The BMW Club

Vintage & Classic News

Issue 18/2007

In this issue – 'R80 ST Touring Test", 'In the Workshop', ' Building a Short Stroke Engine' etc, etc.



1951 R67 AS FOUND!

EDITORIAL

In this issue you will see that we have two new advertisers, Moto-Bins and Toolmaker Barry Wilson in addition to the regulars, BEMW and Bob Porecha. Please can I ask you to support those that support the Register. Thanks.

I hope that there is something of interest to all within these pages but please let me have articles for future issues in particular for post 1969 machines. Thanks must go to Jerry Douglas Sherwood, Robert Freeman … and again to 'The Amateur Mechanic' for their contributions.

On Saturday the 4th August Ian Clark is to have an 'Open Day' for BMW riders at his home. The address is 135, Ringwood Road, Verwood, Dorset. (tel. 01202 824772) If you would like to see a fine collection of BMW's and talk bikes this event is definitely for you. Arrive from mid-morning on and please note refreshments will be supplied.



REGISTER DIARY FOR 2007

July 14th/15th
VMCC Festival of 1000 Bikes, Mallory Park Race Circuit, Leics. If you would like to exhibit your machine on the Register Stand Stand contact me for free tickets.

July 22nd
VMCC Founders Day Rally, Stanford Hall, Nr Lutterworth, Leics. The theme this year is 'Flat Twins'

August 4th
Open Day in Verwood. See full details below.

September
Sleaford Historic Car & Motorcycle Show
Tel. Bill Rodgers
01526 834480

Please check that these events are going ahead before travelling

An R5, The Radcliffe Infirmary, & Yet Another R5
By Robert Freeman.



DAD & R5

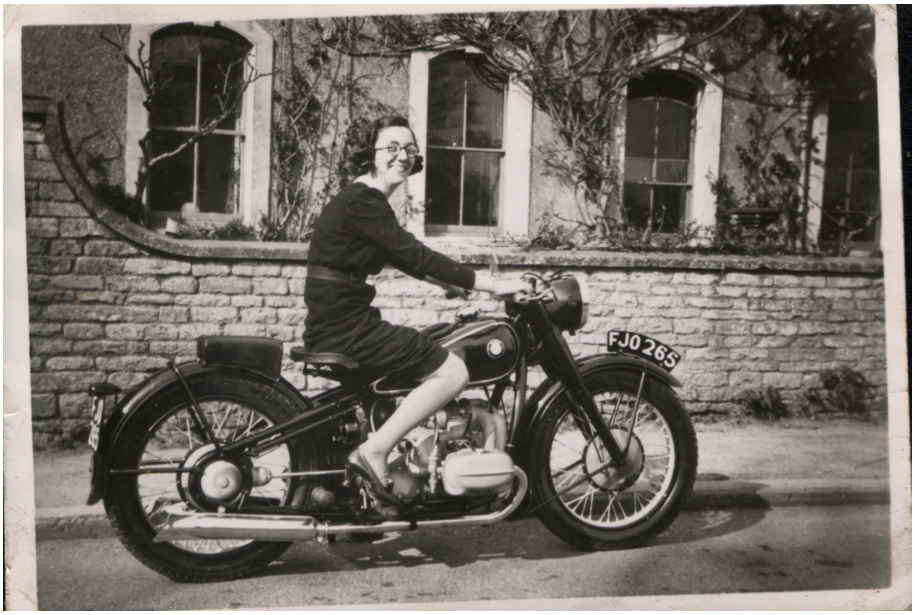
Motorcycling and Genealogy are two things that have a lot in common. If you abandon one for a period of time, it's very easy to pick up where you left off. The joy, or data, does not go away with time, and with genealogy it has actually become somewhat easier with the advent of e-mail and the web.

Many of you with a genealogical hobby, like myself, have I expect over the years, always been chasing the next generation back to 1600 and frozen to death, perhaps overlooking the fact that family history starts with your parents, and there may well be childhood memories, about which one actually knows very little.

This is to illustrate, how within a month of reading an article in the Oxfordshire Family Historian, last year, and the Internet, I solved a family story, and came across an amazing coincidence.

This concerns my late parents, Cyril FREEMAN, 1914 - 1996 & Kathleen FREEMAN, nee BATTS, 1914 - 2001.

I was born in 1942 at Fairford, Glos, though at that time my parents were living at various locations in Oxford. Prior to WW2 both my parent were 'In Service', Mum as a Maid, and Dad, a Valet. This was how they met each other, and later, married in September 1939. My father had been seriously injured in a motorcycle accident in the late 1930's, a result of which he was 'unfit' for military service, but as I understand did Fire Watching duty at night, and also as a Dispatch Rider on a BMW 500cc model R5. Reg No: FJO 265. This was the machine upon which he was involved in the accident and spent some time in the Radcliffe Infirmary, Oxford.



This photo with my Mother sitting on the bike was taken at Kencot, where they both worked, but when, I didn't think to ask.

By the mid '50's I was a motorcycle enthusiast, and in 1963, after working in Germany, actually bought a 500 c.c. BMW R50S. Still own it. Then in the late '60's heard about a pre war BMW bike for sale in St Albans. After £11.00 changed hands I owned a 1938 BMW R5, Reg. No: HMK 447. It was a 'basket case' not one part joined to another, but all there. After about 10 years I had actually restored it to original glory, and my Dad even used to ride out on

it.

So, what has all this to do with family history ? Not so long ago I came upon this link. http://ox18.com Just out of interest I looked at the 'views' for Filkins, I went to school there briefly while staying with my Aunt at Kencot. Imagine my surprise when I saw what looked like the house in the photo of my Mother & the BMW!. So I put that to back of my mind, 'Oh that's where it was then!'.
Last year a feature in the Oxfordshire Family History Journal was about accessing medical records and archives. It mentioned the Radcliffe Infirmary, Oxford. So, just for a long shot, I e-mailed the archivist, and a couple of days later received the following reply:



HMK 447 – BOUGHT FOR £11.00

"Dear Mr Freeman,
Thank you for your enquiry re Cyril Edward Freeman.
Cyril Freeman was admitted to the Radcliffe Infirmary on 23rd May 1938 following a motor cycle accident. Admission Number 2129. Reg. Number 2060. His address was given as Kencott House, Oxford. Aged 24
He suffered from concussion of the brain-injury to right brachial plexus-fracture of right clavicle-compound fracture and dislocation of phalanges. He was given a local anaesthetic (Novocain 1 per cent) for suture and repair of wounds (lacerated hand and leg) Discharged 18th July 1938.
I hope that this is use to you.
Yours sincerely,
Roy Overall. Archives Assistant"

What a result, for really so little effort. This spurred me on to find out when he bought the BMW. I knew that it had been supplied by AFN Ltd (Associated Frazer Nash) at Isleworth, who were BMW Importers up till the early 1960's. A contact in our Club Classic Register put me in touch with the Frazer Nash Archive. Giving them the Registration Number, and a date, before May 1938, for donation, £15.00 they supplied a photo copy of the Works Book.

