



# The Oz Vincent Review

*Edition #83, January 2021*



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# Maintain Yourself First, and only then your toys

Welcome to the January 2021 edition of OVR ; and to a very infrequent editorial, based on my up close and personal experience.

Just like our cherished bikes, our own bodies need regular check-ups and the occasional maintenance to keep them travelling along life's ever evolving road. And that is why this edition of OVR has been delayed. At the time I should have been working on the January 2021 edition of OVR I was recovering from prostate cancer surgery.

Now 75 years old, for many years as part of my regular annual health checkup I have been having my PSA (Prostate Specific Antigen) checked – just a quick, painless and simple blood test arranged by my local doctor (GP). Around 5 years back there was a slight, but noticeable increase in my PSA level so a biopsy was performed. That was done as a day procedure under a light general anesthetic and the good news at the time was that nothing untoward was found.

At my last test, just 6 months back my PSA level had jumped up from less than 5 to just over 10. Another biopsy was performed in October 2020 and evidence of Prostate Cancer was found. BUGGER!

December 11,2020, I had a robotic radical prostatectomy [CLICK to learn more](#) with the subsequent pathology of the removed tissue revealing that I did have a grade 2 cancer but it was totally contained, with no escape outside of the prostate. While the cancer is contained in the prostate the recovery rate is close to 100%. But if the cancer escapes and gets outside the prostate that's when the shit hits the preverbal fan and the chance of recovery and ongoing life expectancy is dramatically reduced.

A little-known fact is that world-wide more folk, irrespective of their gender, die from the effects of Prostate Cancer than those who die from the effects of Breast Cancer. Approximately 3,500 Australian men and about 35,000 USA men die of prostate cancer each year. Prostate cancer is the second leading cause of cancer death in American men, behind only lung cancer. About 1 man in 40 will die of prostate cancer. **Don't you be one of them!**

Also not widely appreciated, is that while the majority of Prostate Cancers are diagnosed in males over the age of 60, it can present in much younger men as well.

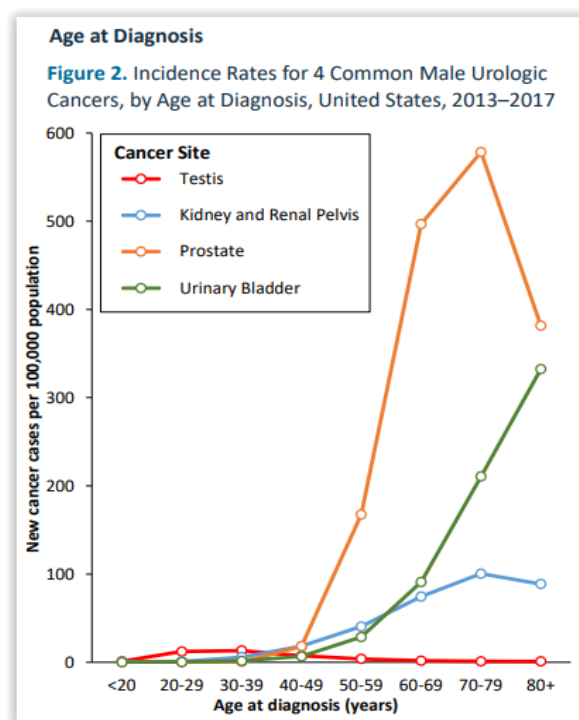
Untreated, you WILL eventually die.

[Young prostate cancer patient discusses robotic prostatectomy](#)

[Another persons experience](#)

With regular PSA testing and early diagnosis and treatment, the recovery rate for Prostate Cancer is over 98% while the cancer remains contained within the prostate. BUT if you muck about, don't have regular checkups, even though you may feel fine, if you fail to have a regular PSA check, if when you are eventually diagnosed, and the Cancer has spread beyond the prostate, the recovery rate plummets. Yes, I am repeating myself – but I figure it's worth doing so.

**Not me did you say?** Prostate cancer is an age-dependent disease, which means the chance of developing it increases with age. The risk of getting prostate cancer starts to increase from around the age



of 40, by the age of 75 it is 1 in 7 men. By the age of 85, this increases to 1 in 6 men. If you have a first degree male relative with prostate cancer, you have an even higher chance of developing it than men with no such history. The risk increases again if more than one male relative has prostate cancer. Risks are also higher for men whose male relatives were diagnosed when young. Are you really prepared to make that gamble with the rest of your life?

[CLICK HERE to learn more about prostate cancer.](#)

**Got the message?** Have your annual PSA test so we can all enjoy motorcycling together into the future. Life is too short to muck about.

Back to me, to the chagrin of some, I am well on the way back and expect to be terrorizing otherwise quiet local country roads on my Comet in the near future – Ride them, don't hide them!

Remember, to access the complete OVR archive from any device, just go to the OVR web site <https://ovr270.wixsite.com/ozvincentreview>

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### Letters to the Editor

Hi there Martyn,

Regarding Engine No. F10/AB/1/204 in OVR Issue 82

I was just reading the piece on ATDs and remembering reducing the overlarge range on one by spotting in a couple of welds and filing back to bring the total advance to as was.

Moved past the Matchless item, and, jeez, what's this!

1962, I'm 18, I had bought the Paul Richardson book, I think the year before from the shop of a former Manx TT racer, Johnnie Weddell, in Clydebank, Scotland. Someone had ordered it and not picked it up. 10 shillings 10/-. Still got it. I'm an apprentice in John Brown, shipbuilders. Johnnie's shop is just across from the bottom gate. The reason, the look of these machines, and a plumber in Brown's had an outfit. He would tell me of coming to work, at over 100 MPH if late. His nickname was Louie the lug (Scots, ear) one of his ears being deformed for some reason. Now, I used to go to a breakers called Ross Motors, in Glasgow, who were in a vast building which I had been told was a ex meat preparation place, to get bits, I remember a 500 matchless single motor one time. They also repaired Invacars.

So I'm three flights up, at the counter, and I idly ask Mr. Ross, I actually think he was Polish, really heavy accent, if he has any Vincent bits. Follow me, he says, and we go along a huge line of parts, till he stops at a Vincent twin crankcase, with the double cylinder studs. Nothing else, the crankcase, with the wheels/rods, and gearbox internals, and gearbox nearside inner cover. Oh, and the primary chain had let go, punching out maybe five inches of the chaincase wall. From about 9.00 to 1.00 o'clock How much, I said. £4.00. Right, I'll take it.

Struggled it down the stairs, and onto the carrier of my mother's Lambretta, and home, one flight up in a flat.

In the yard, I got a piece of alloy bar, maybe 1/2" \* 2" , Browns were building frigates at the time, (as an aside, the hulls on these were about 3/8" alloy sheet. I used to wonder how they would stand a bit of shell-fire).

Heated bar in the electricians shop, that's what I was, and bent into an approximation of the chaincase front curve. I had stripped the cases, and smuggled them into the yard. Took my bits to the coppershop, and asked one of the welders to, must have been tigg, weld it in. Thank you was 20 fags, the currency in the Clyde yards. Don't insult by offering cash. Filed down to curve by hand, faced by hand, drilled, tapped.

I was acquiring parts, UFM from a Comet, timing cover same, with the undrilled back cylinder oil feed drilled out with an extended/welded drill in a pistol drill, by eye. Big drill for the spindle seal seats. Two front heads,, ordered Goldie 500 pistons, 85mm. Barrels no remember, bored to suit. Norton f/forks, modified Norton swing arm, Vin back wheel, Rear subframe was chrome-moly tube, bent, welded, from plumbers shop. Vin tank. Norton seat.

1964, finished, running. Phones up the road tax office. Give it a frame number, and bring it in so that we can see it. So I got it on the road.

A lot of recurring problems in the timing chest, big alloy idler wearing teeth, alloy idler stand, eventually remade in steel. This, of course, was the years there were not a lot of spares. I dropped a letter to Harper Engines, they sent me a parts book. But they didn't have a lot of parts.

One day, I'm going up to my lock-up, no helmet, because it was just up the (straight) road, and the bike went into tank-slapper. I made plans to get my arms over my head, as I came off, but it pulled out. I Never did not have a helmet on, ever again.

That was the decider, I acquired a featherbed, got templates for engine plates, alloy plate from you knew where, and turned it into a Nor-Vin. That was marvellous. The braking was not too good, so I made a twin-leader by reversing one shoe and using the rear of the cams as the pivoting area. What a brake that was, till the drum expanded, and the lever was against the throttle.

Fast forward a few years, I've started a one-man garage, having fallen into the trade, by having a lock-up beside a large bike and car saleroom, who asked me to do bits and pieces for them. Built a compressor from an Ariel Colt engine and a washing machine motor.

The bike is in bits, stored as I'm using a car, and working on cars, frequently, seven days a week. Oh, and by the way, I've bought another twin crankcase, with internals, for a £ tenner.

We're up to about 1975-6, I've bought premises, 2-3 mechanics, and start rebuilding the bikes. Looking at the things I had previously done, now seemed a bit agricultural in places. I remember, on the Nor-Vin, to fix mag. problems, I made a twin point, twin coil ignition system. Honda points; Also 10mm central plugs, Royal Enfield decompressors in the old plug holes.

Built up another from the £10 crankcase, I suppose bits from the Nor-Vin, MK 1, plus bits acquired.

Now comes the kicker, about 1980, we decided on a change to, if possible. Australia.

