



The Oz Vincent Review

Edition # 75, May 2020

The Oz Vincent Review is an independent, non-profit, e-Zine about the classic British motorcycling scene with a focus all things Vincent. OVR, distributed free of charge to its readers, may be contacted by email at ozvinreview@gmail.com



Stay At Home - So We All Stay Safe

Disclaimer: The editor does not necessarily agree with or endorse any of the opinions expressed in, nor the accuracy of content, in published articles or endorse products or services no matter how or where mentioned; likewise hints, tips or modifications **must** be confirmed with a competent party before implementation.

Welcome to the latest edition of OVR – this is another special, special in that is larger than usual. With social distancing and Stay At Home restrictions in place I have attempted to provide a broader range of items and lots more of them to keep you amused and also provide some suggestions for how to pass the time till this global health emergency is finally over. And concerning the special mid-April edition – Letters to the Editor is a bumper crop that says it all.

And the cover image this edition is OVR reader and VRV member, Phil Pilgrim with his original period correct Malvern Star that as a smooth skinned lad he rode before he was old enough for a motorcycle licence. Fitted with twist grip 3 speed Sturmey-Archer dyno hub, a new leather Brooks male touring saddle and a hub front brake wheel from a Aussie post bike to stop the powerful beast, new rubber pedals for long distance peddling it's one way around the covid-19 motorbike restrictions. Needless to say Phil is wearing a very ancient Bell helmet for protection and cuff clips for his jeans on the handlebar - they are original "skid-bars" he bought as a teenage lout!

I expect it will be some (many?) months till the global crisis is over so also please give a thought to submitting an article to OVR sharing your classic British Bike experience's, discoveries or even disappointments with the rest of the world-wide OVR community

Remember, to access the complete OVR archive from any device, just go to the OVR web site <https://ovr270.wixsite.com/ozvincentreview> from where you can download ALL past OVR editions



Melbourne, Australia.

Letters to the Editor

OVR 73 was a Cracker of an issue, Martyn – thanks Guy Allen, Editor - Unique Cars magazine, Australia

The PEI story was hilarious in #73! Well done (again)! - Bruce Metcalf, Virginia, USA

Hello Martyn, Thanks again for this great OVR. I am so pleased every month to receive it, and to read it. A nice way, with MPH, to practice my English, and learn more about the Vincents. And on the top of it, staying aware of all the members and friends from our wonderful Vincent word.

After having been concerned by the Aussie's fires, I am now concerned about our Vinceters. Staying home (or in our workshop barns), is probably the safest. We need to take it easy to-day, to be able to enjoy it more in a few weeks.

As You can understand, the Open day's with GODET factory have been cancelled.

Thanks again for Your time compiling OVR. - Didier C, France

Hi, Martyn, OVR 73, What a most enjoyable read of information, admiration of a charismatic character and miraculous memory, this story of PEI! I cannot resist from reading his comments and articles several times, as it is impossible to read without a broad smile on your face. Why nature has not managed to produce more alikes of human specimen, as we still need them! It seems much easier to replicate simplicity in large quantities. Many thanks for your excellent journalistic work, Martyn! best wishes from Germany, Michael

Hi Martyn, Many thanks to you and your readers for the fantastic donation. Please let your readers know that the effect of their very generous donation will assist the brigade in purchasing operational fire fighting equipment to protect our community. Our community is slowly recovering. Three years of punishing drought, 9 weeks of fighting fires, followed by flash flooding and then just to top it off COVID (which I know is affecting the globe)..... but as they say what doesn't kill you makes you stronger and we will come out the other end of all of this stronger I am sure.

Once all of the COVID19 stuff is done and dusted; the Bruthen Fire Brigade would love to host a BBQ for you and your supporters on the way through Bruthen on one of your rides. We can just keep it simple - feed and water you so to speak and get a few photos for your sites / magazine's etcetera.

Please keep in touch, *James Nicholas*, Captain, Bruthen Fire Brigade

Hello Martyn, Hope you're holding up okay in the crisis craziness! I wrote a piece for San Francisco's late, lamented CityBike and for Motorcycle Sport and Leisure in the UK...and around the English-speaking world. Perhaps it's too simple for your readership, familiar as they are with old British stuff. But here it is if you can use it! (*Ed- you bet I can! And I have!*)

Your friend, Maynard Hershon, Denver, Colorado, USA

Hi Martyn, Congratulate Alice for his piece in OVR 74, it is very funny. Best regards. Bill Parr, Netherlands

Hi Martyn, Thanks for the #74 Special Edition, and a special thanks to Alice Leney, for a very clever and funny article. We all know what the road to hell is paved with..... so (at last) I will heed the call, and send you my modest contribution which also happens to be quite uplifting in as much as it occurred in more normal times and shows the good and funny side of the human race. (*ED: Watch for Colin's item in OVR#76*)

Stay safe everyone, everywhere Colin Manning, UK

Martyn, OVR 74 was Brilliant - I have printed the article out and will never use that original dowdy little red Richardson manual again. Cheers Richard, Australia

Hey Martyn,

I love the latest OVR. You are a brave man! (WTF!) I'm pretty sure that is my bike, but I'm not sure it is my wife. Please send an email to all involved so that if you wish to sit on my bike naked, please give me 48 hours to prepare. Now Alice Leney. I love his/her work. The name confuses me- Alice? He/she reminds me of Captain Good Vibes: https://en.wikipedia.org/wiki/Captain_Goodvibes ? The cartoons are in the same genre. So, you and Alice are brave folk because I wonder how the rest of the world [Pentecostal, Evangelical, etc] will view this edition. . Anyway, my initial approach to my wife to replicate the photo was met with a blank stare. She suggested a photo of me instead. Unfortunately, my HRD was in town. So she took a photo of me not on HRD, but in my box.

Regards Richard Lloyd, Australia [*ED: Sorry Richard, but the photo was a step too far. LOL*]

Dear Martyn,

I have to congratulate you as Editor and Alice as scribe for the excellent mid-April edition's contents. Alice because his instructions are extremely apposite in regard to covering so many fine details in the operations he describes and the pit falls he advises on. Such subtle details are not covered in the text books - things like tiny screws lost across the room, shims disappearing without trace and the risk of destroying brake plates until you twig the problem with modern grease nipples. All these I know from painful experience. Furthermore he leavens and lightens what could be a very tedious essay with witty if saucy interspersions. The editor deserves praise for tolerating the tone without which we would have had very dull fare. So my Vincent loving friends, these mechanical monsters are no picnic to play with, read and inwardly digest!

Yours sincerely, Ernie Lowinger, UK

Mr Editor, the warnings you provided on the cover of the latest OVR were very timely, thank you. My darling wife did read them AND then the entire magazine. Laughing she told me that I was right not to look beyond the cover as I possibly would not have appreciated or understood the contents.

Chas Blunt, Gibraltar

Thanks Martyn! Alice is a genius!