R5 MC 211 – Frame No: 502471-Engine No: 501147 – Reg. No. FJO 265
Mr Freeman, "KENCOT", Nr Lechlade, Glos.
via; Sold to Taylins? of Oxford 7/3/38
15.5.38 Mileage 1724 General check of carburettor engine vibration. see R . 8446.

Now with an Engine Number my next e-mail was to the BMW Archives in Munich. This was the answer.

'Dear Mr Freeman,
Thank you for your e-mail. The BMW R 5 engine no. 501147, frame No. 527471 was manufactured on December 2nd, 1937 and delivered on December 3rd, 1937 to the BMW importer A.F.N. Ltd. Falcon Works in Isleworth. A technical data sheet is attached.
The picture you sent us is very nice though. Do you still have the original

picture? I'm asking because our archive would be interested to borrow it, so we can make a high-resolution scan. Of course you will get it back as soon as possible. We have only a few pictures of cars and motorcycles of this era and this would be a way to add to our collection. Maybe you have other pictures of the bike, which we could scan?

Yours sincerely,
BMW Mobile Tradition
Group Archives'

So I now had a date for their employment at Kencot. Going back to the Kencot web site, I sent copies of the photos to the owner, David Oakey, and he gave me the address of the present occupier of Kencot House. I wrote to the gentleman, and then phoned. He had seen the photos, and asked did I know who my parents worked for in 1938?. Before I was born! but I had heard my Mother mention the name Trant. 'No' he said, "It was Chant, they owned a glassworks in Birmingham, we bought this house from Mrs Chant in the late 1940's. There are servants rooms at the top of the house".
I have now been invited to go to Kencot, view the house, and take photos of my BMW motorcycle in the same position as my Fathers. However, the story does not end there. David Oakey contacted a 'village elder' Mr Bill Gasson, here is the answer:

"Had a word with Bill Gasson who is 87 and lived in Kencot all his life.
He knew Cyril and Kathleen well, and actually had a ride on the pillion of the BMW, which he says was the first shaft drive motor bike to be produced, he said it went like stink, and if you look at the photo it is a shaft drive."

So yet another family story solved, and a photo dated. But it doesn't end there either.



HMK 477 RESTORED

Going back to my R5, HMK 477, I found the engine number was 501143, only 4 units later than my Dad's bike. The ultimate fate of this machine is unknown, though I believe it was still around in 1958. My R5 I sold in 1986, the new owner taking it back to Ireland, where he rode it for many years, but early this century it went to the USA.

If you have a photo or story about a relative and motorcycling, its not that difficult to resolve an answer. All I want to know now is, Where is the 1000 Vincent with 'Wee Beastie' painted upon the tank, that I nearly bought for £100 in 1958 in Horsham?.

Robert Freeman – alias 'The Jolly Jester'

In the last issue I raised the question of suitable screens for the older machines, well Bob Porecha has sent me details of the Speed 7 screens he is able to supply. They will fit any

FEED-BACK from 17/06

machine with tubular handlebars and 8mm headlamp bolts. Please note that the black edge beading is not supplied with the screens and /6 /7 will need the special fitting kit.

Model	Height	Width	Price incl. VAT
S4000	16.25"	15.75"	£75.00
S4500	19.50"	19.25"	£85.00
S5000	20.75"	27.75	£95.00
Special fitting kit for /6 /7			£13.00

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See Bob's advert on page 7 for address etc.


S500


S4500

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S4000

A suggestion from Dave Bertram should you need throttle or brake cables made up.
Try Tom Johnson of J. J. Cables
who are located in the village of Kineton, Nr. Moreton Morrell, Warwickshire. Tel. 01926 651470



IN THE WORKSHOP (3)

WITH 'THE AMATEUR MECHANIC'

About Plungers

It's funny how you can restore and reassemble items without problems yet rarely think about how they actually work. Now, I've restored three post war plunger machines to date, as well as being well on the way to completing a fourth but when I had the first call from a good friend asking me what stopped the lower inner shroud on the rear suspension units moving up an down I had to confess I didn't have a clue!

Unlike some British plunger framed machines BMW only ever fitted springs above the axle, effectively providing compression springing. The top inner and lower outer shrouds are cast in items. The lower inner shroud has a 1mm thick washer on the bottom and a rubber bush that is only under compression when the machine is on the centre stand (or the rear wheel leaves the ground!). Fortunately, at the time of the phone call I had all the rear suspension components for my latest restoration on my bench awaiting attention! It took a few minutes to see how the lower shroud was "trapped" in position but having measured the individual parts all became clear.

600cc Sports Engines

Despite having owned three R69S models I can't say I really rate them that highly having had numerous problems and reliability issues with all of them. So I decided, after a recent crankshaft failure in the one I was currently using, to put together an R69S "kit" I had owned since 1982. But this one would be built for reliability rather than performance, after all, if I really needed to go quickly there's always the new 152 bhp K1200GT in the garage…

The problem with the engine in the aforementioned "kit" was a shortage of parts, namely cylinders, pistons, cylinder heads, pushrods and rocker gear. I'd been scouring auto-jumbles for several years before I came across a pair of semi-decent heads for 400Euro and had managed to buy three barrels but each of a slightly differing design! A bonus with the heads was that one came attached to a barrel and still had the rocker gear! As far as the pushrods were concerned, well, they are available new but at a cost in excess of £80 for four. A price I was only prepared to pay as a last resort! In the event a second hand set in good condition came from Mannheim auto-jumble in 2005 for 35Euro.

The rockers were proving to be much more of a problem. Simply there weren't any, either new or second hand, anywhere. Then Mark Huggett came to the rescue by having them remanufactured. I only needed to purchase two anyway as I had the others from the previously mentioned heads. Once these arrived I started work on the heads. Splitting the head from the barrel proved to be a real problem (that's almost certainly why the head attached to the barrel!) until a friend suggested inserting four Stanley knife blades 90 degrees apart *in* the head gasket and *gently* tapping them in with a hammer a bit at a time. Bingo! Separation without damage to either the head or the barrel! Then I built up the new rockers as Mark sells every rocker component separately. All sports engines (R68, R69, R69S) have rockers on needle roller bearings, well that's what I had always understood…

When I stripped the rockers that came with the cylinder head these were in fact not on needle rollers but on bushes as per the R50 and R60. My first reaction (after a few choice

words!) was that someone had fitted these rockers in place of the originals. Then I thought about it… The size and angles are not the same between the 'cooking' and sports engines so you simply can't substitute one for the other. That then started me thinking, where had these 'rogue' rockers originated? At the same time I noticed that the head to which they had been fitted, whilst identical to an R69/ R69S head in every other respect, had no recess in the inlet tract to accept the carburettor location sleeve. These sleeves are to be found in all R68/R69/R69S carbs and heads…or at least I thought they were. I began to wonder if the head and rockers were very early examples of 'sports' heads possibly originating from an R68, and not R69/69S. Fortunately I had original parts lists for all three models in my filing system, which confirmed that the first 302 R68 engines produced had bushed rockers, rather than the needle rollers fitted on subsequent heads and used on all sports engines until production finished in 1969. I am surmising that the carburettor location sleeve was also fitted from engine number 65303 onwards.

