

The R75/5 is now complete, insured, taxed and MOT'd – ready for many enjoyable miles on the road.





I have ridden the bike for some 300 miles now and it gets better each time! I am amazed at how smooth the gearbox is – possible aided by the fitting of the later shock absorber drive shaft.

The bike is quieter than my new GSA (why did they put that silly noise valve on it!). It tracks straight as a die and is easy to move around – 50kg lighter than the GSA! I may replace the side stand the original BMW one always was a problem. The centre stand is good (was a new one) and the bike is almost exactly balanced when on it.

My intentions are to use it as much as possible for local meetings and rides around the country lanes for which it is well suited. I now have an excellent example of what is now becoming a “classic” – simple and easy to maintain and fun to ride, alongside the latest state of the art technical wizardry in the R1200GS Adventure. There are 37 years between these two bikes and after riding the GSA 176 miles today, it is not fair to try and compare them. Both are excellent in their own right but the older bike has more character!

This winter I will attend to some cosmetics, mainly the handlebars need re-chroming as does the top fork yoke.

I am a member of the East Anglia Section and will be exhibiting the bike at the Langford Museum of Power in August and at the Copdock Show, Ipswich in October.

In the middle of this refurbishment I had my 70th birthday so this may be the last big job I’ll undertake – anyway there should be thousands of miles left in both my bikes!

Safe and enjoyable riding to you all.