

The 24hour Record Breaking R69s

Steve Main Smith of Motor Cycling on
(H) BMW R69S World's 24hour record
breaker en route to a MIRA roadtest



Vintage & Classic Register



ISSUE 8/2002

VINTAGE DIARY

APRIL 2003 STAFFORD CLASSIC MOTORCYCLE SHOW

One again the Register will have a stand at this event. A few more machines are required for display.

MAY 2003 BMF SHOW PETERBOROUGH

National Club stand plus the Vintage & Classic Register.

SATURDAY 7th JUNE YORKSHIRE GATHERING OF THE REGISTER

Details from Eric Rance on
01943 607358

2nd VINTAGE & CLASSIC RALLY, LLWYNGWAIR MANOR HOLIDAY PARK, NEWPORT, PEMBS, S.WALES.

Book your time off now for the New Year. The Rally will take place over the
19th/20th/21st/22nd/23rd June 2003. Format as this year, but longer!

22nd-25th AUGUST BMW CLUB INTERNATIONAL RALLY, WARWICKSHIRE

6th SEPTEMBER SLEAFORD VEHICLE SHOW.

Please watch the Journal and newsletter for further details.

Welcome to the 8th Issue of the Vintage & Classic Register News, and welcome to new comers to the Register. I'm pleased to say that the Register continues to grow and more old BM's are being unearthed. It is a healthy situation for the supply of spares, but I can ask you all to **read** the letter concerning the **Closure of Breakwell & Green and respond.**

Now for another important item, and this is important to me in particular. **Please, please tick the Vintage box on your membership renewal forms.** From next year I will only be using the official membership list that is held by Dick Boyd for the mailing of Newsletters. Up until now any additions to the Register have been cross-referenced with the main list and it's time consuming going through five hundred names! Thanks.

Compiled & Edited
by: -
**Malcolm & Wendy
Mc Nair**
27, Syon Gardens,
Newport Pagnell,
Buckinghamshire.
MK16 0JU
Tel. 01908 216623



A HAPPY XMAS FROM
MALCOLM & WENDY

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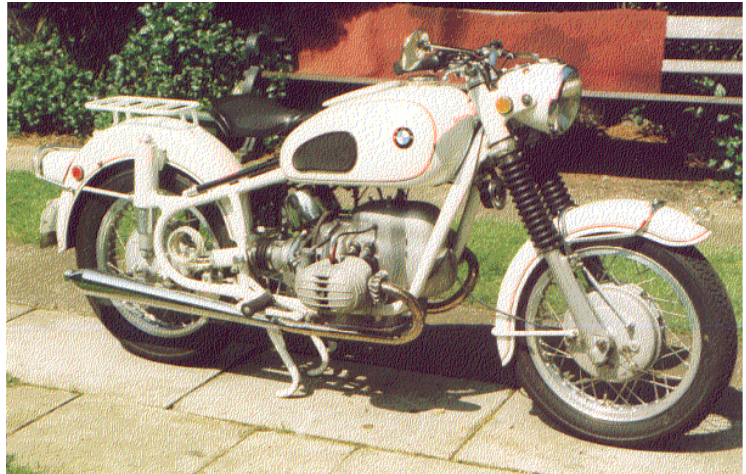
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SHOW US YOURS – A LOOK AT REGISTER MACHINES
No. 2 – Mike Dorking's R60/2US

Mike writes....*the U.S. certificate of title that came with the machine, when I swapped a Norton for it, shows it to have been first registered in Dearborn, Michigan, in 1970. It was imported into GB in 1972 and has been with me since 1994. The most obvious difference to the U.K. models is the use of telescopic forks, which I understand were used on the US models in 1968/9. They are, as far as I can determine, the same as those used on the /5. The fork brace/mudguard stay is unique to these models. Other points of interest are the*



reflectors, common to U.S. registered two wheelers. The frame has no lugs for attaching a sidecar. Not visible, but the wiring was peculiar in that there were a number of wires going nowhere, but were taped off. My solution was to rewire throughout. There are a number of items that may have been specified from the supplier such as the larger fuel tank with the toolbox located in the top, the sports silencers and the chrome air filter housing. The rear carrier is not a BMW part but made up from ½" gas pipe. It works well too. U.S spec. machines are not too common in the U.K. so this may avoid much head scratching when other rarer models like this show up. Others I have seen have wider, cross-braced handlebars. Whether mine would have originally had them I don't know.