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Of course working out the origins of the parts was interesting but now left me with a choice of fitting 'odd' valve-gear or more expense for two more rockers. In the event I wouldn't want anyone to strip one of my engines and think I didn't know what I was doing (!) so I settled for more expense in order to fit the correct parts.

If anyone out there needs early R68 parts…The inlet port has now been machined to take the locating sleeve, valve guides re-sleeved, new R60/5 valves fitted and the heads are ready for installation on the engine.

As for the barrels, once again I was unaware just how many different styles had been fitted to the R68/69/69S models and I ended up buying new 'original' items from Mark Huggett along with a pair of KS pistons. When he told me at Mannheim 2006 that he could supply 'original' barrels I assumed (wrongly) that these must be 'new, old stock' but no, apparently, his definition of 'original' is cast by the company that supplied BMW in exactly the same way and machined by the firm that machined them originally. An interesting definition of 'original'? And the increased reliability mentioned at the start of this piece? Well I've fitted pistons with a compression ratio of 8.5:1 rather than the original 9.5:1, which, with the R60/2 camshaft installed, will hopefully produce a sweet tractable unit. I believe the factory backed ISDT R69S ridden by (amongst others) Sebastian Nachtmann was, in fact, built to this specification. Reliable? They lasted through the six days trial! I just hope mine will perform as well.

Wheels (1950 to 1969)

I had a phone call the other day from the Vintage Secretary and compiler of this newsletter. As many will know Malcolm is in the process of restoring his recently acquired R67. The paintwork and wheels were ready for collection and, to make sure the wheel builder had done his job correctly; Malcolm wanted to know the offset of the rims. The simple (glib) answer would have been to say 'like all BMW spoke wheels the rim is located centrally between the spoke flanges. Unlike certain British manufacturers BMW didn't offset their wheels, as the strongest wheel is always one built centrally. Anyway I refrained from giving a glib answer, instead searching my archive for the definitive material reproduced below: N.B. in all cases the offset is measured from the brake side and refers to the distance the edge of the wheel rim is *outside* the edge of the spoke flange on the brake drum.

Model	Rim Type.	Offset (in mm)
R51/2 R51/3 R67 R68	Steel WM3x19	5.5 (+ or – 0.1)
R51/3 R67 (S/c rear)	Steel WM4x18	15.5 (+ or 0.1)
R51/3 R67 R68	Alloy WM3x19	5.2 (+ or – 0.1)
R50 R50S R60 R69 R69S	Alloy WM3x18 (Or Steel WM3x18)	6.5 (+ or – 0.1)
R50 R50S R60 R69 R69S (S/c rear)	Steel WM4x18	3.5 (+ or – 0.1)

Looking at the above table it is clear that my 'glib' answer, whilst technically correct for most rims, do not hold good for the offset on the WM4x18 rear used on the Earles models. The figure given for this rim (3.5mm + or – 0.1) indicates that the rim is certainly *not* central across the spoke flanges. This is probably necessary to give clearance between a 4.00x18 sidecar tyre and the drive shaft housing. Having said that I have a 1969 R60/2 that is fitted with the correct rim (Steel, WM3x18) and tyre (4.00x18 Metzeler ME77) and has no clearance problem, however a 'proper' sidecar rear tyre fitted on a WM4x18 rim will have a wider, flatter section… Before we receive comments about fitting a 4.00x18 tyre to the rear of the R60/2, the last series of machines made in Munich were originally fitted with a rear tyre of this size along with the 'usual 3.50x18 on the front. To compensate for the bigger overall diameter caused by the larger tyre section BMW fitted a lower bevel ratio (7: 25) than standard (8: 25) whilst the speedometer ratio of 1: 1.2 remained unchanged.

In Vintage & Classic Register News Issue 2/2000 there was a query from Reiner Goll in Wales about the offset of the rear rim on his R69S. I now wonder if he has the WM4 rim fitted to the rear, as he said the machine was produced specifically for sidecar use?

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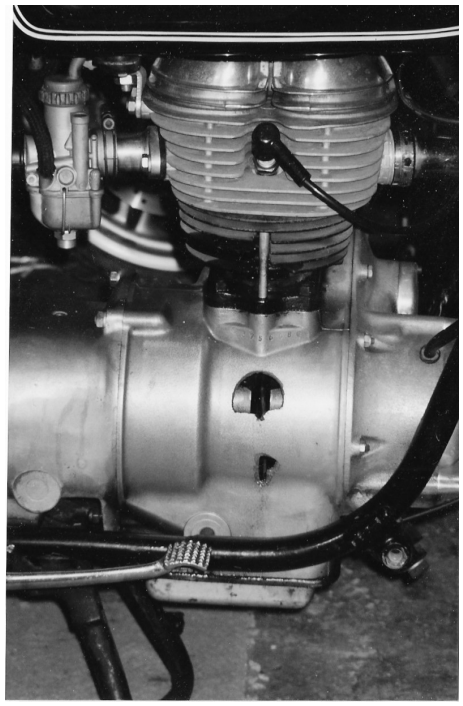
You may remember the 'Concours' R50/Steib that formerly belonged to



Eric Rance of Ilkley, Yorkshire. Well, it was sold several years ago at auc tion to a museum, but is not used as a static display all the time.
It is shown here used for collecting the museum Christmas tree!

It can be seen at The Exmoor Collec tion, Parkhouse Road, Minehead. Tel. 07970 497 741

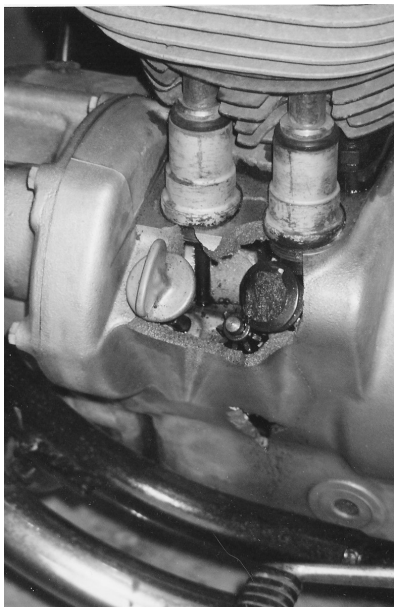
R27 Seasonal Blow-Out



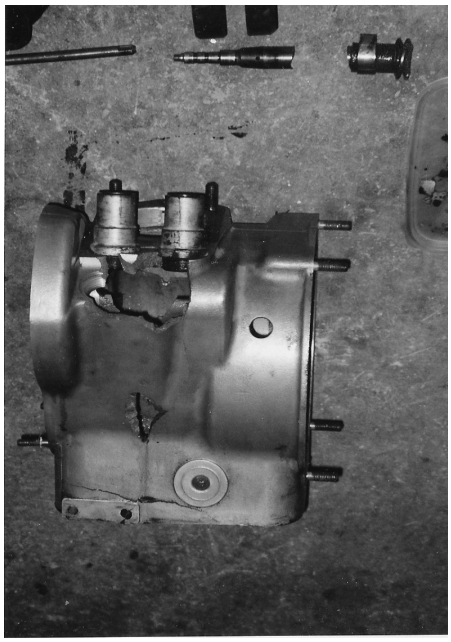
In the world of old BMWs it is not often one sees obvious signs of a blown engine. Usual problems like knocked out big ends, seized pistons and dropped valves successfully disguise the internal carnage under an unruffled exterior of calm normality. It was therefore with a sense of wonderment at a novel experience that the R27 seen here was wheeled into the workshop last autumn.