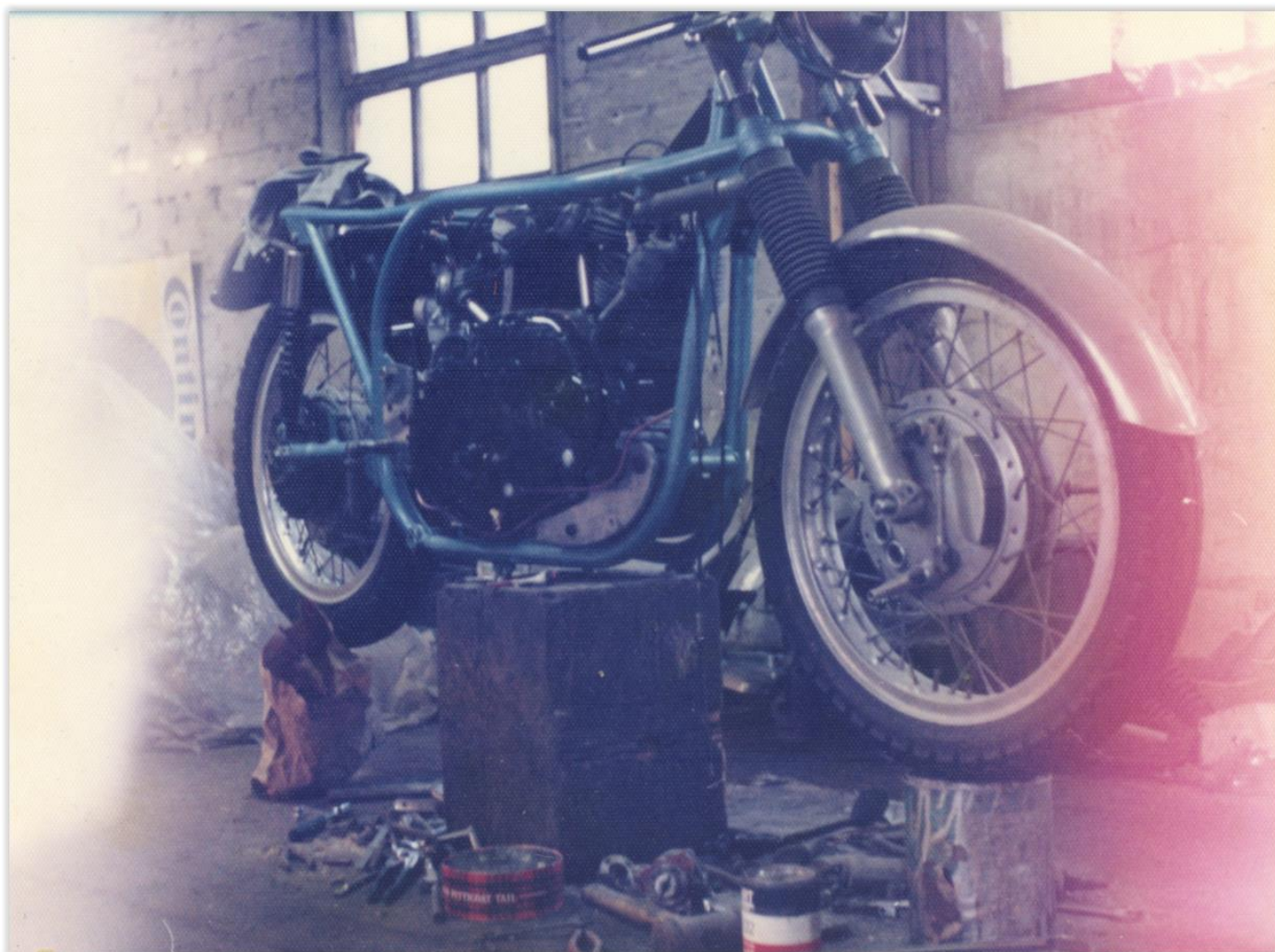
So application successful, we arrived in Perth, worked in a plant that a fellow-Scot got me into because one of the guys was off sick. A while later, we decided to see Melbourne, did I mention with all my tools, and the bikes. Pitched up in Frankston, I think it was.

Tail end of 82, time passes and my wife was missing her folks, daughter approaching senior school, so we decided to come back to Scotland. Sold the bikes for cash, the Nor-Vin to a guy who, he said, had lost everything he had in a bush-fire. The other, the Vincent, had an engine number in the 2000s, I think.

So there you are. I don't think a week, goes by without me regretting selling. I've got a Comet now, and a 350 Goldie, but the twins are just so much more.



I've attached the only photo I have, and the camera was faulty. Had a lot, but lost them somewhere. I was going to just put in a few short sentences, so chop this diatribe down to however much you want.



Another wee addendum, before selling the Nor-Vin, a guy had contacted me with a deal, he had a Aus. stamp collection, and wanted to do a swop. I knew nothing of stamps, so said no.

Two, maybe three, years we're back, and a friend of ours comes into the garage we had, with a young cousin in tow. On holiday in Scotland from Aus. Who is he, jeez, he's just the son of the guy with the stamp collection. Small world.

Regards, Ken Johnston, now back in Scotland.

**DO - YOU**  
**NEED THE TEST?**

#AskPCFA



Prostate Cancer  
Foundation of Australia

| [psatesting.org.au](http://psatesting.org.au)



# Amal Spanner Sizes

## Pre Monobloc 276 & 289

Needle Jet	3/16" BSF or 1/8" Whitworth
Main Jet	5BA
Holding Up Bolt	7/16" BSF or 3/8" Whitworth
Banjo Nut	5/16" Whitworth or 1/4" Whitworth
Outlet Clip Screw	3/16" BSF or 1/8" Whitworth
Float Chamber Lid Bottom Feed	5/16" Whitworth or 1/4" Whitworth
Float Lid Clamp Screw	3/16" BSF or 1/8" Whitworth
Platform Plug Screw	3/16" BSF or 1/8" Whitworth
Throttle Stop Screw Locknut	3/16" BSF or 1/8" Whitworth
Mixing Chamber Union Nut	9/16" BSF or 1/2" Whitworth

## Monobloc

Banjo Bolt	5/16" Whitworth or 1/4" Whitworth
Float Needle Seating	1/2" BSF or 7/16" Whitworth
Tickler Body	1/4" BSF or 3/16" Whitworth
Pilot Jet Cover Nut	3/16" BSF or 1/8" Whitworth
Main Jet Cover Nut (original)	3/8" BSF or 5/16" Whitworth
Main Jet Cover Nut (new)	7/16" BSF or 3/8" Whitworth
Main Jet Holder	1/2" BSF or 7/16" Whitworth
Main & Needle Jet	8mm or 5/16" AF

## Concentric MK1

Jet Holder	5/16" BSF or 1/4" Whitworth
Banjo Bolt	5/16" BSF or 1/4" Whitworth
Main & Needle Jet	8mm or 5/16" AF

## Concentric MKII

Jet Holder	5/16" BSF or 1/4" Whitworth
Banjo Bolt	5/16" BSF or 1/4" Whitworth
Main & Needle Jet	8mm or 5/16" AF
Drain Plug	20mm
Cold Start Plunger Nut	13mm

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## OVR Event Schedule

Date	Event	More Info
Feb 21, 2021	VRV* Section Meeting	<a href="mailto:sec.vrv@gmail.com">sec.vrv@gmail.com</a>
March 14	VRV Day Ride - Alexandra	
April 18	VRV Section Meeting	
May 16	VRV Day Ride – twin spurs	
Sept 2021	Australian National Vincent Rally, South Australia	<a href="mailto:vincenthrdclubsa@gmail.com">vincenthrdclubsa@gmail.com</a>
Nov 19-21	VRV/OVR Over The Top Tour	<a href="mailto:ozvinreview@gmail.com">ozvinreview@gmail.com</a>
March 2022	Tour around Tasmania	<a href="http://www.tassietour.info">www.tassietour.info</a>

\* = Vincent Riders Victoria

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# Smiths Chronometric Speedo Gearbox Woes

A Contribution from Andy Rackshaw, New Zealand

I am a qualified and experienced instrument technician with specialist training on the older Chronometric Speedometers and other related instruments (courtesy of the British army boys service) I am a long time Vincent enthusiast and a member of the NZ VOC and they call me a grumpy old bugger sometimes!

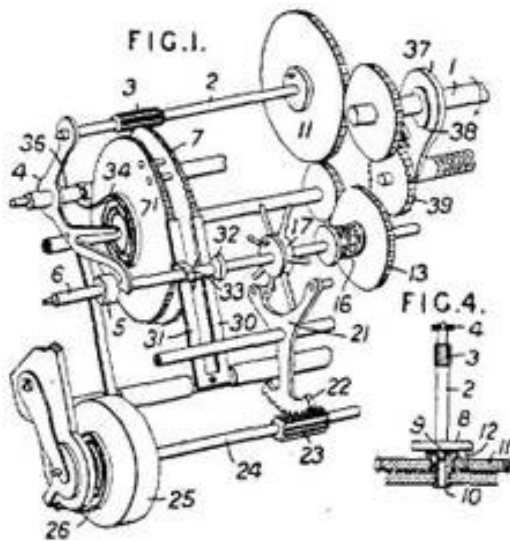
So here is something to entertain or inform you

The subject of this article is to try and address the bane of the 5 inch Smiths Chronometric speedometer - the little right angle gear box on its back

This subject has been around now for many years and it might help to reflect here on the chronometric history 'just a little' without the boring bits!

The Smith company purchased a French company a hundred years ago and inherited the design tooling and jigs for many of their products they made and Smiths used the name Jaeger for some time

This is a picture from the original patent and a standard chronometric movement this one from a Vincent with the little gear box removed



When big Phil was finishing off the Black Shadow he thought a big speedo would be a nice feature for the new bike and so he chose a speedo from a race car, put it on the bike and finished off the tatty looks of the instrument back with an alloy saucepan - the case of these instruments were mostly made from Phenolic Resin injection moulding - the same stuff used in old telephones - a thermal setting plastic



Here is a an old race car 5 inch chronometric (left) and a copy made by me of the one used on the original Black Shadow





The instrument guts were of French design and everything was metric! unfortunately the threads were not from a metric standard - standards were only just beginning to come into vogue in those far off times and so we are lumbered with some pretty obscure threads as an example the dial screws are 2 x 0.45mm pitch the modern metric standard is 2 x 0.4mm The bezel thread on the 80mm body (yes 80mm not 3 inch) has a pitch of 0.9mm - Smiths never attempted to change to the BA standard instrument threads on these speedo's (also metric by the way)! Except for the two studs on the back of the case they are OBA (This is also 6mm) the light fitting is 5/8" brass and the cable connection is 12 x 1mm. A dogs breakfast!

Vincent were probably visited by the Smiths sales people and it was on these occasions that instruments would be specified for the various models - I am guessing here but when these people saw what was being specified for the Black Shadow they would have offered to make the distinctive cast alloy case and the right angle gearbox - big Phil would have asked for exclusive use of this instrument and Smiths would have agreed to this except for the right angle gearbox - read on.