Josh, USA

Hi there Martyn, In answer to your call here is a short story about my Vincent "in a box". If you need a different format please let me know.

Bill, USA [*ED Thanks Bill, keep an eye out for the June edition*]

Dear Martyn,

Great stuff! Many thanks for the 'special' edition. Just what I needed! I enjoyed every word of it, having been through most of those actions in the late 1950s in a freezing cold garden shed. I am very proud to have, in some small way, triggered such a successful and enjoyable monthly injection of reality!

Geoffrey, UK

Proper Lubrication of the Classic Motorbike

OVR Contribution, gratefully received, from Maynard Hershon, USA

In those legendary days when motorcycling men wore waxed cotton over-suits and cork-lined crash hats, their lusty machines boasted several areas into which you introduced oil. Each of those areas was lubricated by a specific weight or type of oil.

I'm not making any of this up!

As a genuine rider you had to learn all about oil – unless your girlfriend's brother was a mechanic. If her brother was a mechanic and familiar with classic British bikes like yours, your future and hers were assured. You weren't leaving. Other women? No way.

To learn about oil, you gleaned kernels of truth from superstition-filled old bikers' tales. Warned by pimply experts against evil multi-grade motor oils, you chose 30-weight non-detergent in wintertime and 50-weight non-detergent in summer.

And why should you rely on detergent oil to de-sludge your engine? So frequently was your classic's motor dismantled for repair, you could brush the parts clean in a solvent tank.

Interestingly, you did not pour engine oil into the engine. You poured it from quart cans into a fragile, thin-walled oil tank mounted on flimsy brackets beneath the bike's seat. Less often (but more exotically) you poured it into the very tubes of the bike's frame.



The tubes doubled as oil tanks in an attempt to cut production costs, eliminate crack-prone parts (on those few badly maintained thoroughbred classics that vibrated) and perhaps cool the oil more effectively – the last a worthy task.

Remarkably, there was seldom an oil filter, certainly nothing like the easily replaceable particle-trappers of today. So - when something regrettable occurred in your engine, bits of various materials found their way into your oil – and circulated with it.

Mercifully, engine oil lubricated only the engine (well, your garage floor wasn't going to rust). Other parts of your bike required, as we mentioned, their own special oils.

For example, the gearbox, not in those days integral with the engine, thrived on specifically formulated gear oil. Changing it meant locating the gearbox drain plug, concealed (as it invariably was) in an ugly oil-swamp under there somewhere.

Eventually you found and removed the repulsive bolt, but by then your sense of humour was strained indeed, perhaps beyond ready recovery. We could ask your old girlfriend.

The chain connecting the engine to the gearbox (via the "clutch") ran in an allegedly oil-tight compartment called the primary case. In magazine tests, gleaming primary cases held every drop of lubricant safe inside. Sadly, your own real-life primary case did not.

A classic primary chuckled at your pitiful attempts to seal its seams. Your primary wept thin, hot oil onto your riding pants and boots and the pristine white go-go boots of the cheerleader you'd been begging to ride with you since 1967.

Because so few primary cases were oil-tight, some manuals suggested that, pre-ride, you squirt a bit of “top-up” oil into the case. If you forgot, no oil, not a drop, remained in your primary case. Primary oil came out at night in the classic era.

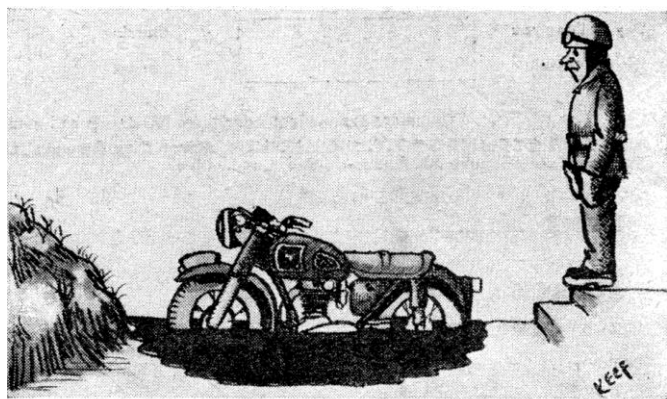
So your primary chain ran dry - as did your clutch, which had never worked in a clutch-like manner anyway. It dragged AND it slipped. Made you crazy. Why wouldn't you take it personally? It was your clutch. And it hardly worked even before you ruined it. It was factory-ruined.

Note: If these reminiscences sound like the ravings of a bitter, disenchanted man, evidently you did not own a British classic that you foolishly tried to ride for fun and transport – not merely display as an ornament or atmospheric investment. End note.

Some primary cases compounded their guilt by metering warm, thin oil onto your drive chain. Those clever adjustable oilers quickly bled onto your chain all the oil contained in your primary. Your chain flung that oil onto the drive side of your rear tire.

OFF was the one correct oiler adjustment in that legendary era.

A discussion of primary chain adjustment, a sensitive topic for this writer and thousands of otherwise emotionally stable old motorcyclists, is best reserved for the offices of mental health professionals. Thank you.



“Hm . . . Really must cure that oil leak sometime.”

I fear I'm giving a wrong impression here. Classic lubrication wasn't all agony. You seldom had to change oil. Why change oil? Hell, it ran out like a hooker who'd rolled you in a cheap hotel. No need to drain old oil to make room for new. There was always room.

And drive chain lubrication was never a problem. Replacing burnt valves, gearbox shafts and cracked pistons – those were problems.

A drive chain's life wasn't so hard. How much could it wear? If your bike lasted 10,000 miles, it was a marvel of longevity. Alert the Guinness folks. What a mechanic you must be! My goodness, you had a 10,000-mile BSA or Norton. How 'bout a beer?

These days, you can readily find the one drain bolt for all the oil. When you find it, it's probably clean. You can defy the manual's caveat and reuse the aluminium washer. You may have to remove a cover to change your oil filter. If you do, the same wrench will fit.

When you drain the oil, as much will rush out as you poured in 3,000 miles ago. You hardly have to check the level between changes. Oil won't stain your garage floor. It won't soak your tire or your boots. Your exhausts won't smoke.

You don't have to know anything about oil. You can use the same grade year 'round if you like. Or you can buy synthetic oil and wait longer between changes. No worries.

You can pay a mechanic, a guy you don't even know, to maintain your bike in his shop. Drop it off; pick it up later in the day. It won't be brutally expensive and it's not brain surgery: Your bike will be ready for many more happy miles. Why, it's like a miracle.

You may want to lube your chain yourself. You can use spray lube made for motorcycle chains, an oil-soaked rag or something as clean and tidy as WD-40. Won't matter much what you use: the chain is packed with sealed-in grease.

Our chains last longer than our engines did in those cork-lined days. Our senses of humour last longer too! We can grin in our helmets all the way to wherever we're headed.



The Secret is Out!