What makes this story even more bizarre is that the gentleman riding the bike at the time was quite unaware of the severity of the destruction going on between his legs. He claims the machine was purring along in its regular, inimitable fashion when he heard a strange noise combined with a sudden loss of power and, looking down, discovered he had two oily boots as he glided sedately to a halt at the side of the road. Only two gaping holes on either side of the crankcase gave any indication something was up.

The gentleman's claim was subsequently confirmed in the workshop. With its guts hanging out it nevertheless remained possible to crank the engine over with the kick-start lever smoothly and silently. The broken end of the camshaft pointing skyward and the disappearance of the oil pump drive screw cap were merely precursors to what was to unfold within.

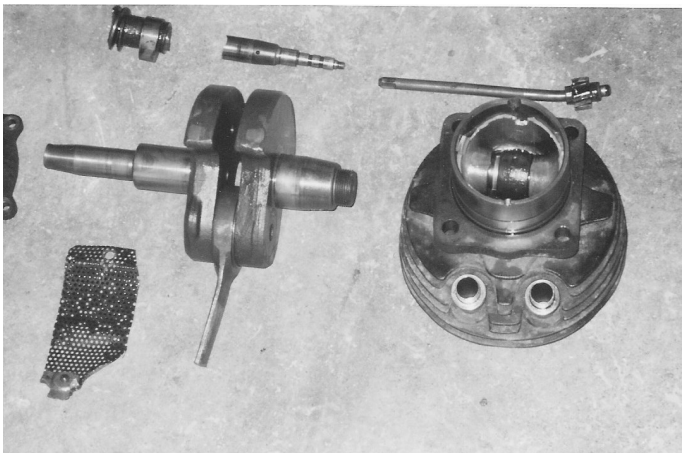


The cylinder head and valve gear were untouched. Peering down the bore no obvious sign of damage to the piston was manifest. However, suspicions were aroused when the piston with its cylinder were withdrawn as a unit, revealing a smashed piston skirt and the small end sitting comfortably between the gudgeon pin bosses, not something one witnesses every day of the week. The rounded end of the broken con rod poked up through the crankcase mouth like a grotesque children's toy, bobbing up and down upon rotation like a mocking clown.



Not only was the camshaft broken in two, it was broken in three, the exhaust cam and cam follower having completely disappeared, probably strewn over the side of the road ready to destroy the blades of the first mower to pass over the scene of the incident. Together with the sudden, unexpected additional crankcase ventilation, a additional jagged, horizontal crack along the lower near side made itself evident upon closer inspection once the engine was removed from the frame. Internally, the oil pump drive shaft had bent below its skew gear; the oil strainer plate was mangled, while the sump held a good handful of fragmented crankcase and piston bits. It was a pretty unedifying mess.

The engine is currently being rebuilt with a good, second hand crankcase plus most of its internals. The question remains,



however, as to why such a strong, steel con rod should break in the first place. A parted alloy rod might be more understandable given the known frailty of geriatric aluminium. But at best an R27 can hardly be considered a racing flame-head capable of boiling tyres in smoking doughnuts at the end of a thousand-yard wheelie. No, because they go about their daily business in such a charming, quiet, efficient, sophisticated manner, this particular case of self-annihilation remains all the more remarkable.

Gerry Douglas-Sherwood

PRODUCT LAUNCHES.

by 'The Amateur Mechanic'

On the evening of the 25th September 2004 I attended the launch of the new K1200S. Like many Register members I imagine, the invite to the drinks and eats offered by my local dealership seemed too good to miss! It was, as usual at these do's, attended by mainly BMW aficionados interested in the latest offering. Many I'm sure, will test ride and the few will part with their hard earned cash! The owner of the Dealership introduced me to a fairly senior person within the Bracknell organisation. " This is …….. one of our old (!) customers and a long term BMW rider. The executive then began to extol the virtues of the K1200S. I enquired about the quality, having seen a number of components that appeared, to me at least, to be badly finished…but no, the quality he assured me was better than ever! I expressed the opinion that quality had probably reached its peak at BMW in the early 50's and gone down hill ever since! Its history now, of course, but within two days the bike had been withdrawn from sale with "camshaft problems". This was supposedly due to quality issues with the external suppliers. Perhaps the real irony is that the said executive knew of the K1200S' withdrawal from sale at the time of the launch!

So, what you may ask has this got to do with the machines we are primarily interested in? Well, the above events started me thinking about product launches. Now I've only been on the scene (BMW wise!) since the 60's, but of course no new models were introduced until 1969 when the /5 was launched. If you wanted a new R50/R60/R69S (or R27) at that time you placed your order with one of a handful of dealers and waited for its delivery. If you were lucky you *might* just see someone else's new machine in the agency showroom before collection. Otherwise you just had to be patient. Putting figures to sales I seem to recall BMW Concessionaires sold seven (yes 7!) new machines in the UK in 1967. Sources of spares were also few and far between! MLG, Markhouse Motors (Prop. Frank Cox), Chas Coombes, Tintern Garage (Prop. Dave Dickinson) and Ron Perkins were probably the most regularly used suppliers.

Having announced the launch of the /5 models in 1969 the first official imports didn't arrive on our shores until mid/late June 1970. I believe that Dave Dickinson formerly at Tintern Garage was the recipient of the first two /5's imported, a Polaris Silver 60/5 and a Black 75/5, both registered towards the end of June on 'H' plates, then sold to Arthur Lewis (one time Western

Section Secretary and BMW Club President) and Alec Moulton (inventor of the bicycle that

carried his name amongst other things, also BMW Club Western Section member) respectively. There was certainly, as far as I can remember, no particular fanfare or "launch event" at this time. In fact I don't recall that there was much of a dealer network either!

The person who sticks in my mind as the one trying to put BMW Motorcycles on the map was the late Richard Steyr. Richard was Sales Manager at BMW GB, had registered a few demonstrators by 1971, and started taking these round the Sections (all 4 of them, including HQ!). I went to an HQ meeting somewhere outside London in early 1971 and had my first ever ride on a 750cc bike. I asked Richard if it went as well as my current 1968 R69S. He said have a ride and give it some stick (or the early 70's equivalent!). My subsequent take off with the revs well up and the front wheel in the air probably did little to endear me to Richard! Those early /5's had really evil clutches that operated like on/off switches, well that was my excuse! Prior to this happening to me the only time I'd ever seen the front wheel of a BM leave the ground on take-off was when former London Section member and one-time National Social Secretary, Barry Wilson, left a dinner dance at the Kingsley Hotel. The bike? His Earles fork R60/2! Having had a few incidents of this nature, plus the odd machine thrown down the road, many later demonstrations were conducted behind a lead rider who tried to keep the pace down a bit! Its odd to think back that riders were even left to work out their own unaccompanied test routes on occasions! How brave was that?