One problem I have experienced recently was when I lost sparks while out on a run. When things had cooled down I got it started and managed to reach home. This had happened before and has presented a bit of a mystery. I replaced condenser, plugs, H.T. leads, points and the usual culprits, the coil, but so far to no avail. Not much left to replace is there?

Mike Dorking-Yorkshire Section

BREAKWELL & GREEN

This could affect YOU!

Please read and respond to Ian Clarke on 01202 824772

Many will be familiar with the products of Breakwell and Green, namely their exhaust pipes and silencing systems. The company, started in the 1960's by Ivan Breakwell and Don Green, came into existence after Ivan discovered the average life expectancy of the mild steel system on his own R60 was very, very short! I believe that both future business partners were already involved in fabricating stainless steel although, to the best of my knowledge, only Ivan was an active motorcyclist. Throughout the 60's and most of the 70's they were the only supplier of BMW stainless systems, not only in the UK but to most of the rest of the world as well. I remember well collecting a pair of silencers for my R60 from the local railway station way back in the sixties. They came in a heavy wooden box that was a work of art in itself and had to be returned by train after removing the contents. Ivan and his wife Betty were keen Midland Section members and, at a time when a good winter meeting attracted about 20 or so members, they held an annual event in February each year at their home in Sawley, Long Eaton. These annual gatherings continued well into the 70's.

In addition to complete exhaust systems for BMW's Breakwell and Green also made other one-off stainless systems for many other machines as well as miscellaneous parts such as front mudguard stays (for Earles models), clips for carburettors (and fork Gaiters) on post '70 models. Ivan continued manufacturing on his own for many years after Don Green's death. When he eventually made the decision to retire the business passed on to Terry Butler. Ivan stayed on for about a year to ensure a smooth changeover and to show Terry the ropes. Terry Butler, as a time served toolmaker, saw, that by making a number of well-designed specialist tools, the manufacturing process could be greatly improved. He then spent hundreds of man-hours producing sets of press tools to replicate **exactly** the original BMW silencers both internally and externally.

Now Terry has decided that, as he is approaching pensionable age and for family reasons, he will call it a day and also retire.

However his hard work has not been lost, as the tooling, jigs, patterns and stock (but NOT the company name) have been purchased by Ian Clarke, long time BMW enthusiast, who, I am reliably informed, is still considering whether to utilise the tooling to re-commence exhaust pipe and silencer manufacture.

He is, initially, however, selling the following new front pipes, the last ones made, on behalf of Terry Butler:

1 set R69 / R69S

1 R25/2

1 R25/3

1 R26

These pipes are priced at £140 per set for the twins and £80 for the singles with fittings, including stainless steel exhaust nuts. There may be no more of these front pipes, from any source, as Terry Butler also supplied Keihan Systems!

Ian can be contacted on 01202 824772 as he is interested in hearing from anyone who might be considering purchasing a system, or part system. This may possibly influence his decision on whether or not to pursue re-manufacture.

Lets hope that this really isn't the end of an era...

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Ian Campbell

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For sale, from 1956 R50 but suitable for all 55-70 BMW's. Headlamp shell, black enamelled, with rim, glass, reflector, bulb -holders, and switch cover plate.[not switch] in excellent condition; No dents, all original - £250 Also pair of original Handlebars, good chrome. £20 Eric Rance, 01943 607358.