Its interesting to reflect on the reason for choosing this expensive and complicated instrument when there were much cheaper and simpler instruments available - the reason was quite simply that the chronometric movement is 'rugged' and can tolerate the vibration from a bike where a magnetic instrument would simply have just fallen apart in quick time! - I know Smith in the end did produce a magnetic instruments for our big vibrator bikes but they had to go to some lengths to isolate the magnet movement from the case with rubber isolating mounts all through the instrument and this made it all 'Cost Effective' the weakest part of a magnetic speedometer is the hair spring and the hair spring on a chronometric instrument is substantial (there are a 195 different parts in a chronometric speedo or there were last time a tried to count them! Hence the cost!)

The guts of the 5 inch instrument were no different to any other chronometric movement except there was a need for a right angle drive on the back for the Black Shadow instrument otherwise the speedo cable would look ugly just sticking straight out from the back of the speedo and appearances were very important (the saucepan!) so a right angle drive was specified to enable the the cable to follow the line of the forks

Here are a couple of pictures showing the original gear boxes on the back of an instrument recently completed for a customer and a dismantled 5 inch speedo, the chronometric movement itself is identical to an 80mm instrument



The little gear box on the back is also fitted to the 80mm speedo on a Sunbeam S7 and S8 motorcycles and maybe a couple of other obscure bikes

Now this little gear set is the achilles heal of the 5 inch 150 mph speedo and over the years many owners have had to either fit new gears (now completely unobtainable) or fit a little gear box found on the back of some older Jaguar and Rover cars and thus spoil the looks of a nice looking



instrument! Clearly the gears were just too small for the job they were expected to do - there are many Japanese made speedometers with gearboxes on their backs and I have never had any problems with these mostly plastic gear sets mainly because they are twice the size of our little gear box

These little Jaguar gearboxes are also not up to the job very well with their nylon gears but at least once the chronometric movement has been changed to a 'straight drive' frame chronometric movement the little Jaguar gear boxes were easily replaced once they crap out - there are probably a number of the old chronometric speedo parts lying around some place as a consequence of the inadequate gear set specified by some dick in the Smiths drawing office - I swear the material specified was no better than the very finest grade of nicker elastic!

This is the guts of the Jaguar gear box with both left and right hand gears - shown here also is a complete gear box made by Smiths.



This is one of the original gears from the our little gear box - this one is badly worn and is now useless and believe me there are no more spares world wide even Dennis Quinlan and his successor have none.

This is the guts of the gear box on the Jaguar front wheel and although the gear are more substantial they are a 1.5 to 1 ratio so no good to us here we need 1 to 1

But fear not! - the answer as they say is at hand - read on.

I had a bit of a brain wave (not bad for 81 eh?) and decided to take a close look at the little gear box found in an MG 'B' fitted with overdrive this gear box is also made by Smith but from a better part of the factory and a different draughtsman! (This idea is also used on a number of other makes of car but lets not get too involved with that).





The speedo cable in an MG is led in typical fashion from the back of the gearbox and would snake around the floor pan and find its way up to the speedo - and so in order to make things a little tidier a right angle gear box is attached to the output at the back of the gearbox and this allows the cable a rout through the tunnel or just outside of the tunnel up to the speedo and a makes for a much tidier arrangement and a shorter cable

On closer examination the gears are entirely acceptable and are hardened and ground (whoopee!) - the ratio is 1 to 1 and the direction is correct only criticism is that in engineering terms the drive gear becomes the driven gear - this is of no consequence in this case and works just fine

Hope you are still with me here - wake up at the back!

This is how the finished gear box will look.

Here is a comparison of the old and the new bits and now the fun begins - read on



And this is the drive gear the cable fits into. On this gear the funny depressions form the square hole for the end of the same size cable we presently use to engage in the hole in the end of the gear - notice how nicely made the gear wheel is with substantial teeth nicely cut hardened and ground teeth and notice the difference to the original gear in the picture above.



The MG gear box is turned over and is as seen above on the back of our speedo upside down luckily the case of the gearbox is a good quality alloy and is easily machined - the biggest problem is to fit the large gear to the spindle this operation requires a good lathe and some machining skill I am happy to share this with you but am also happy to provide a complete service and conversion to your speedo, I already have a number of the gear boxes here ready to go, I also have some complete instrument for sale;

Contact me by email to [rackstraw@nowmail.co.nz](mailto:rackstraw@nowmail.co.nz)

Here are a selection of pictures to show the complexity of the job.





# THE PERFECTLY CENTRIC NER-A-CAR

An OVR Original contributed by Richard Faulkner

It reminded me of a picture once seen on a T shirt. It was a cartoon of two sailors around a table with beers in hand. The caption began IT BEGAN LIKE ANY OTHER PARTY then underneath EXXON VALDEZ but fortunately this all ended well c.f. the Exxon episode but it might have not.

I had recently become acquainted with a friend of a friend and he was kindly trying to help me with getting a 1905 Bruneau to show any signs of life what so ever. That is an issue still in train. Then he phoned me up and said that he was selling his 1925 Ner-a Car and seeking, as he put it 'someone cashed up and eccentric' so thought of me. Now I take exception to this as the 'cashed up' term is a very loose concept, open to misunderstanding and I am certainly not eccentric - it is the world that has its head located per rectum not me. However in view of the subject matter I was prepared to overlook this overture as I had known about Ner-a-Cars for over 50 years, their iconic (read bizarre) image and mechanics.



1925 Ner-a-car

Not a giant, but a machine designed for Hobbits!

If anyone wishes to read a sensible account of the Ner-a-Car I would strongly recommend the splendid article by Paul D'Orleans in the Vintagent which comes up on Google. I have no intention of competing with such erudite efforts but he did a test run on a borrowed machine and then returned it just like a modern journalist would do. I on the other hand will give the Exxon Valdez approach.

*Editor: Stylish photo of the author on 'his' ner-a-car adorns the front cover of this edition*

The previous owner, Carl Montgomery was completely upfront with me pointing out the current state the machine was in and things which 'were not quite right'. I was and still am completely happy with his approach and indeed very grateful for the opportunity to lay hands on such a wonderful piece of kit at such a sympathetic price. Thanks Carl.

It is here that we depart from the usual road test commentary and get personal. The machine itself is not 'normal' and hence its attraction. Three forms of the 2 stroke engine were made by Sheffield



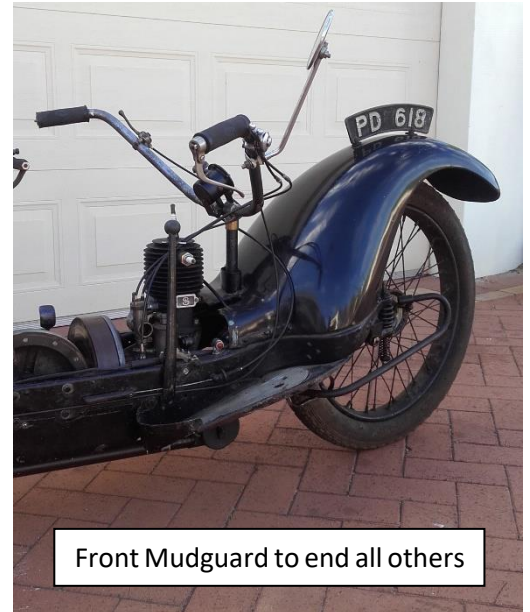
Simplex in Sheffield U.K., so it does have British heritage. About 6500 were then completed in the U.K. and the other 10,000 shipped to New York for the completion of construction. This must have been a significant production run for the time but still was less that expected / hoped for by the board of directors overseeing the project. The last of the production reverted to a Blackburn 350cc four stroke engine with conventional gear-box. Mine is the 285cc 2 stroke with 'infinitely variable' gear ratios. More of that later.

The consumer market seems to have been identified from the start in that the moving bits were enclosed making it especially suitable for women and priests so that skirts did not get entangled in mechanism. It appears that much of the U.S. sales went to nurses and a Gladstone bag was the norm for the luggage wrack. Carl cleverly put the electrics in the one fitted here. The photos below have the protective cowls removed

otherwise no one would see anything.

Incidentally if any reader has a Black Prince up for sale please run it past me. I would promise to christen it Archie and treat it with all the respect its royal heritage inspired.

It is of note that the designer, Mr Neracher (yes, that was his name so providing the pun) had clearly seen a 1904 Zeneth as per the one that was sold at Shannons Auctions, Australia in December 2020 for a significant amount of money despite not being in the first flush of youth. Pity about the bottom line as I lusted after it but a 5 figure sum for a wreck is too rich by far.



Front Mudguard to end all others

Back to the Ner-a-Car. The first feature that strikes is the bizarre (and that word will get repeated ad nauseam but the the Thesaurus can only go so far) front mudguard. Other designs were made but this is the model with the most bizarre and the most delightful. Then comes the hub steering which was meant to impart stability and comfort. It does not despite lavishing attention to the linkage bearings, wheel etc. Handling is frightening and I am used to things that have all the characteristics of a ferret. For those not familiar with ferret husbandry, ferrets are traditionally transported in the trouser pocket to defer detection whist poaching. The story is that they lick just before they bite. Ferrets are carnivorous and have a well defined dentition.

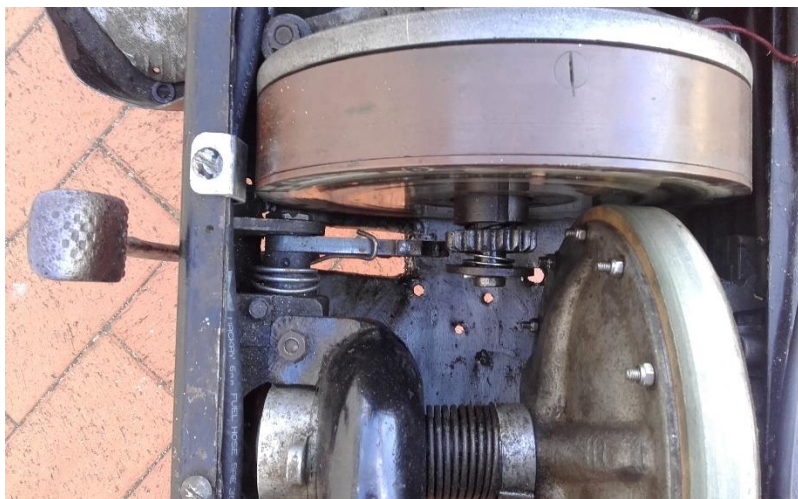
The story goes that once under way the handling smooths out and becomes stable. I posit that this is in no way attributable to the design, just the gyroscopic effect of the wheels moving faster. At low speed the combination of endless links in the steering, the design of the front hub, the fragility of the frame, the position of the handlebars around the ankles etc make for a fair helping of terror in confined spaces.