Having set the precedent (in this country at least) for customers to actually ride an example of the machine they possibly intended to buy, more clubroom test sessions were organised. When the /6 range was launched I attended to one such session organised by the newly formed Oxford Section and run from their clubroom behind the 'George' in Littlemore. Here I sampled both the R90/6 and the top of the range R90S. At the risk of upsetting R90S enthusiasts I have to say, for everyday use, I would have preferred the /6. I didn't think either of them was as well built as my 75/5 and, facing a considerable financial outlay to change the 75/5 for a 90/6 no sale resulted from these rides. Its difficult to know whether these test rides really improved the chances of a sale but as BMW GB continued to supply both Sections and National events with test machines we must assume they did.

Sometime later dealers began having their own test fleets, often with the newer, larger, dealerships having one example of each model in the range available. Today the potential purchaser of any new BMW model would be shocked if the chosen dealer *didn't* have the complete model range available for test. How things have changed since the 60's…

As the dealer network expanded so started the official 'launch' events. At first these were on a national basis but latterly these have become 'world wide' launches taking place everywhere on the same day. Mind you, when it all goes 'belly-up' as it did with the K1200S, the logistics of recovering machines world-wide and returning them all to Berlin for rectification and then re-distribution many months later must have raised questions at BMW GmbH as to whether simultaneous launches were such a good idea after all!

In the UK at least, I believe Richard Steyr changed the image of BMW forever…something I personally have been very grateful for over the years.

Copy right 2006 'The Amateur Mechanic'
©

R80 ST – touring test

The R80G/S had hardly been born back in the Autumn of 1980 before those with foresight were heralding what they dubbed the 'roadster' version. Convention dictated that because it had 'knobblyish' tyres, braced handlebars, a black high level silencer, a 21" front wheel and a sump bash plate, the G/S wasn't true roadster material, though most who rode it agreed that it really was the best road bike ever produced by BMW. Now the same basic Bee-em is available with low profile Metzeler Perfect tyres on wide rims and other visually more accepted fittings. In this guise it's called the 'ST' ..... the Strasse Tourer (street tourer). Gone is the cross-country 'G' for Gehlande, and in is the touring 'T'. Let's take a look and see if it warrants the 'T', how much 'G' remains, & whether it really can be any better than the G/S.

The GS models always seem to be in the limelight, especially the latest top selling models. With the selling price of the older models holding firm there has been increased interest in the R80ST model so I thought it might be fitting to include an impression of it written in the 1980's. This article first appeared in the September 1983 Journal and was penned by Geoff Wilson who was at that time President of the Club.

I guess that some riders must like 'fly-back' throttles. Me? I cannot see how anyone can. The Yankee paranoia for safety in excess spreads across the Atlantic and leaves me with a tired right hand and quickly decelerating cycle when I want to do anything other than throttle grip with my right fist. Thankfully B.M.W. still provide the facility for fitting a throttle friction screw and the GW motorcycling person in road-test guise is never without one for immediate ftting to a virgin test machine. Somewhere in between Dumfries and Carlisle on the wet night that I collected this R80ST I fumblingly fitted the few pennyworth of accessory from my pocket. That simple single move made the 'ST' more worthy of the 'T' brand than it ever could be without it. Ten out of ten to B.M.W. for still affording the facility where few, if any, others do.

With that little lot off our mind, we can start looking for the changes that have taken place as 'G' evolved into 'T'. Gone is the mud-clawing 21" front wheel surmounted by the high flying mudguard, and in is the more usual 19" rim, still single disc braked, and R45/65 style-mudguards. Long had been the criticism of, and theory surrounding that reversion to a single disc, but I need no more braking power than this one unit provides. Even two up and camping equipment laden, the combined effect of the single Brembo disc and 'flexible' shoed rear drum unit that performs with the efficiency of a disc, and now via a foot pedal that looks as if it's straight off an MZ, is a compromise that I can well live with. To add a second front disc serves only to add to un-sprung weight, overall weight, rotating mass and wheel mass with which the suspension has to cope.

In the not unreasonable assumption that the 'ST' will not be asked to climb 6" high boulders in G/S mode, front suspension travel has been cut by almost 2" from 200mm to 152mm by combining components taken from both the R100 and R65 parts bin. Rear travel has also lost an inch and now measures the same as the front. Together they produce a seat height of around 33".....a good bit longer than most people's 'inside leg' measurement and a stretch to saddle. For that reason we found it a good idea to mount the bike with it still on the centre stand, or even the side stand (which incidentally this tester and his 5'6" tall buddy could extend even from the saddle). However, once on board the soggy suspension lets the bike plus body settle down to manageable proportions.

In motion the suspension performs with astounding efficiency and makes Britain's deteriorating roads seem not so bad at all. *(not a new phenomenon then! Ed.)* With tank bag,



laden panniers and tenting equipment on the carrier, the tendency is towards the un-damped motion of a trampoline, particularly at the back end, but neither suspension ever bottomed. I wonder if the fact that the rear mono-shock unit is mounted upside down (i.e. rod at the bottom) means rebound damping isn't all it should be. However, very gentle feathering of both brakes serves well to damp out any developing po-going. Most remarkable though, is the lack of influence on road-holding that these oscillations have.

The thing that matter is how well the wheels stay in line on the road. The Metzeler Perfect (100/90H19 and 12/90 HIS) shod wheels are as dependable as any we've committed ourselves to. If there is doubt at all in our mind, it is born of the feeling that the 'ST' permits 'off the vertical' motorcycling movements at a higher rate of knotts than any other production B.M.W. before it. In the past that tender touch of toe on road has indicated that enough is enough for most Bee-em riders. On the 'ST' high mounted footrests and increased ground clearance makes it possible to become acquainted with un-B.M.W like lean angles. It's fun! Touting loads don't upset it, and we never found the point at which the whole bike ceased to forgive our liberty taking. However, don't be over impressed by the speeds indicated if you test ride an 'ST'. This machine's speedometer was well in excess of 10% wrong (as was the one Motor Cycling magazine put through a speed trap). Like the G/S and R80RT, the 'ST' is geared for around 105 at achievable red line 7,000rpm in top. Equate revs to mph on this example and you'd be deluded into thinking that a top speed of 125mph is possible. Not really good enough I think ..... deceptive as well!

Neither is currently used Japanese-style electrical switch gear all it could be. A poorly located dip-switch sometimes extinguished the headlamp completely as the change was made; and when will a manufacturer realise that motorcycling thumbs rest **beneath** the handlebar, not on top or in front.

At best the 'ST' exhaust system will be seen by many to be untidy, but unobtrusive and producing a pleasant note. At worst it's nigh on impossible to clean, poorly chromium plated and a 'pig' to dismantle, if ever a bike deserves a kick in the gearbox, it's when trying to remove the expansion box from a G/S or ST.
Less apparent is the fact that having its exhaust and silencer system tucked well out of the way, makes the ST about the least vulnerable bike around when the inevitable fall-over, or fall-off occurs. I don't like the idea of having the left side footrest mounted direct onto the silencer -albeit on a stronger bracket than on early G/Ss. Yet like B.M.W. engineers, I'm at a loss to suggest where else it could go. I'm also at a loss as to why the right side pillion rest should be adjustable, but the left one not so. Neither are either front-seat-person pegs adjustable any longer, but they are hinged and

sprung so that when legs that are searching for the ground need the space where the footrests are, they can be folded out of the way.