REGULATOR PROBLEMS from Eric Rance

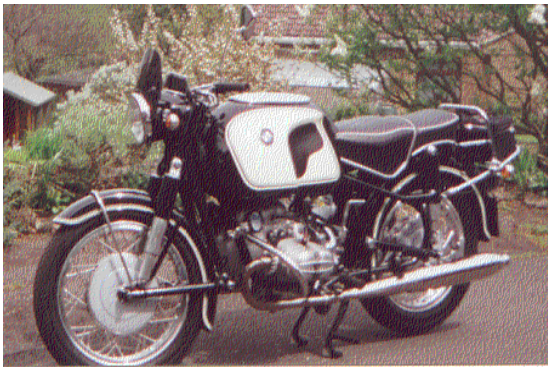
I have recently experienced an electrical problem on my R50 that might be of interest to members with similar bikes. Going to the Silloth weekend there was a strange smell of something burning and on subsequent examination showed that the voltage regulator had burnt out. Apparently this can happen at any time, but until I mended or replaced the regulator the machine could only be used in daylight. On enquiry, the cost of a new Bosch regulator was prohibitive at 1500Eu. The regulator could not be repaired. Eric Krahe suggested that Dave Lindsey of Heywood near Bury, might supply an electronic substitute. This I followed up. The regulator was available and would cost £55.00. Full instructions would enable owners to fit the unit.

A few days later the unit arrived, but the instructions related to a Bosch dynamo. The one fitted to my machine was made by Norris, who I thought made all of the R50 dynamos. The information could have been clearer for the domestic installer, but queries were efficiently answered over telephone. The unit was sited under the seat on the frame gusset plate. The instructions presume an original wiring loom colour coding, which is reasonable to assume, unless the wiring has been renewed. The wiring connections require some of the harness wires to be re-directed and this needs tackling with thought or you will finish up with some messy tape repairs. When I thought that I had finished the installation work, I fitted the battery (In my case 3 Cyclon 2.25 volt dry batteries contained within the original battery case), but there must have been something wrong as there were no lights.

After double-checking with Eric Krahe I decided to take the bike to Dave Lindsley to have it checked out. A few days later I was removing the tank and the seat at Dave's establishment. He very quickly identified that a connection was wrong. I had completely missed a terminal, probably due to the difficult access and vision. The polarity was checked and the battery reconnected and when I tried to restart the engine there was not a trace of a spark, It had been failing to starting from hot for a while and Dave Lindsley spotted, while I was kicking and cursing, that the spark was shorting out between the coil connections and the adjacent structure of the crank case. He said the HT wire should be trimmed right back to the face of the terminal post. We did so and it started immediately!!!!. More to the point, when the engine started the ignition light came on and dimmed as the revolutions rose, and the lights were seen to be working. A final check over and I was on my way home. Dave pointed out that while the Cyclon batteries had worked (they have lasted at least six years), they are vulnerable to overcharging, so the lights should be on in daytime, I have had no further electrical problems. This recent experience concluded, I have no hesitation in recommending Dave Lindsley to any one with similar difficulties. I have no business connection with him. He advertises in Old Bike Mart.

Eric Rance

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SHOW US YOURS – A Look at Register Members Machines

Chris Hawkins R90S

Chris writes.... *I purchased my R90S from an advert in the BMW Club Journal in 1999, it was only 5 miles away from where I live,(I initially went just to view it as I already had 2 other Boxers) but as soon as I saw it and had a test ride I just had to have it ! For me it's one of those BMWs that makes a lasting impression on one from an early age (the other one which does it for me is the very early R100 RS with the humped seat and metallic Gold colour scheme--WOW)*

I realised that once I had bought the R90S I'd had a yearning for one from a long time ago.

It has now done 49,000 miles and has the original engine, gearbox and frame, I have had the paintwork changed to Daytona Orange from the original TT Silver Smoke, the frame Black Paint is the original and is really nice, I have added stainless fasteners to it and have fitted Boyer Micro-Digital Ignition.

It also runs on with unleaded Heads. The only non standard part (visibly) that I have fitted is the conversion made to the front brake so now there is a handle bar mounted reservoir and splitter junction under the tank as the original brake was not very positive. The difference in braking performance has to be tried, and believe me, you certainly wouldn't want to go back to the original set up.

It doesn't get to much use as I have to split my mileage between a 1985 R65, 1987 R80 mono and a 1958 Earles fork R60.

I love them all for different reasons but the R90S is still a very relevant bike, even 26years on, and really if you want to get a move on accelerates quicker than the "old" Boxer has a right to.

The only problems encountered have been a broken drive shaft spring and some wear in the drive splines in the rear hub. This problem was quickly sorted by the excellent Difazio Motorcycles of Frome --- why go anywhere else?