SURPRISE, bewilderment, shock, delight—the sleek, enclosed Vincents described elsewhere in this issue are certain to have greater impact than any other development announcement by a motor-cycle manufacturer in recent years. No range of machines will be the subject of wider controversy.

The vigorous Vincent concern has rarely been bound by convention. Its aim throughout its history has been to provide machines of specialized type for the select coterie of hard-riding motor cyclists. What now? Will the new machines prove less or more attractive to enthusiasts? Will they serve to widen appreciably the appeal of the marque? There would appear to be no reason to suppose that the new machines will prove other than successful. Their performance potential has in no way been reduced. Indeed, high cruising speeds over long distances should prove less fatiguing than hitherto. The need for specialized clothing for short journeys in all but the worst of weather has been eliminated. The problems of mechanical noise control, of possible denting and of deterioration of the panels due to rust, have been overcome by employing plastic materials. In short, the needs of the sporting rider and those of the tourist would appear at last to have been acceptably—indeed admirably—integrated. Will this courageous step be followed by other manufacturers?



Startling Vincent Developments

Plastic Enclosure and All-weather Equipment on 499 c.c. and 998 c.c. Roadster Models :
 Modifications to Suspension and Ignition Systems : Small N.S.U.-Vincents Continued :
 N.S.U. Quickly Autocycle Added to Range

HIGH performance with full weather protection is the keynote of the Vincent roadster programme for 1955. The various factory racing machines seen during the past season have accustomed motor cyclists to enclosure, and many have come to the obvious conclusion about the degree of weather protection afforded to the rider.

Windscreens and legshields have become common additions to road-going machines, since many riders find little pleasure in extensive dressing up to guard against the elements. Valuable as are such accessories, they rarely look other than extras because the manufacturers have to design them to fit a large number of different makes and models. Vincents have made the logical decision to build such protection into their standard machines.

Since Vincent mounts are already endowed with above-average performance, the aim is not streamlining and consequently higher speed, but to provide

accessibility which is not generally inferior to that of the earlier models, and in certain respects is markedly better. Finally, Vincents claim that the handling, particularly in gusty winds, is improved by the enclosure. During a run on a prototype machine, a member of *The Motor Cycle* staff, clad in a lounge suit on a day of blustering half-gale, found a complete absence of unpleasant effect attributable to the fairings, even at very high speed.

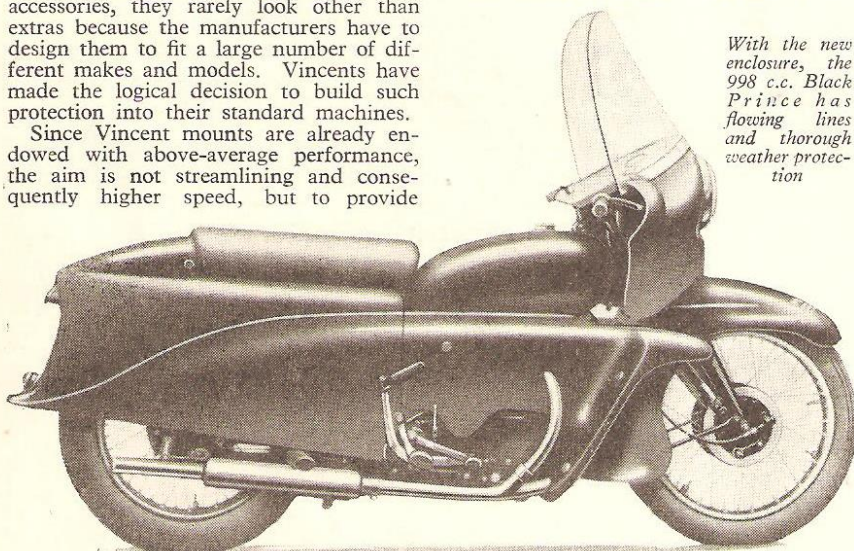
The enclosure is applied to the three Vincent roadsters, and the machines have been given new names which are more in

keeping with their much-altered appearance. Black Prince, Black Knight and Victor replace Black Shadow twin, Rapide twin and Comet single respectively; all three bear the designation Series D.

For those unacquainted with Vincent machines, it should be mentioned that the 998 c.c. vee twins and the 499 c.c. singles have light-alloy, high-camshaft, o.h.v. engines with a bore and stroke of 84mm and 90mm respectively, and several unconventional features. The single is, in effect, half of the twin engine but differs further in having a separate Burman gear box driven by a lin-pitch single chain, in place of the unit-construction Vincent gear box and $\frac{3}{4}$ in triplex chain of the twins.

In each case the engine forms an integral part of the machine structure and eliminates a normal tubular frame. Front suspension is by Girdraulic fork, which is of the parallel-ruler type but

With the new enclosure, the 998 c.c. Black Prince has flowing lines and thorough weather protection

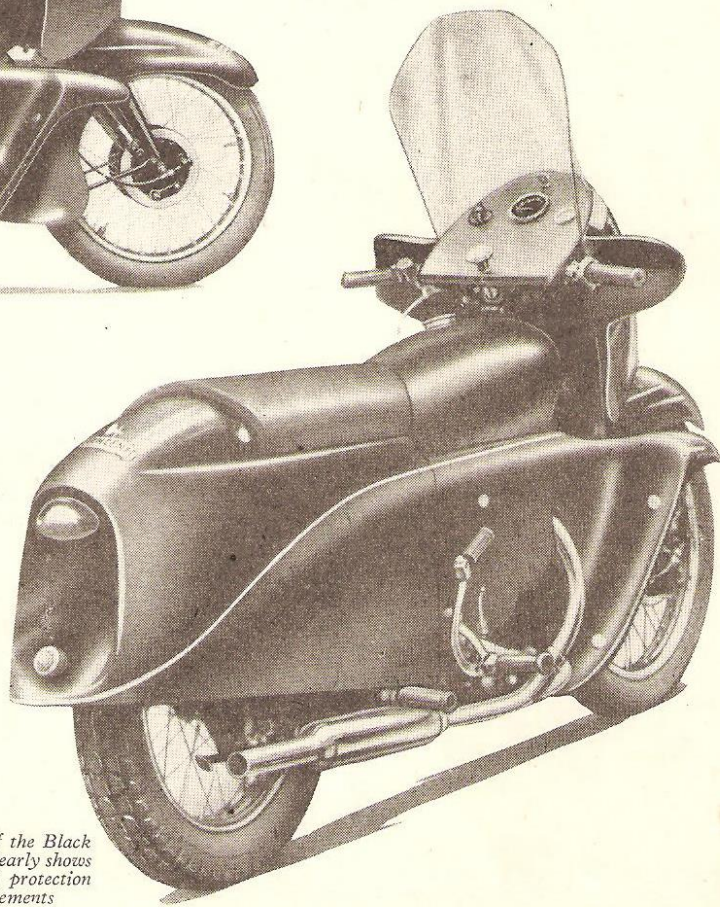


machines which can be ridden at normal speeds in any sort of weather without the need of special clothing. Of almost equal importance is the desire to provide a smooth, easily cleaned exterior comparable with that of a car. These objectives are achieved by the use of a voluminous front mudguard, a frontal fairing with integral windscreen, side panels which conceal the power unit and embody legshields, and a completely enclosed rear end on scooter lines.