Tourers who habitually use soft, sling-over luggage, may find the high level silencers somewhat warming, but the ST silencer is better protected by a metal shield than is the G/S.

Undoubtedly, the greatest benefit afforded by the upswept silencer is to rear wheel removal. Three bolts mount the rear wheel to a 'live axle'. We are told that the new 4 cylinder model (the K100) will employ the same system. We'd applaud it being used on the whole range.

One aspect of the G/S that we would have expected to be uprated on the ST is the seat. Enduro riders don't spend too much time in the saddle ..... but tourers do, and
the ST seat isn't up to it. We like the easy-to-remove nature of this saddle; at the push of a button the whole unit can be lifted clear. Then, at the unlatching of an elastic band, the tank can be removed. That ease of access I really do like, but as a seat for .touring on, the ST's is a non-runner. After 1000 miles it's lifeless and for two it's far too short. Yet by a quirk of coincidence, the seat become unbearable only shortly before the tank runs dry of fuel. Let me explain:

The present 800cc B.M.W. engine is undoubtedly the sweetest to be produced in the last fifteen years. It's smooth, it's responsive and it's torquey, but it's thirsty to the tune of the not too illegal cruising speeds that the ST is very capable of holding for hour after hour ..... well it would be hour after hour if after a spirited 1 1/2 hours you didn't



have to stop for a fill up. Thankfully it's happy to drink the cheapest fuel in the station at 91 octane. What's worse is the stated 19 litres fuel capacity is little more than 15.5 litres in reality. The G/S without recessed filler cap holds 19 litres plus; the ST in theory holds 19 litres, give or take a gallon! Not really the stuff that long haul tourers are made of. Could it be that with the demise of the friction screw, American legislation, this time pollution related, is demanding that more energy be put in, to get similar performance out; especially ones that haul along tall and grossly unaerodynamic motorcycles such as the ST ?

That's a pity, because all in all, the R80ST comes out as the easiest B.M.W. we've ever lived with. It's easy to push around in confined spaces, because it's light (just over 400 Ibs dry) and the bars are high and quite wide, it's easy to pack, especially when fitted with the new style rack and panniers; and above all, it's oh so easy to ride, with gear-changing likely to become a forgotten art, but clunk-less when necessary. Even those high bars don't make problems at high speed if you travel, as I invariably do, with a quite well loaded tank bag shielding you from the wind. At low manoeuvring pace they are a definite advantage over narrow low bars and they provide for effortless high-speed-steering on twisty roads. The G/S is almost excused the affrontary of making its stable mates appear ponderous and broad beamed ..... after all it isn't a tourer, is it? However, the ST confirms that lack of agility by being so nimble and slim. Just ride behind an ST on your R100, and you'll feel a definite urge to put both you and your bike on a diet. If you're on a twisty hilly road, such as abound in the Isle of Man (in T.T. week especially) where some of this test was conducted, I've a suspicion you'll wonder what it is that's holding your bike back as the ST corners and accelerates away from you. However, with that dismally small fuel tank and profuse thirst there's a good chance you'll overtake it at the next fuel stop. In Winter it could also be that you'd be well on your way before the ST rider had even begun if the 15Ah battery fitted performs no better than the same capacity battery did when fitted to /5s. We do not like to anticipate problems that may never arise, but will be monitoring the Winter start ability. Maybe better starter motor gearing and reduced rotating engine component weight will ensure that l5Ah is adequate. With no kick-start fitted to the ST (G/Ss have, and /5s had) we certainly hope so.

To go back to our original question ..... does the ST warrant the 'T' brand in the wake of the G/S? My answer? If you cannot live with the visually unconventional, then the ST it must be. However, when I first tested a G/S I concluded by saying that it was the only bike in the series production that I could happily ride from Marble Arch to the summit of Ben Nevis without stopping other than for fuel. That statement still applies. Depending on how wide your field of touring vision is, if required the G/S will cope with a wider angle than the ST, with virtually no definition or clarity lost at the edges; but even the nimble ST would get part way up Ben Nevis, I reckon. The ST is the acceptable face of G/S'ing ..... and I promise you, that is a compliment without equal that tourers with broad horizons should greet with pleasure - but please B.M.W. if you cannot improve the m.p.g., at least give us the option of a larger fuel tank like you did in the early '70s ..... and increased use of stainless steel where at present, rust doth corrupt. Then we'd be even more enthusiastic about your products.

Vintage Aircraft Club

Vintage and Classic event at Turweston Aerodrome, near Brackley, Northants
On Sunday, September 16th

The VAC invites you to bring along your wonderful old machines to join all the Vintage & Classic cars, motorcycles, goods vehicles, tractors, stationary engines and of course aircraft. Food is provided from both the Cafe by the control tower and also a pig roast out on the field. You can join the parade of vehicles to show the machines in motion to both the fellow enthusiasts as well as members of the public. Entry is free although a donation to the aerodrome owner is appreciated. For any further details please contact either Alan Buckley 01908 503691 alan@flying-aerobatics.freeservc.co.uk or John Broad on 01869 324008

MISCELLANEOUS – FROM THE VINTAGE & CLASSIC SECRETARY

I'm asked many times about the what to look for when buying a pre 1969 machine and a realistic answer is very hard to give. Unless a full documented history is available it is impossible. The tips on buying an Earles BMW given by the 'Amateur Mechanic' in issue 17/2006 are very relevant but really it is a case of 'pot luck' as to what you get. Obviously if there are receipts for engine work by a known restorer the state of the oil slingers is probably okay. Even though the machine may show only 20,000 to 30,000 documented miles on the odometer, in most cases, you have no idea how long the previous owner neglected the machine. You don't know if it stood for many years with dirty oil and condensation. And... don't forget that you don't even know if the speedometer is the original one. The service bulletins of the era recommended the removal and cleaning, or replacement of the BMW oil slingers every 45,000 miles. This recommendation was for engines that were under constant service, which is a lot less demanding than extremely occasional use and neglect.

To understand why cleaning the oil slingers is necessary, you must examine how these engines oil themselves. The pre-1969 BMW engine has a caged ball and caged roller bearings. By the nature of this bearing design, they do not require a pressure feed of lubricant, but only a constant mist of oil. In fact, high pressure, forced feeding of oil to a ball bearing will cause premature bearing failure. The BMW engines have a modest gear pump, which draws the oil out of the sump, via a screened pickup. The oil is pumped out of the oil gallery, onto the face of the caged ball bearing, (or in the case of the R69 and R69S rear main, a roller bearing). The oil passes through the bearing, and hits the face of the oil slinger, (which is a sheet metal disk, with a lip around its entire circumference) where the centrifugal force of the rotating crankshaft slings the oil outward, into this lip.