The paint work by J.B.S. of East Coker Nr Yeovil (01935-863676) and is a totally brilliant job done by true professionals

Also much thanks must go to Ian Clarke for all his advise and friendship (especially on the forthcoming engine rebuild on the Earles fork R60--but that's another story for later on!)

CHRIS HAWKING (Bath)



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THE EARLES GEARBOX – LATE FACTORY MODIFICATIONS.

Over the last 40 odd years almost everyone who has ever ridden an Earles Fork machine has experienced the noisy, slow gear change. This is always blamed on the use of an engine speed clutch. The ability to execute silent upward changes comes with (much!) practice. Silent downward changes are another matter! Some advocate taking up the free play in the lever before lifting the clutch and finally executing the change as the panacea to silent changes. My own experience is that no two boxes seem exactly the same and a technique for a particular machine has to be developed.

BMW received a constant barrage of criticism from owners and dealers, mainly from our cousins across the pond! Of course by the late 60's other makes that had quick and quiet changes were available, particularly on the "new" Japanese machines. Unusually, BMW responded to this criticism, but then again sales were very sluggish and the /5 was still a couple of years away!

Their response was detailed in Service-Information note No. 268 dated July 1968. I quote from the introductory paragraph:

"A considerably easier and quicker shifting of the various gears has been obtained by enlarging the radii of the cam plate and chamfering the faces of the shifting pegs on the spur gears of the output shaft. This modification has been introduced in the series production on the models

R50 commencing with frame No. 646 686

R60 commencing with frame No. 1816 037

R69S commencing with frame No. 664 451

When I purchased an R60/2 some time ago and stripped the gearbox, it was obvious to me that not only was the gear change mechanism different to any Earles I had experienced previously, but that it bore a striking resemblance to a /5. Further research showed that it was more than a similarity to a /5, in fact most of the parts were not only identical, but carried the same part numbers! I must emphasise that this applies only to the change mechanism and **NOT** to the gears themselves, these are much more substantial (and of differing ratio's) in the /5. Having re-built this box I was interested to see how it compared to my other Earles bikes. The answer became apparent immediately, it changed better than any four speed I have ever used, including the /5. Here, at last, was a quick, quiet changing box that had no vices on either upward or downward changes. It didn't need any "special" technique to achieve this, in fact, most people who have ridden the machine immediately comment on the quality of the gearbox.

So, where's the point in this preamble? Well, although the factory changed the chamfering on the shifting pegs, by far the greatest difference is to be gained on the shift mechanism. This you can do something about. The normal terminal problem for the 4speed /5 box is the disintegration of the helical input gears when the front output shaft bearing collapses. Naturally this doesn't usually have any impact on the gearshift so there will be a few wrecked boxes out there, which could be cannibalised for parts. On the other hand it is still possible (but expensive) to buy the parts new for a conversion...

Must get back to the workshop, that old /5 box is about to give up a few parts for an Earles project...

.....The Amateur Mechanic

This section is a forum for technical questions and answers and is reproduced from the American Vintage BMW Owners web site. Their editor, [Craig Vechorik](#), has kindly given his permission to reproduce his response to questions posed by owners.

Steering Head Shake

Lasse Aarønæs of Oslo, Norway wrote:

When browsing through your pages I am surprised to find no comments or advice for solving - for what I have experienced - a fairly frequent problem on the /2 BMWs: the wobbling tendency.

Yes, you're right. I need to put that on the site. It is a common problem that can kill you, if it gets out of hand.

I have experienced this problem on my own 1956 R50, and I have spent time and money to solve it. Well, I can tell you that changing tires....

Correct thing to try. Some brands of tires don't work well on Earles Fork bikes.

...higher air pressure,...

Correct pressure, rather than high, in my opinion, seems to be best.

...new wheel bearings,...

Only effective, if you have the proper preload on the wheel bearings. And you MUST have the proper preload, or it will induce a wobble.

...new front fork bearing,...

Yes, the tapered type is much better than the loose ball type. I recommend using them. Let me ask you, when you changed the steering head bearings, did you notice how tight the races for the bearings fit the steering neck of the frame? If you had a race that was loose, that is an indication that the bike was involved in a collision in it's past. About all you can do is to use a center punch, and put peck marks around the inside of the seat in the frame, to retain the bearing. That, and use a locking compound on the race. In America, a brand of this retaining compound is Loctite. You want retaining compound that is for stud and bearing mounting. A loose race in the frame, can give you just a little play, which can amplify into an exciting ride!