The terror is in no way ameliorated by the 'clutch' sytem. Of dear, how does one begin?

Deep breath and ..... The single cylinder engine is mounted with the crankshaft longitudinal and a significant fly wheel to the rear. Originally there was a magneto in the flywheel but Carl had cleverly used a constant loss battery in the Gladstone bag to a solid state discharge system so that starting is very good indeed by 2 stroke standards. From the fly wheel the drive is taken up by a wheel fringed with pig skin







which can be positioned at various points along the radius of the fly wheel by means of a lever. Although described as infinity variable this is nonsense since if the wheel is not retained it will just fly to the edge of the circumference. There is therefore a lever with 4 effective notches on a ratchet which hold the wheel in specific positions on the radius of the fly wheel.

Overlooking the the pigskin and the mechanics for a movement, so far the bizarre is being held at bay until the 'clutch' arrangement is revealed . This

consists of moving the drive wheel on and off the flywheel in a radial movement activated by a twist grip on the left handlebar.

As they say in scientific papers where the authors do not have a clue ' the reason is not immediately obvious' for the use of a twist grip as one needs at least a couple of turns to effect engage / disengagement (please see reference to terror above). For those of steamer stuff with no thought of self preservation, this is of no concern as there are two brakes, both on the rear wheel with nothing on the front, activated by the left foot and the right hand lever. These are drum brakes and the foot one is surprisingly effective. The throttle is controlled by two levers on the right handle bar controlling slide and mixture but there is another one on the left side passing into the bowels of the carburettor which is clearly involved with alchemy and is still on the myth list.

Thanks no doubt in no small part to Carl's electrical set up the machine starts well and having got the gyroscopic effect working will allow progress in the 30 mph region. It is quite possible that it would go faster but the tester lacks the minerals to confirm the hypothesis. Septogenerians heal slowly at best. Currently I am trying to source a double-breasted three piece suite that will accommodate my girth and a 'safety bowler' which were protective helemts disguised as bowler hats fabricated in the 1950/60s to make a sympathetic riding outfit for the machine.



Sphincter activating centre hub steering

So can I recomened the machine to a prospective buyer?

This of course depends entirely on the perspective buyer and what their expectations might be. If they are requiring a crisp performance on a daily drive in traffic in a modern city I would be less than positive. If on the other hand a bizarre, whacky, interesting, iconic, simple, affordable classic is required, oh my word, the answer is yes.

Please note the word eccentric did not appear.



## The 1928-32 493 c.c. "Sloper" Model

**B.S.A.****Part I.—Engine Details for One of the Most Popular Small Heath Models Made Between the Wars**

**H**ERE it is at last! Of the many requests for this or that model to be featured in our Service Series before it ended, those mentioning the famous old B.S.A. "Sloper" have been most frequent. It is fitting here to say that to compile data for an article of this kind it is desirable, if not essential, to have access to major components (so that the artist can draw them) and also to manufacturers' detailed drawings in order to be able to quote dimensions. The absence of one or other of these facilities has forced us to disappoint numerous owners of now defunct *marques*.

Thanks, however, to the enthusiasm and energy of my colleague John Griffith, a keen vintagent, and to his friend R. Thornton Rigby (owner of a suitable "Sloper"); to the unending co-operation of B.S.A.'s Design Department, in the person of Arthur Lupton; to the patience of Len Crisp, who saw to the dismantling of the unit and then put up with artists and journalists tramping all over his shop (and drinking his men's tea) for days on end—thanks to all these people, we now present the "Sloper."

With 80 mm. by 98 mm. bore and stroke dimensions, the engine size conformed with the 493 c.c. swept-volume measurement long favoured by Small Heath designers whose aim with the "Sloper" was the establishing of an all-purpose motorcycle with the accent on utility and general touring purposes; a model for series production over a period; the foundation, as it were, of present B.S.A. policy.

**Dismantling Procedure**

Interesting trends of the period become apparent as the engine is stripped; removal of the domed rocker-box cover reveals the rocker mechanism and the use of little coil springs in tension, provided as auxiliaries to the main valve springs. Tappet settings are made by means of screwed adjusters and lock-nuts at the inner end of each rocker. The rockers are supported on roller bearings, another indication of quality design methods. Lock-nuts at the off-side end of each rocker spindle are used to locate and secure the spindles which, threaded, shouldered and screwed into the housings, can be withdrawn from the near side. If you have no jig or fixture for rigidly mounting the cylinder head on the bench, then carry out this dismantling of top-end components with the head still supported by the cylinder.

Inspect the condition of the rollers: there should be 11 to each race (total 44); the spindles are bored for lubrication by grease-gun and obviously the drill-ways should be thoroughly cleaned out and the rollers packed in grease when reassembled. It is a good idea to complete this part of the work

and also any jobs required on the cylinder head before continuing with the rectification of deeper-seated trouble. Renewal of valve guides (provided that you can get spares) is simple; both guides are a press fit in the head and should be driven in up to the flange. Normally guides were available with a range of O/D sizes varying from .5620 in. to .5645 in., so that a degree of selective assembly was possible. If you are lucky and manage to get spares then, when the new guides are fitted, the valve seats should be cleaned up with a 45° cutter. It is necessary to be pessimistic about spares of all kinds for the "Sloper" series and the owner would be wise, therefore, to refrain from disposing of any part until he is sure he can replace it.

Removal of the rocker box leaves you free to extract the upper push-rod tubes (complete with top oil-seals) and the base spring, the purpose of which is to press the tubes upward, keeping them firmly in contact with the rocker box. You cannot withdraw either of the push-rods until the lower tubes have been taken off; each has a hexagon, and by this means you can unscrew it from the tappet guide after the retaining spring clip has been slackened. Within each of the lower tubes is a flange locating a second

**USEFUL DATA****FINE-LIMIT DIMENSIONS**

**Rocker Spindle Roller Track:** .4850/.4854 in.  
**Rocker Counterbore:** .860/.861 in.  
**Rocker Rollers:**  $\frac{1}{16}$  in. long  $\times$   $\frac{1}{8}$  in. dia. (44 off)  
**Valve Guides:** I/D .3785/.3795 in. O/D .5620/.5625 in. (normal) to .5640/.5645 in. (oversize)  
**Valve-head Diameter:** 1.755/1.765 in.  
**Valve-seat Angle:** 45°  
**Piston Rings:** 80 mm. O/D; Width .118/.119 in.; Gap .010/.014 in.  
**Gudgeon Pin O/D:** .7498/.7502 in.  
**Gudgeon Pin Bore:** .5615/.5625 in. to take end pads .5625/.5630 in.  
**Pad Head Thickness:** .1120/.1140 in.  
**Small-end Bush:** I/D .7500/.7505 in. O/D slightly tapered: .9405/.9395 in. to .9375/.9380 in.  
**Connecting Rod:** Big-end Bore 1.7699/1.7701 in. Width .738/.740 in.  
**Big-end Rollers:**  $\frac{1}{2}$  in. dia.  $\times$   $\frac{1}{8}$  in. long. (28 off)  
**Tappets:** Stem dia. .3730/.3740 in.  
**Tappet Guide:** I/D .3755/.3745 in.  
**Oil-pump Shaft Bush:** I/D .437/.438 in. O/D .688/.689. Head thickness .092/.093 in.  
**Cam and Idler Spindle Bushes:** O/D .750/.751 in. I/D .501/.502 in. Head thickness .091/.093 in.  
**Engine Shaft Timing-cover Bush:** I/D .4995/.5005 in.

**BEARINGS**

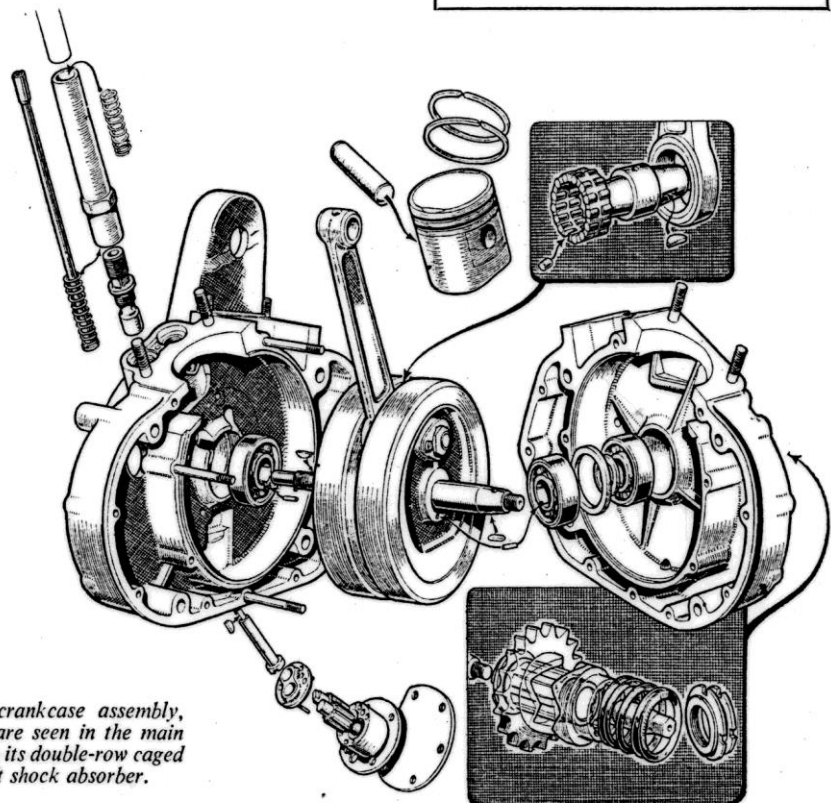
**Engine Shaft Roller Type:** (1 off) Hoffmann R325 bore 25 mm. by O/D 62 mm. by 17 mm.  
**Ball Type:** (2 off) similar dimensions.

**VALVE TIMING**

(with .004-in. tappet clearance.)  
 Inlet opens before T.D.C. 45°  
 Inlet closes after B.D.C. 85°  
 Exhaust opens before B.D.C. 85°  
 Exhaust closes after T.D.C. 30°

**CARBURATION**

Amal 6/024 equipment with 170 main jet (160 if air cleaner fitted) 6/4 slide; needle in 2nd notch.