Such comprehensive "coachwork" at once raises questions of its effect on noise, weight, accessibility and handling. The first two points are met by the use of glass-fibre-reinforced plastic material for the major components. As is well known, the material is extremely strong for its weight; hence the enclosure adds but little to the all-up weight of the machine; some of the surplus is offset by weight reductions achieved in other directions. A further advantage of the material is its non-resonant qualities, so that, instead of amplifying sound (as sheet metal would tend to do), it has a subduing effect.

Careful design has achieved a degree of

Another view of the Black Prince, which clearly shows the measure of protection from the elements



has forged light-alloy blades, side-mounted springs of unusual length and a central hydraulic damper. The rear suspension differs only in detail from that fitted to all Vincent machines since the late '20s; it comprises a triangulated fork pivoted on taper-roller bearings, with the suspension unit located under the seat and connected to the apex of the fork.

Deeply valanced, the front mudguard is unsprung and of sufficient width to embrace the fork members. The rear of the mudguard is contoured to match the rear of the tail fairing and thus provide continuity of styling. The deep, curved section gives the guard considerable inherent stiffness; it is attached to the fork at the bridge and is further braced by the tubular front stand.

Unsprung weight of the front-wheel assembly has been appreciably reduced by transferring the headlamp to a sprung position. The 7in-diameter lamp, of Lucas manufacture, is mounted in a one-piece plastic cowling which embraces the steering head and turns with the handlebar; the sides of the cowling are extended downward to overlap the front

mudguard, and a tubular-steel stiffener is bonded to the interior.

Hand protection is given by detachable cupped extensions mounted on the cowling. Although the cups could have been embodied in the main moulding, it was felt desirable to keep them separate for ease of replacement in the event of damage. At the top, the cowling forms a semi-circular dash panel inclined at an angle to give easy visibility of the speedometer and ammeter mounted thereon. Also on the panel are the lighting and ignition switches.

Full access to the underside of the instruments and switches is readily obtainable by removing the steering-damper knob, undoing the clamping nut beneath it and slackening the two bolts which attach the stiffening tube to the fork assembly. The complete cowling can then be pivoted forward through a right angle.

Each side panel is a single plastic moulding flared outward at the front to provide leg protection and also to direct air on to the engine. At the top-front the panels have a forward projection which reproduces, on a smaller scale, the nose of the front mudguard. The panels extend from the underside of the tank to halfway down the crankcase and chain-case castings.

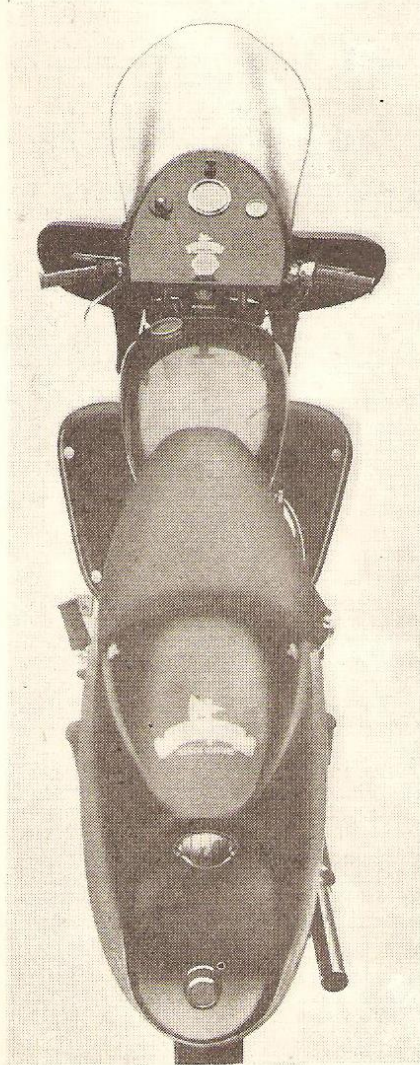
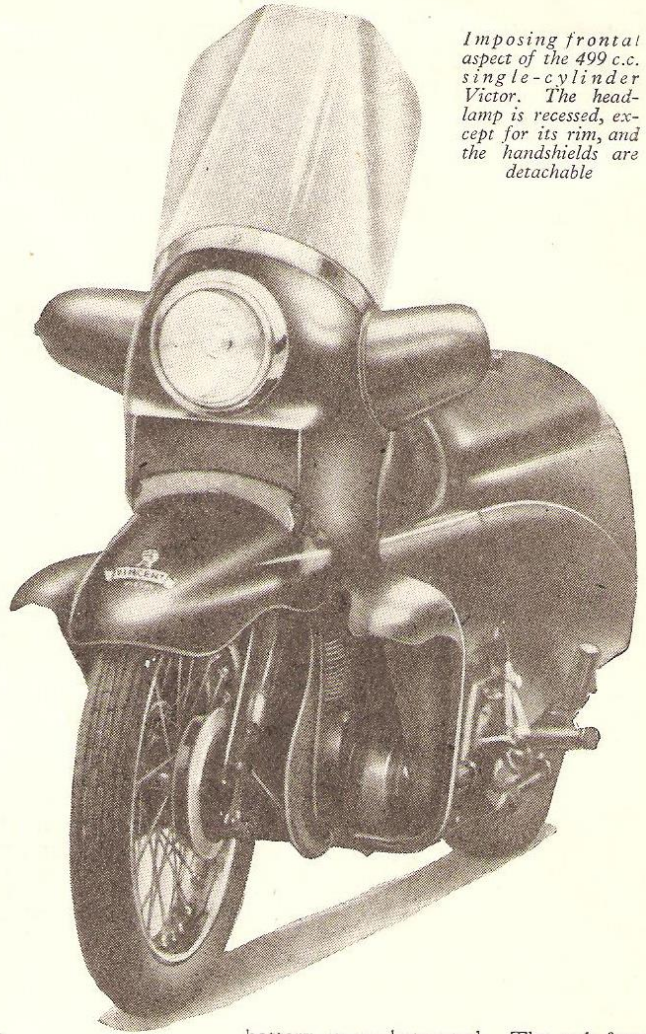
Three-point attachment of the panels is by means of knurled screws. Removal of the panels is a matter of seconds only and gives complete accessibility to the engine.

A smoothly contoured, one-piece plastic moulding forms the tail shell and is bonded to a light, tubular-steel sub-frame which carries the attachment and pivot brackets as well as the pillion footrests. The extreme rear of the shell incorporates a flat portion on which is painted the registration number. Above the number is fitted the rear lamp and below it the regulation reflector; both fittings blend neatly into the general lines.