When this lip fills with oil, it then flows out a hole in the back of the slinger, which lines up with the hole in the hollow rod pin. The oil then flows down the hollow rod pin, through two small holes, to the caged rollers of the rod. The oil constantly exits the bearing on both sides of the rod. throwing oil onto the camshaft, lifters and one of the piston skirts, and then falls back into the pan, to be recycled.

The problem with this arrangement is that the slingers act as a 500 - 5000 rpm centrifuge. Anything in the oil, dirt, sludge, and the ferrous metal from the wear of the rings and cylinders is hard packed into the slingers and no amount of solvents or prayers will remove it. The sludge sticks to a magnet because it contains a lot of ferrous metal from ring and cylinder wear. The only way to clean the slingers is to remove the crankshaft from the case and scrape out the slinger groove. You have no choice. When the deposit gets deep enough, the sludge will then migrate down the rod pin, and plug the two small oil holes, cutting off the flow of oil. The end result is a bad or thrown rod bearing. Crankshaft rebuilding is expensive, and all of this expense can be avoided if the slingers are cleaned on a regular schedule. The BMW crankshafts will run many thousands of miles on the original rod bearings, if the slingers are cleaned or replaced on a regular basis.

A helpful hint is to use a magnetic drain plug in the oil pan. The magnet catches some of the debris and will slow down, but not stop, the deposits in the oil slingers.

After saying all this, machines are known that have covered many, many thousands of miles without the slingers being cleaned out. You take your choice, clean out or wait for the big bang!!

The rebuild of my 1951 R67 is drawing to a conclusion and in a recent Journal I talked about the Knect filter and what I've done to replace the rusted mesh within the unit. The photos show the filter

in position on the gearbox housing and the 'karting' foam filter before being cut to size. The Knect filter transfer is a vinyl self-adhesive one that I had produced and is protected with a light coat of 'Plasti-Kote' water based clear coating that I just had on the shelf. Although in a spray can I used a small brush to apply it. With the vinyl transfers it is imperative that you avoid cellulose coatings as it will wrinkle the surface. Likewise 2-pack, depending on the brand, may also give trouble.


TKM Karting Filter

I've also mentioned the fitting of a LED unit in the repro tail light on the R67. The unit is shown fitted to the light back plate; a very simple job. The output is very good with the 12v system and it uses less current than a normal bulb set-up. It's a pity that I can't say the tail light unit is excellent. Bought from Mark Huggett, hoping for good quality, the unit has a number of glaringly poor points. Firstly, the lip on the back plate that stands up within the rubber back is quite proud of the rubber in places when assembled and the edge so sharp that it could severe a finger. (This will be overcome by filing level and black painting) The actual light unit body looks as if it was hammered out sitting at the roadside in India; come to think of it, it probably was! It has distinct ripples across the body. Don't know whether I'll do anything with it yet.









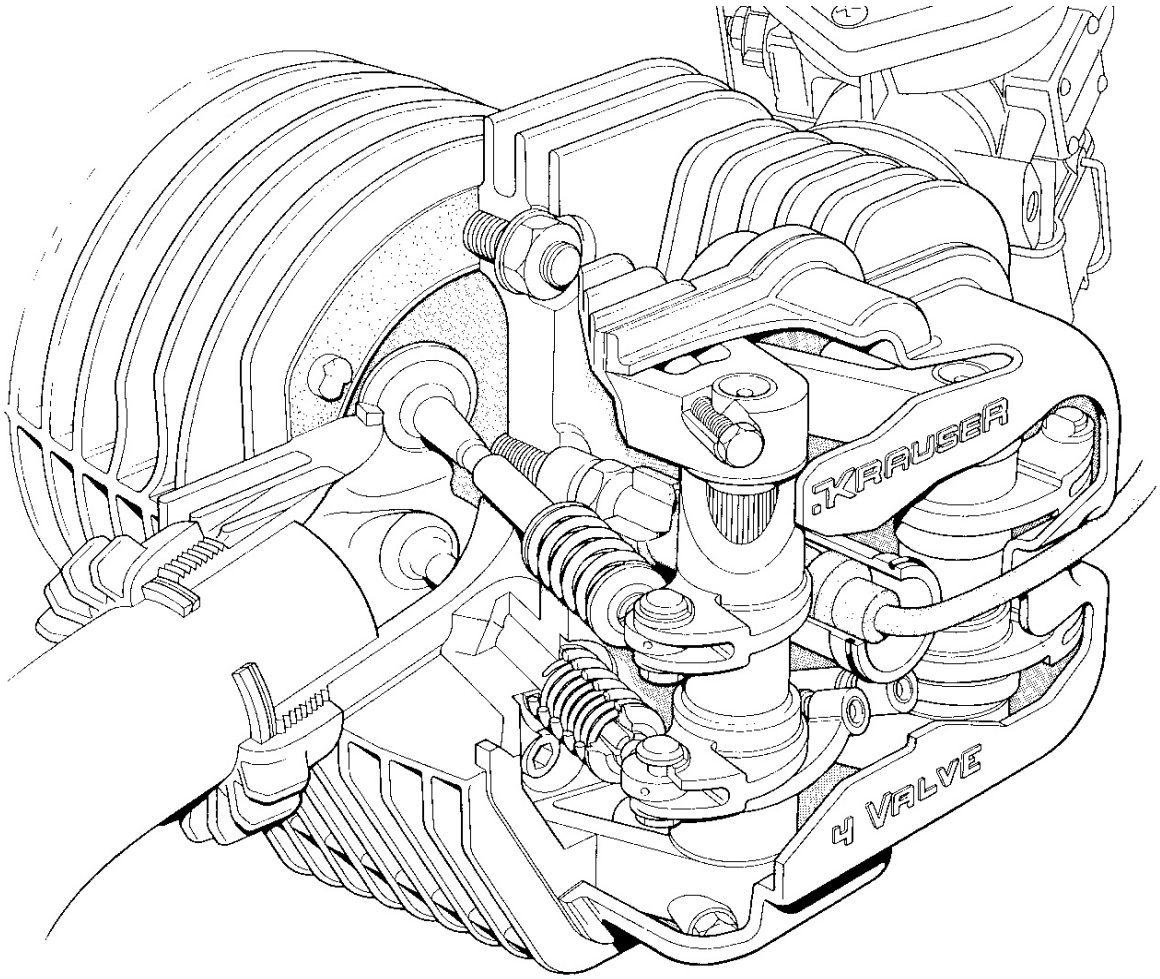
These repro items are manufactured on the cheap compared to the originals and are the only replacements available to the trade but as such should be identified to potential buyers. I do know that some German dealers will actually declare that an item is not the best of quality (for instance steel bell housings) probably to avoid the hassle of returns. An instance of poor quality has shown up with straight pull throttle assemblies. I've heard of the brake levers being easily broken with a slight knock. In fact one member always tapes his lever back when leaving the machine parked at a show to avoid the risk of it being damaged by careless passers-by.

Inspection of my own new throttle assembly showed poor workmanship where the pivot bush is fitted in the brake lever; once more it looked as if it had been hammered in by the side of the road. I've now replaced it with the genuine, Magura 56 year old original that was on the bike when I bought it!