*Essential details of the "Sloper's" crankcase assembly, including the three mainshaft bearings, are seen in the main sketch. Insets show (top) the big-end, with its double-row caged bearing, and (bottom) the engine-shaft shock absorber.*

coil spring which, in this case, presses down on to an abutment at the bottom of the push-rod—presumably yet another aid to help the main valve springs.

If the original piston is still in your engine it will be seen to carry two compression rings, but no scraper. Another outstanding characteristic of the period is the employment of a fully floating gudgeon pin with alloy end-pads. An assembly of this type is usually very long-lived and, apart from the possibility of a lightish mark down the wall of the cylinder, there should be no sign of the end-pad contact with the barrel. Scoring, or other abrasion, is the sign of previous careless assembly. It is seldom that the end-pads wear out or break adrift, for they are an interference fit in the gudgeon-pin end recesses.

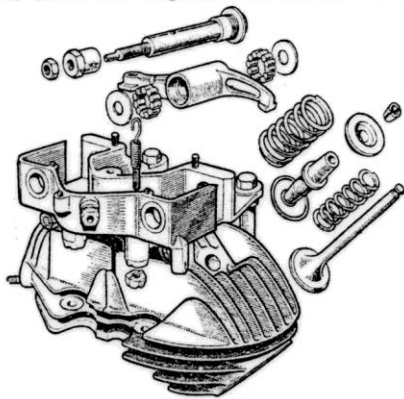
The small-end bush, of course, is renewable; it is a part fairly simple to make up and, for those with access to a lathe, the appropriate dimensions are given in the accompanying Useful Data panel.

**Crankcase Components**

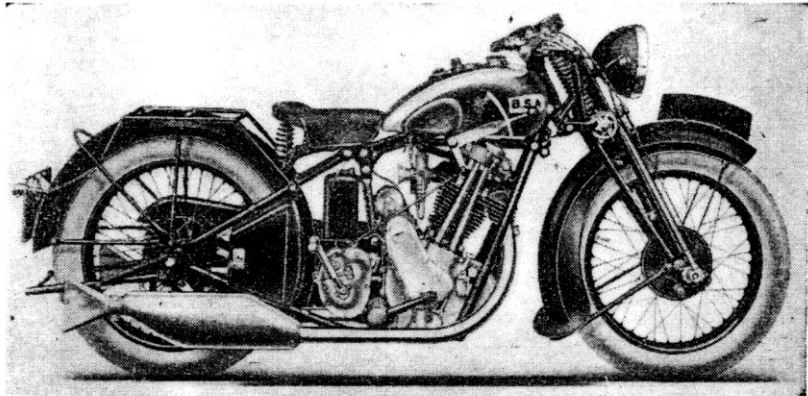
At this stage the crankcase, which includes a cast-in 4-pint capacity oil reservoir, may well be removed from the frame of the motorcycle. First, however, drain residual oil, take off the timing cover and remove the primary transmission (protected by a pressed-steel chaincase) including the engine-shaft shock absorber and the splined sleeve body which is a taper fit on the shaft where it is keyed and retained by the recessed centre nut.

On the timing side the extremity of the mainshaft is carried, in the cover, in an outrigger bush. Taking away the timing cover should leave a conical oil seal, hard up against the mouth of the bush, or left on the shaft. Next to the seal (looking toward the centre of the engine) is a tab-washer nut; slacken it and you should be able to withdraw the pump-drive worm member, which is in the form of a sleeve on the shaft; it is keyed and carries the half-time pinion on its outer shank. The pump pinion is mounted on the end of the pump driving shaft and secured by a washer, nut and split pin.

The camshaft pinions are carried by bushes—see Useful Data panel for dimensions—while the idler bears on a fixed spindle screwed into the back of the timing chest. It drives the magneto-shaft pinion, which



Exploded view of the characteristic cylinder head, showing rocker, with its roller races, and valve details.



Typical of a basic design which remained in production, with modifications, over a long period, is this example of the B.S.A. "Sloper," with 493 c.c. o.h.v. engine.

has no outrigger bearing of any kind. A conical oil seal is interposed between the taper-fit pinion and the back of the housing. A worn seal will result in oil leakage and a dirty engine.

Protuberances on the offside of the crankcase are: (1) the somewhat bulbous oil filler (maximum oil level is to a point just half-way up the bowl); an adjustable oil-flow control and indicator, and a dipstick extending down at an angle into the frontal oil cavity. On the nearside is an adjustable chain oiler.

Assuming that the magneto has been removed from its mounting platform, work of splitting the crankcase may proceed. The "internals," which are of a fairly standard type, include a double-row caged 28-roller big-end bearing, with a taper-fit crankpin which must be lined up in the flywheels so that the oil drillways register. Dimensions of the three mainshaft bearings are given in the Useful Data panel. In the specific engine described a previous owner had reversed the position of the drive-side roller-and-ball journal bearings; there may have been good reason for this, but, to be on the safe side, my artist colleague has reproduced the assembly as per B.S.A.'s G.A. drawing. Note the distance collars between the two bearings. There are two small dowels which key the outer face of each flywheel with the inner bearing races.

**Lubrication**

There is a semi-dry system based upon the provision of a crankcase reservoir and submerged gear-type pump working at one-sixth engine speed. Delivery is via drillways in the crankcase and timing cover to the hollow timing-side mainshaft and big-end bearing. Hence the need for a good oil-seal at the mainshaft outrigger bush in the timing cover. The bearings and cylinder wall are lubricated by splash, and excess oil is scooped from the edges of the flywheels by a projection and channelled back into the reservoir. A spring-loaded tell-tale indicator with visible button is incorporated in the delivery side of the system.

Access to the pump is by way of the sump cover plate which has a joint washer. Two screws retain a gauze base filter and also serve to lock together the top and bottom halves of the pump. Note that there is a gasket located at the flanged base of the oil pump body.

**Reassembly**

Assemble the pump and relative parts. Clean all oil passages; there is a screw plug in the timing-side end of the crankpin which, obviously, must be replaced when this scavenging work is finished. Although a key is provided on the drive side of the crankpin, a careless chap may overlook it and try to reassemble the crankpin wrong way round, with disastrous consequences to the lubrication arrangements. Remember to refit the flywheel bearing dowels.

When the crankcase halves are joined, the drive-side shaft assembly is pulled into close contact by the mainshaft nut; there is no adjustment for end-float. The timing-side shaft, as emphasized earlier, must be a good fit with the oil seal and outer bush as well as in the single supporting ball journal bearing. A locking washer and screw secures the crankpin and nuts.

Absence of circlips makes piston assembly simple: continue to build up the cylinder; then thread each push-rod, complete with pressure spring, into its lower tube which is screwed down on to the tappet-guide projection, with the tappet ball-end fitted into the push-rod cup. Put on the reassembled cylinder head and, after it, the telescoping push-rod tubes and upper oil seals. Assemble the rocker mechanism as per sketch—if it has not been done earlier—and adjust by means of the hexagon spindle heads and lock nuts to give free movement without end-play. Fit the rocker assembly to the head and complete the top-end work by timing the valves, setting the tappets to .001 in., hooking up the auxiliary return springs and putting on the domed cover. At the bottom end, mesh the idler pinion and re-time the magneto.

The foregoing maintenance notes apply alike to the 24-260 two-port and 24-257 single-port models. From time to time during the currency of the "Sloper," alternative specification items were offered. For instance the B.S.A. list includes reference to competition components, including flywheels and cams. Several different part numbers are allocated also to valve springs while sprocket sizes vary from 18 to 24 teeth, although allowance must be made here for sidecar gearing, of course. There were also high- and low-compression pistons available. In the main, however, the routine work for any "Sloper" model follows the same plan I have suggested.

SERVICE SERIES—No. 23—by BERNAL OSBORNE

The 1928-32 493 c.c. "Sloper" Model

**B.S.A.****Part 2.—Concluding Stages of Renovation Work for a Famous Old 493 c.c. Small Heath "Single"**

PRIMARY transmission components are protected by a pressed steel chaincase. Lubrication of the primary chain is by means of an adjustable feed from the delivery side of the lubrication system; it is a total loss arrangement and there is no provision for an oil bath in the modern sense of the term.

It is convenient, therefore, to remove the chaincase and to commence work on the clutch end of the gearbox. Dismantling starts with the removal of the nuts retaining the outer domed member. This component houses the hardened ball upon which the thrust rod impinges. The small coil-type clutch springs, in their retainers, hold the clutch plate in compression and by the action of the push rod the dome is thrust outward and the spring pressure thus relieved. This clutch mechanism complete is listed under

portion of the mainshaft. Behind this component is an oil seal and the final-drive sprocket nut retained by a tab washer. At this stage it is a good idea to remove the gearbox from the frame of the machine and continue work on the bench.

The kickstarter end of the gearbox—the cover noticeably less streamlined than present-day fashions would demand—carries the kickstarter crank, the clutch arm and the selector lever which is connected by linkage with the hand gearchange lever on the right-hand side of the tank. Connections with these parts should be dismantled and note should be made of the existence of a light pressure spring on the cable between

**USEFUL DATA****GEARBOX****FINE-LIMIT DIMENSIONS**

**Mainshaft Bush:** Bore .751/.752-in. O/D 1.0015/1.0025-in. tapering at leading end to .9995/1.0035-in. Head thickness .123/.125-in.

**Layshaft Bush (short):** Bore .627/.628-in. O/D .8765/.8775-in. Head thickness: .123/.125-in. Depth of Bore .843/.848-in.

**Layshaft Bush (long):** Bore .626/.627-in. O/D .8765/.8775-in. tapering to .8745/.8755-in. at leading end. Head thickness .092/.094-in.

**Kickstarter Bush:** Bore 1.1245/1.1255-in. O/D 1.3445/1.3455-in. tapering to 1.3425/1.3435-in. at leading end. Head thickness .092/.094-in.

**Control Quadrant Bush:** Bore .562/.563-in. O/D .8135/.8145-in. tapering to .8115/.8125-in. at leading end. Head thickness .310/.314-in.

**Control Shaft Bush (Cover end):** Bore .441/.440-in. O/D .6265/.6275-in. tapering to .6245/.6255-in. at leading end. Head thickness .072/.093-in. (Case end): Bore .500/.501-in. O/D .689/.690-in. tapering .002-in. per inch to leading end. Head thickness .125/.127-in.