The dual-seat, embodying springs and foam rubber, sits directly on top of the shell and is therefore fully sprung. Below the seat is a moulded-in tool compartment of ample size, exposed when the nose-hinged seat is raised.

Attention to the rear wheel, chain or

Imposing frontal aspect of the 499 c.c. single-cylinder Victor. The headlamp is recessed, except for its rim, and the handshields are detachable



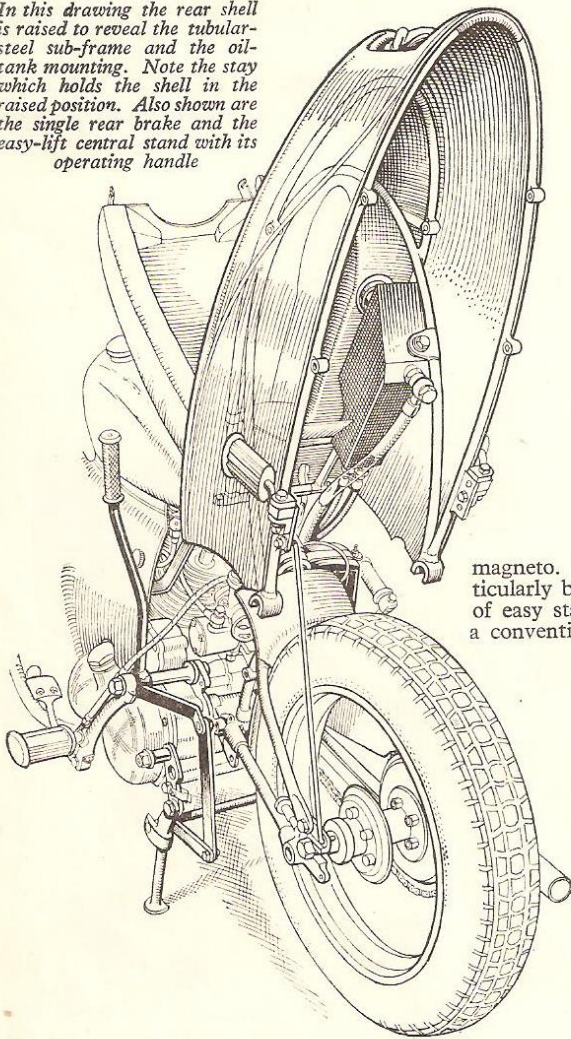
Seen from the rear, the 698 c.c. Black Knight has a clean and businesslike appearance

battery is unobstructed. The sub-frame pivots from the rear cylinder-head bracket and is held up when required by a stay which can be unclipped from the interior and swung down to engage with a lug on the rear fork. The structure is rigidly secured in the down position; at each lower-front corner of the sub-frame is a substantial C-bracket which engages with a clamping bolt behind the gear box. There is no rear mudguard as such, but a short, aluminium shield is mounted ahead of the wheel to protect the power unit and rear springing from mud and water.

Unlike previous post-war Vincents, the oil tank no longer forms a box-section bridge between the steering head and the rear cylinder head. Of unchanged capacity, the tank is housed in the rear shell with its filler orifice under the seat. Since the orifice is at the rear of the tank, there is no risk of spillage when the shell is hinged up, and the flexible oil pipes are so positioned that the operation does not subject them to any load.

The tubular top member of the frame is brazed into modified steering-head and rear cylinder-head lugs. The rear lug incorporates brackets to support the fuel tank and the seat nose, and forms a side-car-connection point. Fuel-tank capacity has been increased to four gallons as a result of the transfer of the oil tank.

In this drawing the rear shell is raised to reveal the tubular-steel sub-frame and the oil-tank mounting. Note the stay which holds the shell in the raised position. Also shown are the single rear brake and the easy-lift central stand with its operating handle



Previously 3.00in front and 3.50in rear tyres were standard equipment, with 3.50in and 4.00in sections as optional alternatives. For 1955 the position is reversed and the larger tyres are standardized, although the smaller tyres can be specified if preferred.

To reduce unsprung weight, only one rear brake (of the ribbed, Black Shadow pattern) is fitted and the leverage has been increased so that there is no reduction in braking efficiency. The stop-light switch is operated by the balance beam of the front brakes and not from the rear-brake mechanism. On the Black Prince, ribbed drums are employed for the front brakes as well as for the rear brake.

Action of the front-wheel springing has been softened and a small Armstrong damper replaces the previous Vincent-made component. At the rear, a full six inches of wheel travel has been achieved with the aid of a single, large Armstrong spring-and-damper unit which has a spring rating of 300 lb per in. Unsprung and all-up weights have been reduced by this modification.

Rear and prop stands are superseded by a very ingenious and effective central stand. Operation is by a lever which, with the stand up, lies horizontally along-

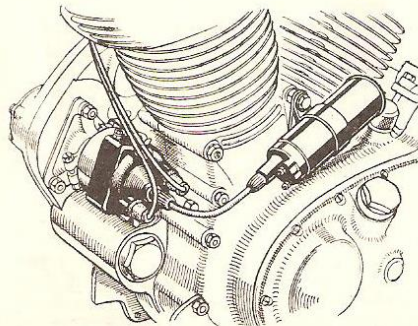
side the primary chain-case. A very moderate upward and backward pull on the rubber grip of the lever suffices to lift the machine on to the stand with the rear wheel well clear of the ground. The actual pull required to raise either of the twins is stated to be only 30 lb, or no more than the weight of a heavy suitcase. A gentle forward push on the lever brings the machine down on to its rear wheel again.

Extensive modifications are not confined to the cycle parts; the power units, too, have come in for their share of attention. The most important change to the engines is the adoption of coil ignition in place of a magneto. This change has proved particularly beneficial to the twins in terms of easy starting and slow running; with a conventional magneto it is impossible to obtain maximum intensity for both sparks.

The Lucas distributor is mounted in the same position, on the front of the crankcase, as was the magneto; the coil is fitted on top of the primary chain-case. Both units are accessible on removal of the left-hand side panel. A Lucas 60-watt instrument, the dynamo is driven from the primary chain or timing gear in the case of the twins and singles respectively. To give better audibility, the horn is mounted over the front cylinder head.

Amal Monobloc carburettors are fitted and have necessitated modified induction elbows for flange fixing. A small increase in power output has been effected on the twins by the fitting of the same pattern of head to both cylinders. Both heads are of the former front type, so that both carburettors are on the left and both plugs on the right.

The idler-gear shaft assembly of the latest engines is in one piece instead of two as previously. One or two cases of



Distributor and ignition coil are readily accessible on removal of a side panel

excessive oil leakage on earlier engines were traced to the timed crankcase breather. To obviate the trouble the new breather is a simple pipe leading rearward from the inlet rocker-box plug of the front cylinder. On the twins, the engine-shaft shock-absorber has been rendered more robust by the incorporation of four additional pairs of springs.