BUILDING A SHORT-STROKE (854cc) ENGINE

by 'The Amateur Mechanic'

I already had enough 'projects' and certainly didn't need any more when the phone rang. It was my local BMW dealer who had just taken an older air-cooled 1000cc boxer in part exchange for a new oil head. In conversation the vendor had asked if the dealer had any interest in the Krauser 4-valve head kit he had bought but never fitted? In turn, a call came to me! Always one for a deal, I enquired how much the vendor was asking. It turned out to be less than ½ the original purchase price. (A Krauser Kit was £760 in 1985) Not only that, but I could have the kit on a sale or return basis and inspect it thoroughly before parting with any money. At this stage I knew little about Krauser 4-valve heads other than their reputation for noise and the ability to wear out camshafts in double quick time! I'd seen them in photos and on the odd bike here and there but never considered trying to buy a pair. However, they were a bargain



Having bought the kit I then had to decide exactly what to do with it. You see, I don't actually own anything with 1000cc barrels, the only thing the 94mm Krauser 4-valve pistons would fit!

When BMW started their serious off-road programme (which eventually led to the introduction of the worlds first 'big' trail bike the R80GS) they built a number of ISDT bikes with 854cc engines. Possibly because this configuration produced a narrower engine more suitable for off road competition. These were basically R45/65 crankshafts (61.5mm stroke as against 70.6mm in the other models) coupled to 94mm (1000cc) pistons to give a swept volume of 854cc. Latterly using special pistons made by, for example, C&C Products in the States and (considerably) overboring R65 barrels a number of these 854cc engines have been built. (You may have seen examples built by Richard Difazio at Classic Bike shows)

As luck would have it I had a few R45/65 engines 'lying about' including a very low mileage R45. I decided this would make a suitable 'donor' engine for my project. There are advantages in sticking to the R65 barrel, boring it out and fitting a larger liner, not least that the angle of the pushrod tubes is correct. The disadvantage is that, having been taken out from 82 to 94mm bore by fitting a new liner, remaining wall thickness in the aluminium barrel is reduced to about 4mm. I decided therefore to use non-nicasil 1000cc barrels on my project. Unfortunately I wasn't the only person looking to buy these barrels. With the micro-light aircraft brigade fitting air-cooled boxer engines demand had really pushed the price up. I was offered several pairs complete with pistons (which I obviously didn't need) at prices varying from £200 to £300. With plenty of other projects in hand I decided to bide my time. Eventually, about 18 months later at Kempton Park auto-jumble, I acquired barrels with pistons (and a load of gaskets, new rings and other parts) for £20! Patience is a virtue!

I started by stripping and checking the bottom end. Even though the engine had only covered 24000 miles I wanted to make sure everything was as it should be. I fitted a sports camshaft from stock, whilst retaining the original canister points system. I know people say how much better these engines perform on electronic ignition but I'm of the old school and like to be able to fault systems easily.

As I was attempting to build a 'sporty' engine a post '81 light flywheel and associated new clutch plate were installed

With the bottom end completed I tried to fit the flat top 4-valve pistons. On the shorter R45/65 conrods the bottom of the pistons fouled the webs on the crankshaft at the bottom of the stroke. Now I could have simply machined the bottoms off the pistons until they cleared the crank, and subsequently re-balanced them. However, if the project were to prove a failure I would be left with a modified pistons and a Krauser kit that might therefore prove difficult to sell…So I replaced the shorter R45/65 rods with a set of longer conrods from a 70.6mm crank and solved the problem without having to alter the pistons. The longer rods on the short stroke crank should give better cylinder filling, one reason the R69S stuck with 130mm rods when the R60/2 went to the 125mm rod in 1960.

It was now necessary to calculate the amount the 1000cc barrels had to be shortened. This wasn't simply a case of subtracting 61.5 from 70.6 as the new rod length needed to be taken into account. Unlike the standard piston, no part of the Krauser piston projects above the top of the barrel. By reducing the swept volume the compression ratio had also been reduced from the original Krauser 10.2: 1 down to 8.88: 1. Because of the pistons flat top extending to the very top of the bore, all the compression takes place in the head and valve recess' and it therefore simply isn't possible to increase the compression ratio above 8.88:1. In the end 5mm needed to be removed from the barrel. This was done at the base, because there is more material to work on here and you don't need to reduce the number of cooling fins. I used non-nicasil barrels as I was unsure what might happen to the nicasil lining under machining.
Obviously the valve pushrods supplied in the kit were now also too long. The Krauser items are much shorter than the standard pushrod anyway as they don't extend through the heads that have a sort of extended 'cam-follower' running in them. Once again, for reasons explained earlier, the pushrods were re-made by shortening standard rods, leaving the kit items original.

Now the heads etc. could be fitted and all that remained was to locate some suitable carburettors. As the inlet tracts were 40mm (as are the exhausts) I intended to use a pair of 40mm Bing carbs that were to hand…then I was offered a new pair of 40mm Dellorto's at a bargain price, complete with tuning instructions and a range of jetting so… Although they have a reputation for losing their tune easily I thought it worthwhile on this project for the extra performance they should give. Time will tell!

How does it perform? Well, as I said at the start, I don't own a 1000cc boxer! I did consider putting the engine unit in my R75/5, but as that's pretty original and I've owned it from new that idea was dropped. What I needed was a purpose made rolling chassis. More work! So, to date, the 5 speed gearbox and the bevels are built and now I need to work on the cycle parts. There's this old mono-shock frame that's been hanging around for a while now…. As I said at the start, I really didn't need another project but I'll keep you posted as, and when, this one progresses…

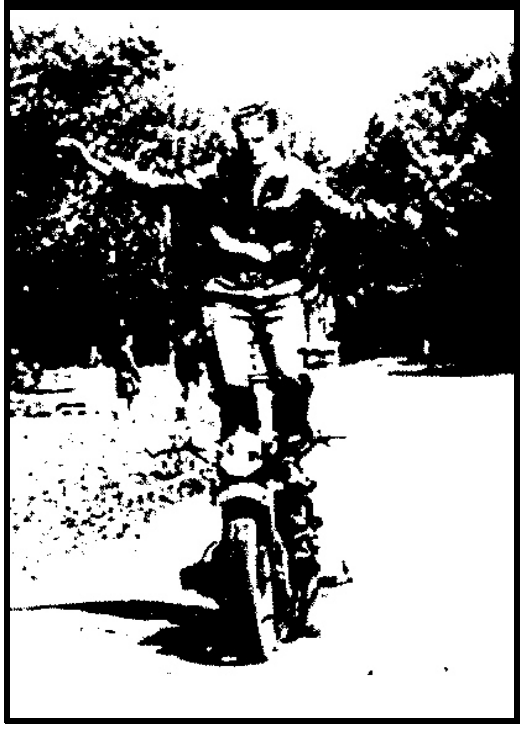
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The machine left is an R26 belonging to American Herb Torbin who is competing in the U.S. Classic Race Series.

Stop Press

Government introduces additional requirement for MOT Test.



Newsletter Compiled & Edited by Malcolm & Wendy Mc Nair
27, Syon Gardens, Newport Pagnell, Bucks. MK16 0JU
Tel. 01908 216623
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