**BEARINGS**

**Mainshaft:** Ball journal bearing, bore 1.250-in. x O/D 2.750-in. x .687-in. Hoffman LS12 type.

**Sleeve-gear Bush:** Bore .750/.751-in. O/D .876/.877-in. tapering to .879/.880-in., length 2.437-in.

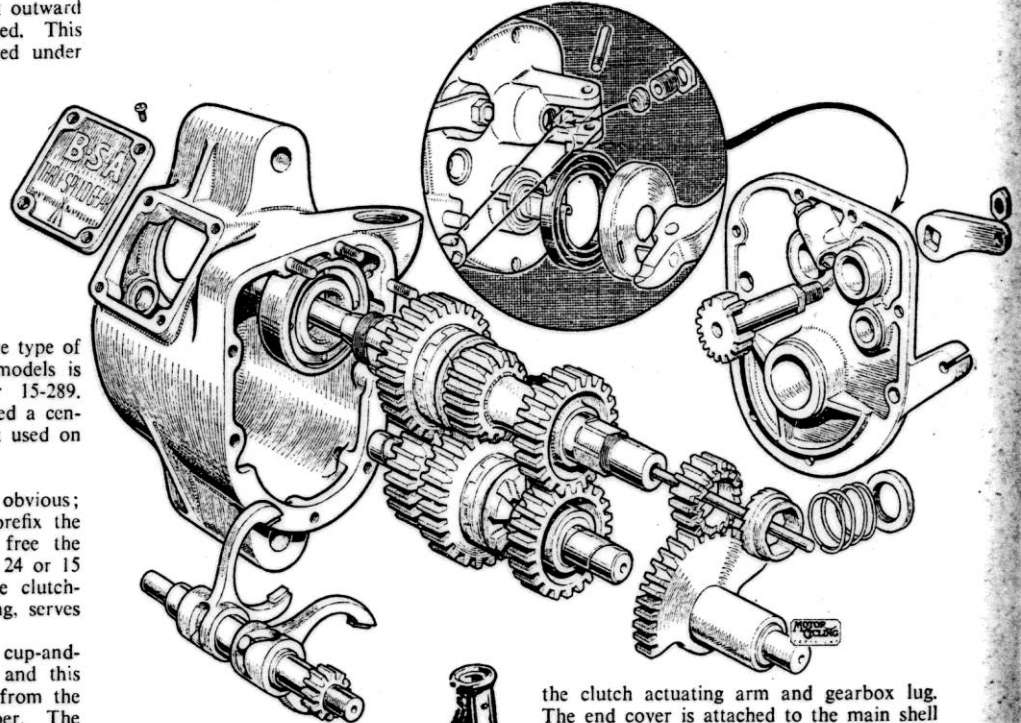
*The internals of the "Sloper" gearbox, showing (inset) the externally-fitted kickstart spring and method of adjusting the clutch arm, which should be at 90° to the rod when the handlebar lever is compressed.*

the number 25-4778. An alternative type of clutch fitted to some "Sloper" models is catalogued either as 24-4050 or 15-289. Clutches of the latter type employed a central coil spring very similar to that used on current B.S.A. "M" gearboxes.

**Dismantling Procedure**

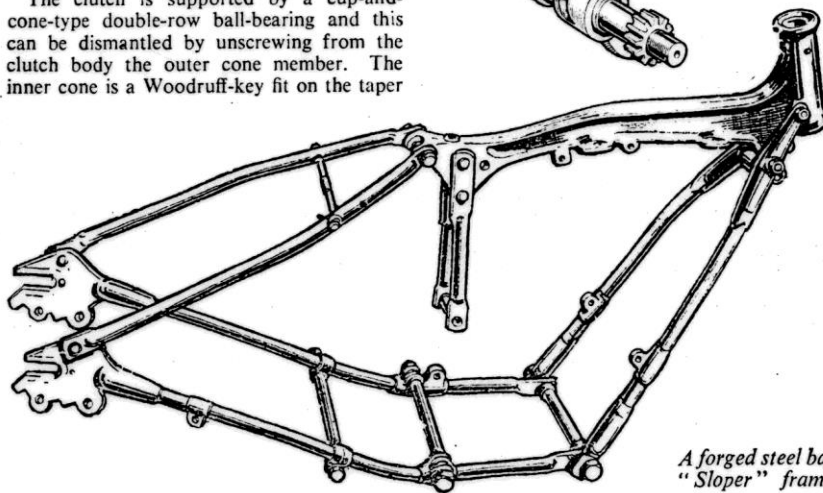
Dismantling procedure is fairly obvious; for gearboxes with the 25 serial prefix the removal of the centre nuts will free the entire clutch mechanism. For the 24 or 15 prefix series the extraction of the clutch-spring retaining nut, and the spring, serves a similar purpose.

The clutch is supported by a cup-and-cone-type double-row ball-bearing and this can be dismantled by unscrewing from the clutch body the outer cone member. The inner cone is a Woodruff-key fit on the taper



the clutch actuating arm and gearbox lug. The end cover is attached to the main shell at eight points and when the retaining screws have been slackened it is simple to draw off the cover and carry on with the dismantling of mainshaft and layshaft gears.

The two meshed main and layshaft gears at the cover end both carry 26 teeth; the centre pinions (the smaller of the double gears on the sliding member) are either 19 T. or 22 T., giving respectively wide or close ratios. In the wide ratio box, the 19 T. gear meshes with a 33 T. layshaft pinion. The alternative close arrangement is achieved by the use of a 22 T. mainshaft pinion working with a 30 T. layshaft component. The constant mesh sleeve and layshaft gears carry 32 and 22 T. respectively.



*A forged steel backbone was used in many "Sloper" frames from 1930 onwards.*



At the cover end the mainshaft is supported by a simple "top hat"-shaped phosphor-bronze bush and, in conformity with long-established practice, the kickstarter spindle bears in a massive bush of similar material and is itself counterbored and bushed to carry the layshaft. There is a bush at the layshaft drive-side and the mainshaft at the kickstarter end also is supported in this way. In the majority of cases—in fact, all cases save that of the layshaft-drive side-bush—it will probably be found necessary to break up the bush in order to extract it. Be careful, therefore, to provide yourself with the necessary spares.

A caged ball bearing carries the sleeve gear, and it can be knocked out when the dismantling work is complete. Signs of wear are most likely to be apparent on the faces of the engaging dogs and at the selector forks. It is also possible that the fixed pegs by which the selector forks are controlled will, after a period of use, show signs of wear and tear. This fault may have been detected earlier by difficulty in engaging gears and in gears jumping out of engagement when the machine has been in motion. Another contributory factor is wear in the spring-loaded selector index or in the three notches with which the pointer locates.

The gear-selector spindle bush and kickstarter spring, the latter being located outside the end cover and protected by a circular plate, are probably the only other wearing parts.

**Reassembly**

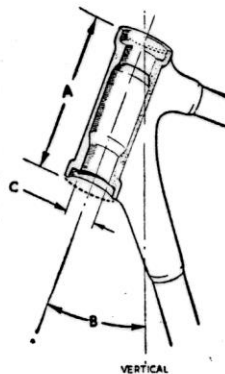
Oil seals are used at each end of the gearbox—at the point where the clutch push-rod

enters the cover—and at the other extremity where the clutch centre is pushed up on the mainshaft taper, adjacent to the final-drive-sprocket nut. This last-mentioned seal is of the conical type and is pressed down into the centre recess of the nut. Between the centre sliding dog on the mainshaft and the sleeve bearing there is an important thrust washer.

It is best to reassemble the two gear clusters and insert them, together with the main and layshaft, in the shell; in this job one is aided visually by the existence of a wide inspection aperture in the top of the shell casting.

See that the shafts rotate freely and that there is no tendency towards binding in newly fitted and reamed bushes. Fit the end cover, loosely at first, to retain the "internals" while dealing with the drive side. The sprocket and clutch must be built up piecemeal and fitted to the shafts.

Head-lug data: (A) 6.750 in. + .000 in. - .010 in. (B) 26½° (C) Cup and cone bearing with 1.520 in. pitch circle carrying 18 ¼-in. dia. balls (total 36) in V-groove race O/D 1.933 in.



Check the clutch push-rod for signs of wear; it should bear squarely on to the thrust ball which, being located in a threaded cup in the domed clutch cover, can be adjusted to compensate for wear. Carefully secure the ball cup by means of the locknut provided when adjustment has been made.

Now complete the work at the cover end; assemble the kickstarter crank and spring. A moderately worn box for which, possibly, spares are not available, performs more quietly, and efficiently, if it is packed with a fairly heavy grade of H.M.P. grease—this in addition to the maker's recommended grade and quantity of oil.

**Hub Details**

Standard bearings for both front and rear wheels were of the taper-roller type, and for guidance I would quote the Timken number 1178X 1130/N1. The dimensions of the bearings are, bore ½ in. by O/D 1 ¼ in.

**Suspension**

The cradle-type triangulated frame provides for rigid rear-wheel mounting and the use of girder-type front forks, with a central barrel spring working in compression, as the only suspension medium. Head-race details are given separately: note that the cups pressed into the top and bottom of the frame lug carry the balls in a 120°-vee groove.

No bushes were used in the standard forks for the ¾-in.-diameter spindles, but there were link sleeves, pressed in and a working fit in the 9/16-in.-diameter fork-shackle holes. There is not much metal available for over-boring these holes and bushing to take up wear. Fortunately, these parts, thanks to the link sleeves, do not rapidly deteriorate.

**ANNOUNCEMENTS**

**FRIDAY, MAY 27**

- Bohemian M.C.C. Whitsun Week-end at Hemsby Holiday Camp.
- Castle (Colchester) M.C.C. Working Party, Friday Woods, Berechurch, 7 p.m.
- C.S.M.A. (North London). Marshal and support Curtis Bennett Rally, Prestatyn Holiday Camp, N. Wales.
- Motor Cycling Club, Ltd. Whitsun Rally (first day), London, Kendal and Taunton. Rally Headquarters, Hotel Metropole, Llandrindod Wells. (Special Restricted.)
- Southern Sporting M.C.C. Support Sunbeam Trial, Lupin Café, 11.30 p.m.
- Streatham and D. M.C.C. Presentation of Awards, Redifon Club, 7.30 p.m.
- Triumph Owners M.C.C. Games Night, H.Q., 7.30 p.m.