For the touring enthusiast, special pannier equipment will be available for the three new models. Made from the same plastic material as the enclosure panels, the panniers attach rigidly to the rear fairing and blend with its form.

Exterior finish is in black, with gold lining. The timing cover and outer half of the chaincase are black so that their exposed surfaces maintain the colour scheme.

No alterations (other than the modified breather and shock-absorber) are made to the Series C Black Lightning racing model, which retains the "backbone" oil tank and magneto ignition. The engine is, of course, specially tuned, but the detailed specification can be varied.

The lively 48 c.c. Firefly cyclemotor also is continued with no change. It is a two-stroke, horizontal-cylinder unit which attaches to the bicycle bottom bracket and provides geared-roller drive to the rear tyre. An A.C. generator provides current for coil ignition and lighting.

N.S.U. Models

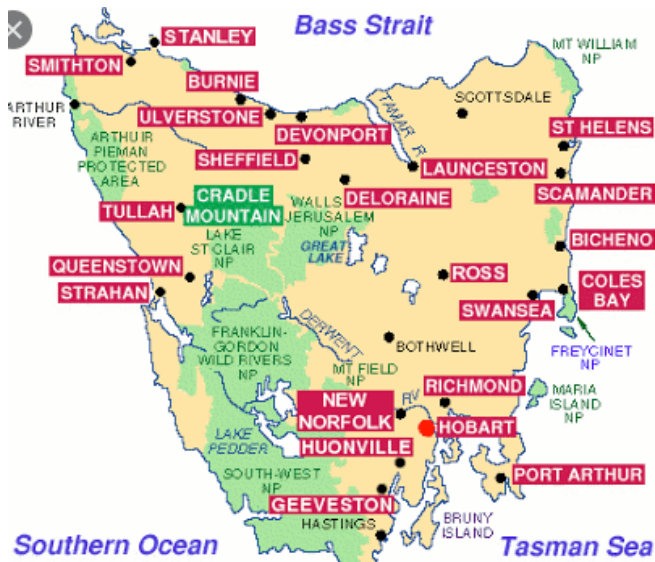
Finally, there are the two N.S.U.-Vincent Fox models and the N.S.U. Quickly autocycle. The Quickly is imported complete from Germany, but in the case of the Fox machines numerous items, including electrical equipment, wheels and tyres, are of British manufacture.

The two Fox models are identical save for the engines. One has a 98 c.c. o.h.v. unit (of the same basic type as that used by Gustav Baum in the record-breaking "flying cigar"), while the other is powered by a 123 c.c. two-stroke engine. Each has a four-speed gear box and a Miller flywheel magneto. A pressed-steel spine frame is employed, and front and rear suspensions are respectively of the leading-link and pivoted-fork pattern.

Of 49 c.c. (40 x 39 mm) engine capacity, the Quickly is one of the most advanced machines of its type. It has a spine frame comprising two steel pressings welded together along the edges. Gear primary drive and a two-speed transmission are included in the specification. Direct lighting is provided by the Noris flywheel magneto. A leading-link front fork and 2in-section tyres ensure satisfactory riding comfort.

The manufacturers and concessionaires are Vincent Engineers (Stevenage), Ltd., Great North Road, Stevenage, Herts. Prices of the Black Prince, Black Knight, Victor and Black Lightning will be available later. Prices of the other models (in which total price includes purchase tax) are as follows:—

	Basic Price			Total Price		
	£	s	d	£	s	d
Firefly, 48 c.c.	25	0	0	No	p.t.	
N.S.U.-Vincent Fox, 98 c.c. o.h.v.	104	0	0	124	16	0
N.S.U. - Vincent Fox, 123 c.c. two-stroke ..	99	15	0	119	14	0
N.S.U. Quickly, 49 c.c. autocycle	49	18	4	59	18	0



All British Motorcycle Rally Tasmania, March 2020

(by Peter Kime with additions by Phil Pilgrim)

The Tassie tour is organized by the British Motorcycle Club of Tasmania. This is the fifth time it has been run and it is going to be held every 2 years from now on.

As it happened 2 vacancies came up Phil Pilgrim contacted me and asked if I would be interested in going. I jumped at the chance as I think Tassie is one of the best places in Australia to ride a motorbike. I have driven around it in all manner of vehicles from a 1972 Renault 16 TL, 1935 Indian Chief, numerous white Corolla rental cars and now a chance on my 1961 Triumph 650 Bonneville.

I have had the Bonneville for over 35 years and have left it in the same condition it was in after it was stored under cover back in 1965. Phil gave me a hand making sure it was up to a 1500km ride. We fitted new carburetors to it, an electronic ignition (the magneto was starting to play up.), new drive and primary chains as well as new clutch plates. Once tuned and after numerous test runs it was running as smooth as silk and unlike most Triumphs it did not leak a drop of oil.

Phil was taking his Vincati. The Tour was going to start on the 10th of March and finish on the 19th of March. 10 days of riding clockwise around Tassie from the East Coast to the West Coast. 4 other members of the IIRA were also going. Noel Thornby on an A10 borrowed from Phil White, Phil White on an A10 Gold Start, John Fontenalla on his BSA Gold Star and George Fitzpatrick on his BSA M21.

We arrived in Tassie on the 7th March, 3 days before the Rally Registration date. Phil spends a lot of his Xmas holidays in his mates' house in Devonport and planned to drop into see one of his customers just out of Devonport as well as to show me his favorite shop in Devonport. Our first stop once we unloaded the bikes and sorted everything out was a shop called NUBCO, they are a Tool shop and Ships Chandlers. NUBCO is like a tool store on steroids and we spent a couple of hours in there leaving dribble marks on most of the tools they had there. We both left with some tools that we just had to have.

DAY 1

On Tuesday the 10th we made a short run up to Ulverstone to register for the rally. The bikes congregating at the registration center were a good mix of years through British Bike history from a 1926 Norton to 1970's Triumphs. There was a good representation of Vincent's, Brough Superiors, BSAs & Triumphs. A lot were new & old restorations as well as a few that looked like they had just been dragged out of a shed and still had the original paint on them supplemented by a lovely shade of rust.

While the majority of bikes were British there were a couple of Harleys (What do Kelpies and Harleys have in common – They both like to ride in the back of trucks.) and a few BMWs (and that

doesn't stand for British Motorcycle Works). Thank goodness all the riders were not too precious and welcomed other bikes that were not British.

DAY 2 St Helens

On the 11th we were off on the rally, riding to St Helens. Phil and I decided to keep ahead of the main group and left Devonport at 10:00am. It was good to get the bikes on the road and once out of Devonport we began to enjoy the roads that Tassie is renowned for. Narrow roads, reasonable condition and not a car in site.