Also, the preload of the steering head bearings is critical to this problem. Too loose, and the front end will wobble. Too tight, and it will feel as if someone is sitting behind you, slowly leaning left and right, when you are traveling at about 35 mph.

...adjusting rims,...

Loose spokes and/or a badly out of true rim certainly can contribute to the problem. All of this is a good start. Check the swing arm bearings, front and rear. If they are loose, it can induce the problem.

Some bikes, for some reason, (and I think it may be slight wreck damage in the past) tend to want to develop head shimmy. My '66 R50 was prone to the problem. It had, by the way, loose fitting races in the frame. It was much worse (it tried to kill me on a trip through the mountains) when I had the bike loaded with camping gear and clothes. After I tried all of the above, wheel bearings front and rear, swing arm bearings, etc., which seemed to correct or improve it, I would hit a ripple in the pavement, at some speed, and it would start again.

At last, I hit upon a simple cure. It cost nothing, and I NEVER had the problem again. I moved the Earles swing arm to the front pivot hole, which is supposed to be for sidecar use. Doing this had this effect:

1. The bike did not handle as well at speeds below 10 mph (unless you are into Rally slow race events, at BMW gatherings, who cares?)
2. The overall handling of the bike slowed down just a little bit. Hardly enough to notice.
3. It NEVER shook it head, even when heavily loaded, EVER again.

This is because when you move the pivot axle of the front swinging arm forward, you are, in effect, increasing the rake of the front wheel, which tends to make the bike want to go in a straight line, and not change direction as easily. This negates the tendency to wobble and corrects for a slight misalignment that may be present in the frame or front end from a slight collision in the past.

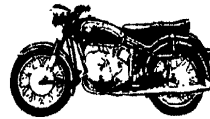
...has not solved the problem completely. Next, I will replace the shock absorbers and springs front and back. I would be happy to receive advice on this problem.

On a problem machine, such as yours, I recommend you try moving the pivot to the sidecar position, and give it a try. Riding solo, less a sidecar, with the bike configured this way is not a problem. It saved my life, and I once again trusted the machine in mountains and curves.

.....



This shot, kindly sent in by David Davies of the FBHVC, shows Sebastian Nachmann riding in the 1965 ISDT that was held in the Isle of Man. Note the use of tele. forks.



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BEING WITH BERTHA- Appraisal of a BMW R60/5



full touring kit, crash bars, fairing and stainless

Bertha is a 1971 600cc BMW, the first of the 'new generation' BeeEmms that superseded the Earies Fork models, and which eventually led to magnificent bikes such as the R90S a few years down the line.

Produced in 500, 600 and 750cc versions, these older BMW's are arguably surely the best buys on the used bike market today, with prices ranging from about £1000 to £1450 (**even less or even more dependant on condition Ed.**) for the R60/5 - and the upper price may well include silencers

Continued on page 9

Make no mistake; these bikes exude durability and quality, with quite a quantity of stainless steel involved, a capability to lope along in some style and comfort, the reliability of shaft drive, ease of servicing and the facility of offering bags of scope for extras and comparably minimal cost, the whole plot being now 31 years old.

Additional attractions are free road tax and low insurance. I'm currently paying £68 annually for fully comprehensive cover plus UK get you home breakdown - and this includes two other bikes - but I must reluctantly confess to being a Certain Age!

The BeeEmm is also classified as a historic vehicle, which opens up membership to the Veteran and Vintage Motor Cycle Club and their events, and an entirely different world of motorcycling.

What about the bike?

Finished in dark black, it's a standard boxer twin with such refinements (for its day) as a kick-start backed up by an electric start.

I tend to use the kick-start when initially starting in the morning to save draining the battery. During very cold weather it does tend to fire on the nearside cylinder first, with the offside tending to tick over smoothly after about 30 seconds or so.

Above about 5 degrees all is fine, and the engine fires and settles down immediately - three kicks is the exception.