**SATURDAY, MAY 28**

- Amateur M.C.A. North Devon Trial and Rally, Arnold Genders, Ltd., Service Station, King's Heath, Birmingham, 12 midnight.
- Bar-None M.C. Working Party, Moberley, 2 p.m.
- Bristol M.C.C. Whitsun Camp.
- Croydon M.C. Whitsun Tour, Coombe Martin, "Hare and Hounds," Purley Way, 8.30 a.m. and 2 p.m.
- Dublin and D. M.C.C. Grass Track Races and "Veteran" Run, Butlin's Holiday Camp, Mosney, Nr. Laytown, Co. Meath, Eire, 2.45 p.m. (Open to M.C.U.I.)
- Elham and D. M.C.C. Whitsun Run, Clifton's Garage, 7 a.m.
- I.M.T.C. (London and Southern Region). Rally, Causey's Farm, Kentisburyford, Nr. Blackmore Gate, North Devon.
- King's Norton M.C.C. Grass Track Meeting, Far Forest Show, Rock (three miles from Bewdley on main Bewdley-Ludlow road), 2.30 p.m. (Open to Midland Centre.)
- Leatherhead and D. M.C. Working Party, Randall's Park, 2 p.m.
- Leiston and D. M.C. Grass Track Meeting, Manor Farm, Framlingham, Suffolk, 3 p.m. (Special Restricted.)
- Lion M.C.C. (Glasgow). Lion Two-Day Trial (first day), Newhouse Hotel, Newhouse, Lanarkshire, 2 p.m. (Open to S. A.-C.U.)
- London Douglas M.C.C. Whitsun at Bognor with Aidwick M.C.C.

**SOME IMPORTANT DATES**

- June 18.—Leinster "Two Hundred." Aberdare Park Road Races. Crystal Palace Road Races. Mitchell Trial.
- June 25.—Cotswold Scramble. Altcar Road Races. Thurxton 9-hour Race.
- June 26.—German G.P. Brands Hatch Road Races. Banbury Vintage-Veteran Run.
- July 1-2.—Scarborough Road Races.
- July 3.—Belgian G.P. British Moto-Cross G.P.

**FORTHCOMING FIXTURES**

**SATURDAY, JUNE 4**

- A.-C.U. Clubman's Race Meeting, Clype Circuit, Isle of Man, 4 p.m. and 6.30 p.m. approx. (National).
- Dublin University M.C. and L.C.C. Speed Hill Climb, Fernhill, Stepside, Co. Dublin, 2.30 p.m. (Open to M.C.U.I.)

**SUNDAY, JUNE 5**

- East Midland Centre A.-C.U. Centre Rally, Local Clubrooms, finish at Cadwell Park, 8.30 a.m.
- Bridport and D. M.C. and L.C.C. and Weymouth and South Dorset M.C. and L.C.C. Winyard's Gap Scramble, Winyards Gap (main Maiden Newton—Crewkerne road, 6 miles from Crewkerne), 2.30 p.m. (Open to Southern Centre.)

**MONDAY, JUNE 6**

- A.-C.U. International Junior T.T., Mountain Course, Isle of Man, 10.30 a.m. (International.)

**WEDNESDAY, JUNE 8**

- A.-C.U. Lightweight (250 c.c.), Lightweight (125 c.c.), and Sidecar T.T. races, Clype Circuit, Isle of Man, 9.30 a.m., 12 noon and 5 p.m. (International.)

- Morden Mercury M.C.C. Camping Week-end at Lulworth Cove, "Queen Victoria," 7 a.m.
- Motor Cycling Club, Ltd. Whitsun Rally (second day), London, Kendal and Taunton. Rally Headquarters, Hotel Metropole, Llandrindod Wells. (Special Restricted.)
- Ravensbury M.C.C. Whitsun Week-end at Church Farm, Pagham. Details at H.Q.
- Rochdale and D. M.C. All Night Route Finding Contest, Town Hall Square, 10.30 p.m.

- Sunbeam M.C.C. Sunbeam 200 Trial, Waterfall Café, Virginia Water (20 miles west of London on A30), 12.01 a.m. Friday M'night. (Special Restricted.)
- Vespa Club of Wales. International Vespa Rally, Pengam Airport, Cardiff. Social, 9.30 p.m.
- Wallasey M.C. Regent Cup Rally, New Brighton Promenade, Wallasey, Cheshire, 6 p.m. (Propaganda Permit.)

(Continued on page 122)

# Optimising Amal Mk1 Concentric Fuel Levels

*A set up guide from Burlin Fuel Systems, UK*

Although the Concentric carburettor will function across a wide range of fuel levels, an accurate fuel level is the foundation of the overall jetting of the carburettor and makes a significant contribution to the smoothness and performance of an engine.

The Amal StayUp float has stainless steel tangs which can be bent to alter the fuel level. The nylon floats are non-adjustable.

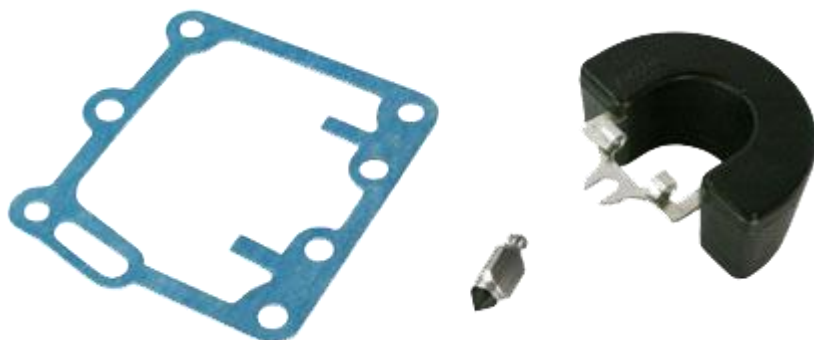
Mk1/Mk2 StayUp Float Kit



Mk1 StayUp Float and Needle Valve Kit



Mk2 StayUp Float and Needle Valve Kit



## **Fuel Level**

Although the Concentric carburettor will function across a wide range of fuel levels, an accurate fuel level is the foundation of the overall jetting of the carburettor and makes a significant contribution to the smoothness and performance of an engine

The fuel level is determined during manufacture by the position of the float needle valve seat and should not require adjustment under normal circumstances. For performance tuning, or where a

carburettor runs consistently rich or weak despite being fitted with the correct jetting, it may be desirable to check the fuel level to establish a calibrated basis for tuning, or re-establish the carburettor within the correct parameters.



The latest version of the Mk1 available from Burlin and their resellers – the 'Premier' incorporate a number of desirable improvements

Because there have been changes to the float chamber since the Concentric carburettor was introduced, and because there is no way of knowing what alterations may have been made by a previous owner, measuring the fuel level is the best way of setting up the float chamber..

The correct fuel level for all Mark 1 Concentric carburettors is 0.21" plus or minus 0.040" below the top edge of the float bowl. Thus when the needle valve is being held shut by the tangs of the float, the level of the fuel will be between 0.17" to 0.24" (4.33mm to 6.35mm) from the top of the bowl.

The fuel level can be checked by removing the float chamber and observing fuel running into it. The fuel flow should be sufficient to hold the needle valve open, until closed by the action of the float. Insufficient fuel flow will cause the needle valve to seal under its own weight, before the float rises far enough to press the valve shut. The level of the fuel can then be measured down from the top surface of the float chamber.

The fuel level can also be checked by attaching a piece of clear tubing to the bottom of the float chamber. A plastic float chamber drain plug can be modified to mount a suitable spigot, such as an old jet, to attach the tubing. Route the tubing in a vertical position alongside the float chamber, then open the petrol tap and fill the float chamber with fuel. If the fuel level is in the correct range, the fuel will rise in the tube to a point between 0.170" and 0.240" , below the top edge of the float bowl. Start the engine and ensure the fuel level remains within the correct parameters.

The new Amal 'Stay Up' float has stainless steel tangs which can be bent to alter the fuel level. The tangs can be easily adjusted, by clamping the float in a vice up to the spindle hooks and tapping the body of the float gently in the direction required until the required level is achieved.

### **Needle Valve**

If your float chamber is fitted with a brass needle valve, you may find the valve sealing under its own weight, before the float has risen far enough to press it shut. Symptoms of this problem can be that the carburettor takes a long time to tickle, hesitates on pickup and does not idle reliably. A Viton tipped aluminium needle valve is now available that overcomes this problem. It is now fitted as standard equipment to all new Mark 1 Concentric carburettors.



# Buy, Swap n' Sell

If you have anything that you want to buy, swap or sell you can now do so, free of cost, in this section of OVR. All you need do is send a email to the editor of OVR with the text of your advertisement. OVR will NOT be providing any editorial or corrections. Of course OVR cannot accept any responsibility for anything to do with the items advertised – that's a buyer/seller matter.

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## Wanted: Vincent related publications

The VOC Machine Researcher is looking to purchase the following publications. Or maybe you are prepared to donate?

- The Vincent HRD Story in South Australia, Author Paul Wilkins, 1994
- The Vincent HRD in Australia, Author Brian Greenfield, 2007

If you can assist please email Jon Lambley, [researcher998@voc.uk.com](mailto:researcher998@voc.uk.com)

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## SWAP - Series B UFM

I have a good condition (probably needs a repaint) Series B UFM, number R3576.

Would like to Swap for a good condition Series C UFM for Comet project.

If you can help please email to [Rodneybrown58@icloud.com](mailto:Rodneybrown58@icloud.com)



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**SELL: Amal Mk1 Concentric Carburettor Shim Kits**, provides for twelve 0.016" incremental needle adjustments to allow precise mixture tuning in the critical mid-range. Also suitable for Wassell carbs. Just A\$15 per kit including postage world-wide. Additional kits just A\$10 each. Email [ozvinreview@gmail.com](mailto:ozvinreview@gmail.com)

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## WANTED/SWAP: RFM number R2567

Hi Martyn, I purchased my 1948 B Rapide in 2006 and it came with non-matching RFM number R3269. With the bike having been in Australia for at least the last 60 years I am hoping to locate the original RFM number R2567, that may well be fitted to a bike or in storage somewhere in Oz. If anyone knows of the whereabouts of RFM 2567, I would consider any reasonable proposition to acquire it; swap of parts, \$\$ or whatever. Thanks, Mark Hamilton, Adelaide. email [markhamilton998@bigpond.com](mailto:markhamilton998@bigpond.com)

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## WANTED

A pair of Vincent twin matched crank cases in reasonable condition. Email Richard on [faulk@inet.net.au](mailto:faulk@inet.net.au)

# Service Providers

The Service Providers listed have been used with a degree of satisfaction by OVR readers in the past. Just because they are listed does not imply an endorsement of them by OVR.