We took the long way to St Helens going up through Exeter, Derby and into St Helens. Morning tea stop was The Bert Munroe Café in Exeter. The café is run by a local Indian motor bike fanatic and has lots of Indian memorabilia around the café. The proprietor is also a car nut and ready to sit down and

have a chat. We caught up with the group for lunch at Scottsdale. All gathered at a Bakery for a pie & sauce and a vanilla slice. In St Helens, Phil and I were staying in a lovely motel called Homelea Cottages about ½ a km from the Caravan Park.

DAY 3 – Hobart

Again we took off before the others and proceeded along the Tasman Highway to Falmouth. This is a magnificent scenic coastal drive, the road running alongside the foreshore for the 1st 100km. Just after Falmouth we did a diversion to enjoy the challenge and excitement of more of Tassie's mountainous climbs / descents and hair pin bends to St Marys Township. This is a must stop for any Car or Motorcycle Nut, just out of St Marys in an old railway siding is St Marys Railway Station. The name out the front proudly announces it as "St Marys Cranks and Tinkerers (Museum of Interesting Things.) If you are into anything he has it, including the partial restoration of a 40s Dodge that he found in a paddock.

If you stay there long enough someone will come up in an old car to pop in to have a chat with Ian. Ian is also a keen modeler and has a huge range of plastic cars and planes he has built. He also builds old sailing ships out of wood and has a lot under construction. We spent a couple of hours talking Phil and I were hungry and headed up the twisting road to Elephant pass and Elephant Pancake House. The Pancakes they make there are superb with such a great range you do not know where to start.



We then took off towards Hobart, again enjoying the scenic roads along the way. As the next day was raining we decided to catch the bus into Hobart, see the Salamanca Market and go down to the docks for a 1st class fish meal.

DAY 6 Hobart to Tarraleah

Sunday came out bright and clear skies. When we were getting the bikes ready we noticed that one side of the motel appeared deserted. The owner came over to tell us that the Government had

asked him to put up people who had come off the cruise ships in the harbor. He had 6 people already there that were in self-quarantine. We thought it was a good time to get out of there, hoping the exhaust fumes from our bikes would be enough to kill any virus that wanted to follow us.

We caught up with the main group at Bushy Park which is just past Norfolk. The rally organizers were putting on a BBQ lunch and it was a great sight to see over 100 motorbikes pull into the oval where the BBQ was being held.



The main group was staying at Tarraleah Village and some left overs were staying at the Bronte Park Cottages. This is when we realized that the Covid-19 hoarder mentality had started to hit Tassie; the local general store was offering a cup of coffee for \$7:50 with a free roll of toilet paper.

DAY 7 Tarraleah to Strahan main group, Phil & I to Queenstown.

Phil and I were not keen on Strahan and headed for Queenstown instead.

Just outside of Bronte Park on the Lyell Highway at Derwent Bridge is a place called the Wall. It was recommended as being well worth a look so Phil and I turned in. There were already about 20 bikes there from the main group and it was a good time to catch up and compare notes. The Wall consists of 100 hand sculptured timber panels, each 1m wide by 3 m high. The scale of the work hand carving this is staggering. The final finish of the sculptures is like leather. Definitely was worth the visit.

The next time we caught up with the group was Nelson Falls just before Queenstown. Very pretty spot to have a quick toilet stop and a 10 minute walk to the Falls . A lot of people on BMW Adventure bikes, a group of about 20 on Victory Motorcycles, some Harleys, a group of AC Cobras thundering past and to top it off a small group of Minis trailing behind the Cobras. It is amazing how many groups of cars and motorbikes pick Tassie as a touring destination.

DAY 8 Strahan Rest Day for main group. Phil & I headed for Stanley.

Queenstown to Hellyer Gorge is where the roads get really winding and become a test for an old bike. Not sure if the sign is still there but it used to say – 100 bends ahead as you leave Queenstown. We didn't count them but is sure felt more than that!

The road is in good condition but I did notice coming into some corners the camber on Tassie roads seems a lot flatter than Victorian roads, in some cases making the corner a bit more difficult to get around. There are a lot of corners stating 35km only and you definitely have to take notice of them, as you go around they just seem to get tighter and tighter, definitely 2nd gear corners.

As we were getting out of the twisty bits we came across a corner that had a bit of gravel right on the start of the bend. Phil cut in close to the center line and got through OK. I took the corner a bit high and hit the gravel. Lucky I had already scrubbed of a bit of speed and was slowing down. The back wheel stepped out in the gravel and put the bike into a slide, as I got the bike upright again it was too late to avoid the Armco railing and it was a slow motion bump into the railing. Lucky for the bike I was caught between the railing and the bike. When we picked up the bike all it had was a minor damage to the left hand side – a bent footrest and mirror stem slight bend. I

on the other hand had a very sore left ankle, rib cage and left arm, no damage to my riding gear which proves the point that wearing the right gear is well worth it.

We then proceeded onto Stanley, stopping just before the turn off to Stanley for fuel. It was at this stage I found it a bit difficult to walk on my left foot. I also found it a bit difficult to support the bike on my left foot while I kicked it over with my right foot.

One thing you have to watch out on these roads are log trucks, there is nothing worse than looking in your rear vision mirror and you can quite clearly see the name of the truck on the radiator and that is all that you can see! We were sitting on the speed limit and it was a relief when we got to a hill and you could then see the whole truck and trailer in the mirrors.



That night we went to Hurseys Seafood Restaurant and had the best feed of fish we have ever had, even had a Crayfish entrée that was really delightful. By now my ankle was giving a bit of bother and it was a slow hobble back to the cottage. We walked / hobbled into Stanley, stopped at a Chemist for an elastic bandage for my foot as well as some Panadol. We spent the morning visiting the museums and sights and

took one look at the path going up to the Nut and realized it wasn't for us (especially me). We then went to the Stanley Bakery to have the best Scallop pies in Tassie.

DAY 10 Devonport

The Rally was finishing tonight and was having a final dinner at the Ulverstone Rowing Club. Phil and I both thought that in light of all the problems now going around with Covid-19 we would probably be better not going due to the number of people that would be at the dinner.

We found that since our 1st day in Devonport that supplies were now getting in short supply and they too had a run on toilet paper. We were notified that the 20th would be the last voyage out for the Spirit of Tasmania till the Covid-19 emergency was over. Boy were we were happy that we had tickets for that voyage!

We proceeded onto the ship and went straight to our room and decided to isolate ourselves and stay there until the boat docked. Phil was regretting not getting some chocolate bars before we went into self-imposed isolation but I was happy as I still had a bottle of wine to finish off and we had 2 rolls of toilet paper in the bathroom.

The trip was excellent, and even though we did not stay or meet the rest of the group on a frequent basis we both enjoyed each other's company and just loved the ride. Would do it again in a heartbeat, especially on the Triumph, it just loved the roads and ran as smooth as silk except for the minor altercation with the Armco railing.