The sideways kick-start is not everyone's cup of tea, and at rest it has been a matter of some puzzlement to latter day bikers. "What's that lever thing there?" "It's a kick-start" "Spooky!" Spooky? Spooky?? Ankle twisting for some, perhaps, but Spooky?

Performance is as quoted in the manual - that is 100 mph plus, with fuel consumption averaging around 64 mpg. It will leave most cars standing at lights, although obviously it can't compare with today's missiles.

Should you open the throttle to take off, you have time (by the standards of today) to write home to mum and tell her what is about to happen!

I once took on a Fireblade at lights, and left him standing for about the first five seconds, but only because he was looking the other way when the lights changed!

Long distance is excellent once you get sorted (more of that later), the dual seat is made for the job, and the five-gallon - sorry 22.5 litre - tank means that comparatively long distances are possible between refuelling stops.

Handling for some takes a bit of getting used to, for the short wheelbase (later extended by three inches) means things can get lively at high speeds in windy conditions, especially with a handlebar fairing fitted.

There is also a tendency for the front end to dive when that superb front brake is seriously applied - it's as good as any disc!

When a pillion passenger is carried the first thing to do is to sort your feet out. This is because the foot pegs are rather closer than desirable, thus the rider has to have his feet forward to avoid fouling his pillion's feet.

If the pillion chooses to move his/her feet back too much there is a chance that any footwear heels higher than normal will contact the upswept exhaust. This has two undesirable side effects; first it is one hell of a job removing melted plastic or rubber from an exhaust, and secondly when you stop there is a strong possibility of your pillion getting an instant and severe attack of the Isaac Newton's.

This happened to my pillion rider who, being unaware that about a half of the rear of her heel had burned away on one side stepped off and promptly fell over! This proved to be quite entertaining for the onlookers, but not good for her 'street cred'. It was good, however, for extending her vocabulary!

The positive side is of course that the pillion sits in a natural position and is in a very comfortable position for distance travel, unlike some latter day hero's (and heroin's) who are forced to sit (?) like a praying mantis and are crippled in far less than 100 miles.

The rider has to have his shins butted up against the carb, which leads to another phenomenon - wide trousers or leggings have a tendency to hook over part of the carb so that when you stop you suddenly realise that your trousers are hooked on something, preventing you from putting your foot on terra firma quickly enough. Back to Sir Isaac Newton ...

I guess that you can easily identify a /5 crew - the rider has a mark on his boots from the carb, and the pillion limps ...

All of these distractions should not deter you from buying a latter-day Bertha, for the sheer smoothness and joy of what the uneducated may regard as a latter-day museum piece more than outweighs these minor irritations.

There are dealers who specialise in used spares, and the BMW Club magazine is also a good source.

The hard part to buy is the rev counter, which is incorporated into the speedo.

When in use the rev counter is badly obscured by cables routed over it, which as far as I am concerned is the only criticism of the control/switches set-up.

Should you drop the plot there is no plastic to fracture, (apart from the handlebar fairing) and there more than enough securing points to secure the bike so that it is totally immovable on the roughest ferry crossing.

Bikes of this generation all have centre stands fitted of course, and Bertha is no exception, and this makes rear wheel removal easy.

The procedure is to remove the front wheel first (two nuts and a pinch bolt), and then reinsert the wheel spindle. If possible get something to rest the fork legs on.

Secure the wheel spindle to the centre stand (tow rope, even a good substantial belt) and gently lower the fork legs onto the deck.

This leaves the rear wheel in a thoroughly indecent position of being fully elevated, and the rear wheel just drops when the rear spindle is removed. Simple ennit?

I've had Bertha over five years now, and I found that when we first met and I mounted her (!) I immediately felt that this was the bike for me. Ever feel like that?

The Craven Mitchenall fairing was donated by a generous BMW Club member, and I've also had an Autocom intercom unit fitted, which performs excellently and is indispensable for navigation purposes, with the pillion giving directions via the unit.

And the dear old bird just keeps a-goin'

All in all an ace motorcycle which I would only replace with another R60/5.

YOSSARIAN

This article was written by George Compton for submission to another magazine to enlighten non-BMW owners.

.....