## Spares:

**V3 Products**, Australia: (aka Neal Videan) has an extensive range of top quality Vincent Spares including multiplate clutches for twins, oil leak eliminator kits, socket head tappet adjusters, paper element oil filters and lots lots more. Ships worldwide. Email for a price list to [nvidean@outlook.com](mailto:nvidean@outlook.com)

**VOC Spares Company Ltd**, UK: Full range of Vincent Spares. Ships Worldwide. Visit their web site for more information <http://www.vincentspares.co.uk>.

**Maughan & Sons, UK** Taking pride in producing the highest quality spares, Maughan & sons stock over 1300 parts and produce over 800 for the Vincent Twin and Comet. Ships worldwide. More info here <http://www.maughanandsons.co.uk>

**Coventry Spares Ltd**, USA: Fantastic service and deep product knowledge plus extensive range of excellent Vincent Spares and tools. Ships Worldwide. See website for more information <http://www.thevincentparts.com>

**Conway Motors Ltd**, UK: Anti-Sumping Valves, Multi-Plate clutch conversions for Comets plus an extensive range of excellent Vincent Spares. Ships Worldwide. Email for more information [steve@conway-motors.co.uk](mailto:steve@conway-motors.co.uk)

**Tri-Spark Ignition**, based in Adelaide, Australia. Modern electronic ignition systems with models for all classic (and modern) bikes and the current system of choice by Godet Motorcycles (France) for installation in their superb Godet-Vincent machines. For info go to [www.trispark.com.au](http://www.trispark.com.au)

**Fastline Spokes**, based in Broadford, Victoria, can supply Australian made spokes for just about any bike. Owner Bruce Lotherington manufactures spokes to order with a turn around time of less than 1 week. For more info see [www.fastlinespokes.com.au](http://www.fastlinespokes.com.au) or phone (+61) 0411 844 169

**Union Jack Motorcycles**, Australia: Full range of Triumph, Lucas, Amal and Venhill control cables. Ships worldwide. More info at the website [www.unionjack.com.au](http://www.unionjack.com.au) or phone +61 3 9499 6428

**VSM**, Holland: 2x2 leading shoe brake kits for Vincents; high quality 30mm wide 4 leading shoe system. Email [vspeet@vsmmetaal.nl](mailto:vspeet@vsmmetaal.nl) for info.

**François Grosset**, France: Electric starter for Vincent Twin. Electronic ignitions for Vincent Single and Twin supplied complete with drive gear. Email [pontricoul@gmail.com](mailto:pontricoul@gmail.com) for more info.

**Cometic Gaskets**: Modern, reusable gasket sets for Vincent twins and singles. If you actually USE your Vincent you are mad not to have these. Contact Paul Holdsworth of the VOC Chicago section c/o [pl\\_holdsworth@yahoo.com](mailto:pl_holdsworth@yahoo.com) Located in Chicago IL USA.

## Nuts n Bolts:

**Classic Fasteners**, Australia: Their aim is to supply obsolete and hard to obtain fasteners for your restoration project be it a professional or private venture. The print catalogue, available for download, lists the current complete range. Ships Worldwide. <http://www.classicfasteners.com.au/>

**Precision Shims Australia**: All types of shims made to your requirements, ships worldwide. More info at their web site [www.precisionshims.com.au](http://www.precisionshims.com.au)

**V3 Products** (see entry under Spares above) also stocks a large range of Vincent specific nuts n bolts.

**Keables, Australia:** The original nut n bolt specialists who are able to supply just about anything with threads and bits to match such as taps n dies. Recently have relocated to 11 Braid St, West Footscray, Vic. Ph 03 9321 6400. Web site [www.keables.com.au](http://www.keables.com.au)

**Small Parts & Bearings, Australia:** Has an extensive range of small parts and bearings and also spring steel shims an an amazing range of sizes. More info at [www.smallparts.com.au](http://www.smallparts.com.au)

## ***Restoration Services:***

**Steve Barnett, Australia.** Master coachbuilder and fuel tank creator who does incredible workmanship; located in Harcourt, Victoria. Ph +61 3 5474 2864, email [steviemoto@hotmail.com](mailto:steviemoto@hotmail.com)

**Ken Phelps, Australia** – Qualified aircraft engineer and builder and daily rider of Norvins for over 30 years, who has the skill and experience to carry out overhauls, rebuilds, general repairs and maintenance to Vincent HRD motorcycles. Full machine shop facilities enabling complete engine and chassis rebuilds, Painting, wiring, polishing, aluminium welding and wheel building. Ken Phelps Phone: (61+) 0351760809 E-mail: [ogrip400@hotmail.com](mailto:ogrip400@hotmail.com) . Located in Traralgon, Victoria, Australia

**Outer Cycles, Australia:** Jim Browhly is a master craftsman who manufactures bespoke motorcycle exhaust systems for classic bikes, no job is beyond his capability, so if you do need a new system that will be made to your precise requirements, give Jim a call, telephone 03 9761 9217.

**Grant White – Motor Trimmer, Australia:** Specialising in Vintage and Classic Cars and Motorcycles. Located in Viewbank, Victoria. ph 03 9458 3479 or email [grantwhite11@bigpond.com](mailto:grantwhite11@bigpond.com)

**Terry Prince Classic Motorbikes, Australia:** Specialises in development and manufacture of high performance components for Vincent motor cycles. For more information visit the web site [Click Here](#) or telephone +61 2 4568 2208

**John Parker, AMAL Carbs, Melbourne, Australia:** A specialist in AMAL carbs of all models, repairs, restorations and a massive supply of spare parts. For information phone him on +61 3 9879 3817 or email to [ukcarbs@hotmail.com](mailto:ukcarbs@hotmail.com)

## ***General Services :***

**Peter Scott Motorcycles, Australia:** Top quality magneto and dynamo services, from simple repairs to complete restorations plus a comprehensive range of associated spares. Provides hi-output coil rewinds with a 5 year warranty. For more info contact Peter on (02) 9624 1262 or email [qualmag@optusnet.com.au](mailto:qualmag@optusnet.com.au)

**LUCAS STUFF** – The man who bought Kevin Baker's Lucas Parts business is Danny Lee in Melbourne. Email: [dannyleepersonal@gmail.com](mailto:dannyleepersonal@gmail.com) His phone number is 0412 327 197 Apparently Kevin has moved to Melbourne and works with Danny one day a week.

**Ringwood Speedometer Service, Australia:** Experts in the repair and restoration of all motorcycle, automotive and marine instruments. Smiths cronometric specialists. Telephone (03) 9874 2260

**Dyson M/C Engineering, Australia:** Wheel building, Crank rebuilds, Bead blasting, Rebores & Engine Rebuilds and more. Located at 12 Chris Crt., Hillside, Victoria. Phone 0400 817 017

**Piu Welding, Australia:** Frank Piu is a master welding engineer who works with Aluminium as well as steel. No job to small. Has been recommended by multiple OVR readers. Phone 03 9878 2337

**MotorCycle Fairings, Australia:** This crew are are total professionals when it comes to painting. Expert service, quick turnaround and fair prices. <http://www.melbournemotorcyclefairings.com.au/>  
Ph 03 9939 3344

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# PSA : Know Your Number



## Risk Factors

**Age:** Risk for prostate cancer increases with age.



**Race:** Men of black African or black Caribbean descent have increased risk for prostate cancer.



**Family History:** Men with a first degree relative (brother, father, son) with prostate cancer have an increased chance of getting the disease.



**Lifestyle:** Maintaining a healthy weight through good diet and exercise may reduce the risk of prostate cancer.



## Did you know?

The PSA test is a simple blood test, taken from your arm, that measures the amount of prostate specific antigen in your blood.



While there are controversies with the PSA test, high numbers serve as a powerful **red flag** for further investigation.



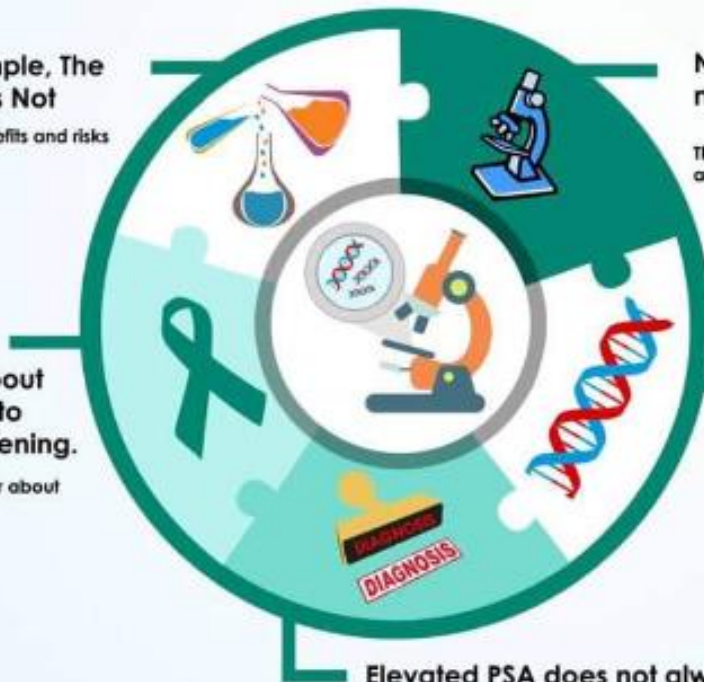
# 5 Things to Know About Your PSA Test

## The Test is Simple, The Explanation Is Not

Understand the benefits and risks

There is no consensus about the right age to start PSA screening.

Talk with your doctor about what is right for you



Newer tests in the pipeline might be more effective.

The Prostate Health Index (PHI) and others are showing promise

Genetic testing may be appropriate for prostate cancer.

Prostate cancer shares genes with other cancers, i.e. BRCA1, BRCA2

Elevated PSA does not always mean you have cancer.

Many benign conditions can raise PSA, i.e. BPH

OK OK..... Enough you say? Just remember one thing,  
**Life is temporary, Death is permanent!**