Founders Day Rally – Stanford Hall



Glenyse Barr – 1954 R67

BMW CARB. PROBLEMS PRE 1970

First thing to check is that the air filter does not need replacement. Check also that the exhaust system is sound (excuse deliberate pun) and has no air leaks. Check ignition timing on both cylinders, timing can vary one side to the other. While doing this, you may as well check out the plug leads, plug caps and plugs. If you have weak spark, and the above checks out OK you could have a weak coil. Even the newish, white insulated ones are giving trouble. If these are out OK, maybe you do have a carb. problem.

Now check the carb settings; see your manual:-

- 1.Main jet 2.Needle jet 3.Needle 4.Needle position 5.Idle jet
- 6.Idle mixture screw 1 - 2 1/2 turns out
- 7.Slide - the cutaway could have been altered. 8.Float weight.

You may very well have the late type carbs. These have the fuel pipe going in offset from the centre, as opposed to the centre on the old type. The late type are less prone to flooding/weeping. A new gasket set might be a good investment.

Continued on p11

Remove all jets, screws etc. and blow out all airways. Remove all sediment from the bottom of the float chamber and other positions where sediment can accumulate.

After checking the settings. jets etc. and changing/adjusting them if necessary, check the floats:-

1 Are they the correct weight?

2) Have they cracks in them that allow petrol to get into the floats so they sink, thus raising the petrol level?

3) Have they had leaks soldered up, which increases the float weight, and fuel level?

4) Is the guide hole, for the float needle in the bottom of the float chamber clear of dirt? An accumulation of sludge in this hole would hold the float at too high a level. The result is that the float is pushed down the needle when tickling, thus lowering the fuel level. If so, clean out. NOTE: this applies to top feed carbs.

5) Does the float needle stop fuel flow when seated? Light lapping in with metal polish way help.

If you have late type carbs, the above still applies. except for 5, where you can't lap in the valve, but you can check that the fuel flow is cut off when the valve seats. Also check whether there is a small thick washer above the float and between the lever that operates the needle valve. If there are no spacing washers, try one on each float. Is the float fitted the correct way up? The spring clip should be at the top, with the shorter length from the needle groove also to the top.

If you are changing float chamber tops, go for the late type, with associated parts; they are much better. They are a direct replacement for the early type.

If you are changing the air filter, good British air filters are about 2/3 the cost of German filters, and are equally good, if not better.

John Lawes

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'The Four Before The B.M.W. Four..... The B.R.C.'

Part 1: The History.

by The Amateur Mechanic.

After the launch of the /5 models in the U.K. in 1970 at least one person thought that maybe 750cc's wasn't really big enough for his purposes. I don't think he would be too offended if I said he was of above average build himself. That man was Ivan Rouse of Leamington Spa in Warwickshire, who had already built a number of road going "specials". The BMW /5 chassis obviously appealed to him and he considered fitting the engine from a Fiat 127 car before settling on his final power plant...an air cooled, overhead cam, flat four Citroen unit.

So the basic constituent parts of the BRC (BMW-Rouse-Citroen) were purchased. The rolling chassis came from a crashed R60/5 of 1969 vintage, originally brought back to Banbury by a serviceman from his posting in Germany. A 1972 Citroen GS Club estate car (also crashed) provided the 1015cc engine and electrical systems. Well some of the electrics, as Ivan decided that a modern electronic ignition system would be advantageous, and promptly decided to fit one from a Chrysler Alpine.

I first encountered the machine around 1975 and, as a keen BMW owner, simply thought WHY? The answer didn't become at all apparent until 20 years later when working on the bike. At the start of Ivan's project the largest BMW available was a 750, by the time he finished it the R90s had been launched, but it was still only a twin.

The /5 chassis, in short wheelbase form, provided an ideal starting point for the special. It was light yet strong, capable of taking the extra power and (more importantly) torque of the 1015cc engine. The engine itself, with its overhead camshaft, is about 45mm narrower but weighs in at around 28lbs. more than a /5 (this is Ivan's figure, taken on his bathroom scales!). The crankcase is strong enough to enable it to be used as a structural member and the lower frame rails have been removed. As the overall unit is 50mm longer than the BMW, the two rear frame rails have been repositioned in line with the end of the top tube. Another, longer, tube has been pressed into the top tube to stiffen and extend this in order to accommodate the original tool tray. You may recall that BMW also stiffened their frames this way on later models but Ivan did it first! An extra support bracket is welded to this tube to enable the engine to be steadied at the top. This also acts as a support for the air filter housing taken from the Morris/Austin 1100. The end result is a chassis with exactly the same wheelbase as any long wheelbase (1972 on) BMW. i.e. 56.5in.

The electrical system uses the original Ducellier alternator with a /5 Bosch regulator. The 28ampere hour battery is located in the normal position, made possible because the air filter housing is no longer fitted. The top of the gearbox is utilised to mount a heat sink containing all the electronics required to run the ignition system.

The exhaust system, made throughout of stainless steel, consists of two into one front pipes on either side feeding into /5 short wheelbase silencers, an arrangement that certainly gives the machine its unique sound! The original 4-speed gearbox obviously (or rather, unfortunately) didn't match to bell housing on the Citroen engine and so suitable adaptors were made up. The BMW flywheel had its 5 bolt holes welded up and was re-drilled with 6 holes to suit the crankshaft. The Citroen engine, fortunately, has the rear main oil seal running on the crankshaft and not on the flywheel as the bike does. The clutch plate in the (pre 81) flywheel is standard but a heavier diaphragm spring is fitted to cope with the extra power and torque.

Car engines are notoriously ugly things and this one is no exception! The only thing to do is hide as much of it as possible so a Churchgate Mk 3 fairing was fitted. A huge fairing designed for /5 and /6 machines and featuring a square head lamp taken from a Cortina, it is only marginally less ugly than the engine its hiding! They do say that "beauty is in the eye of the beholder" so perhaps Ivan liked it. Churchgate Mouldings certainly lacked the wind tunnel available to BMW's designers, but more of that later!

The instruments and warning lamps were taken straight from the car and located on a curved panel, under the double curvature screen, in the fairing. These consist of a speedometer, rev counter, clock and voltmeter plus warning lamps for main beam, direction indicators (left and right), neutral, oil pressure and oil temperature.

As Ivan was employed by day at Lockheed its hardly surprising to find the front brake master cylinder one of their racing products suitably modified to take a single cable chain pull BMW throttle using many of his own home made parts. He even welded fixing plates on the front of the /5 fork legs and fitted the brake callipers and front wheel from a Suzuki. This was, of course, in the days before the introduction of disc brakes on BMW's. In the interests of simple maintenance the front end is now from an R90s and all the controls have been changed to BMW. All his hard work has not, however, been destroyed as the original parts are still with the bike even if they are not currently fitted.

Both the front and rear suspension systems have been up rated with stronger springs to allow for the higher overall weight. The rear axle ratio currently fitted is 3.0: 1

(11: 33) from the R100RS, giving 18.2 mph per 1000 revs in top gear.

The petrol tank has been raised about 50mm and moved back the same amount in order to miss the top of the engine and allow for the extra length of the modified top tube. This has the added benefit of giving a greater head of fuel for the gravity fed system. The car, of course, pressure fed the twin choke Solex carburettor mounted on the top of the engine.

Almost no part of the engine or chassis escaped Ivan's attention. Although not immediately apparent the rear mudguard has been cut down the centre and had 35mm added to its width. The seat no longer hinges, but lifts off completely, being secured by the original lock on one side and a simple but very effective catch on the other. Anyone who has experienced the problem of accessing the tool tray on a /5 with Krauser panniers fitted will understand why this modification was done. Aluminium side panels were made to cover the exposed battery and the electronics located on the top of the gearbox. The same material was used to make the louvered cover hiding the cam belts and alternator drive located between the front down tubes. The original pressed tin rocker covers were replaced with ones milled from aluminium billets

Having found that the distributor fouled his shins, Ivan simply (?) turned up his own, much shorter, variant! How many hours work went into this unique machine? When I spoke to Ivan he was a little reticent to reveal the time spent on the project but eventually suggested that something over 2000 hours might be a realistic figure! Having worked on it myself (and looking at the quality of his work) I should think that his estimate might be a bit conservative. So, was it worth all the effort? Well, you'll just have to wait for a future road report to find that out!

NEXT ISSUE- A ROAD TEST OF THE 'FOUR'!

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