Got home Sat morning, unloaded the Triumph faced the consequences from Pat who said if it was a motorcycle crash she was going to take my license off me. Lucky it did not come to that.

On the Monday I went to the doctor about my ankle, he sent me for an X-Ray and they sent me straight back to the doctor who said I had a broken Fibula. I was then fitted for one of those horrible moon boots and have been hobbling around since. No driving (HR & Rodeo are both manuals and no bike riding), lucky I have plenty to do in the garage!



*Austin 8 30HP, 62mph vs Bonneville 34 HP, 100mph
What a handsome pair, the Vincati and Triumph T120*

What a

Congregation at Bushy Park for Lunch time BBQ, over 100 bikes..

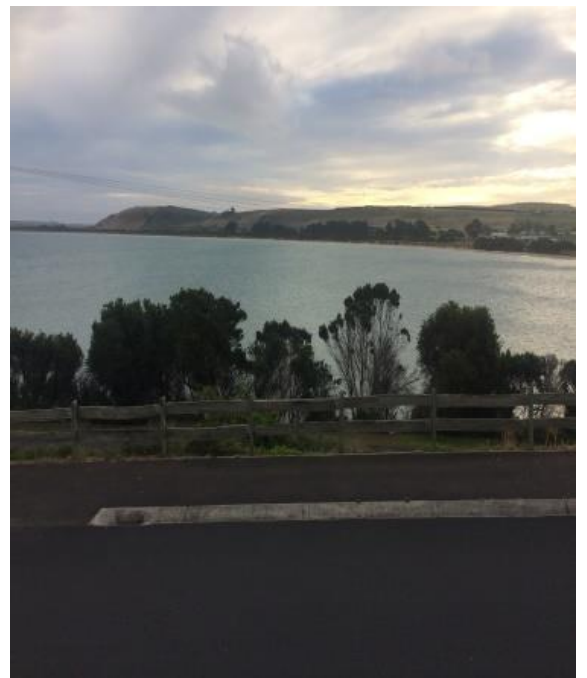


St Mary's Cranks and Tinkerers Museum.

Ian is a delightful bloke to talk to. Well worth going of the main highway to have a look.



**Tassie, this is what it is all about.
Beautiful Scenery, lots of things to see and great roads.**





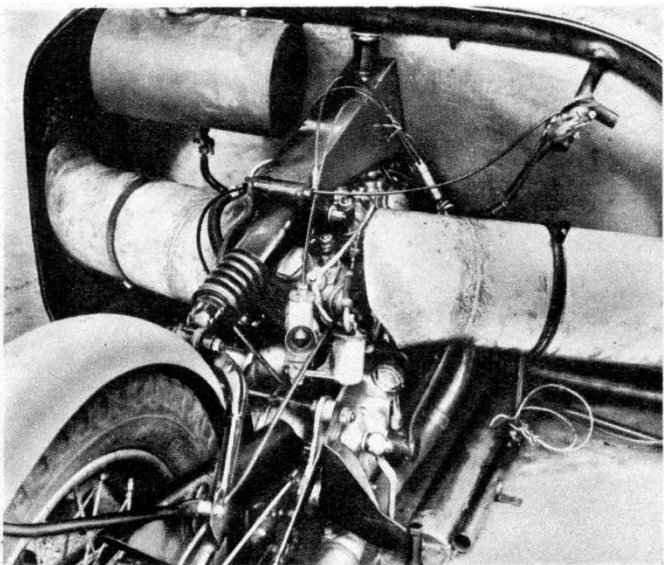
What Might Have Been . . .

*A prototype Vincent 3 wheeler described
and Driven by Bruce Main-Smith*

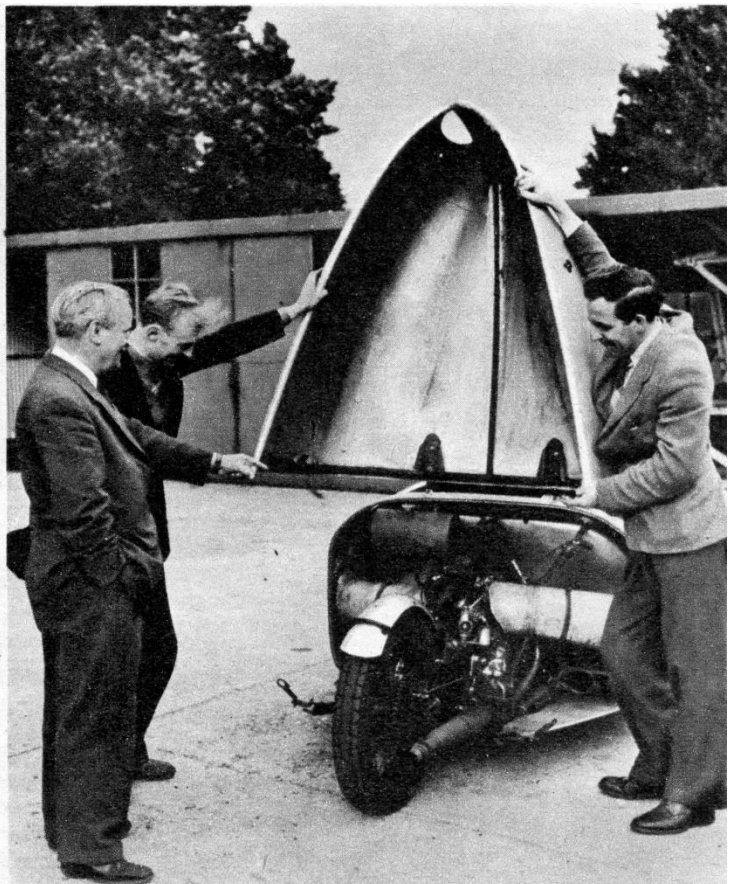
First published in Motor Cycling, December 1956

As soon as it was learnt that the previously hush-hush Vincent three-wheeler was to be "released," Bruce Main-Smith was up to Stevenage post-haste, and the try-out was an experience he wouldn't have willingly foregone!

Powered by the standard 1,000 c.c. Rapide engine, for which the company have long been famous, the special represents many months of hard work and loving care. It was at one time envisaged as a prototype, but production is not to be. It is hard to say whose brain-child it is—many famous names, both at Stevenage and in the Mid-lands, have designed parts for it—but it is true to say that Ted Davis has been one of the chief instigators and architects. Now it is his responsibility, if custody of this enthralling "weapon" can be termed such.



The power house. Massive cooling trunks run from the side aircoops to the rear cylinder; the for'ard pot is served by a tunnel from the frontal duct. (Right) While Davis and Main-Smith hold up the rear cowling, managing director Phil Vincent lectures on a design point.



Basically, the three-wheeler consists of the front suspension, chassis and body, coupled to a standard Vincent rear suspension assembly combined with the engine-gearbox unit. The two front wheels are Morris "Minor" components with 8 in. hydraulic brakes and 5.00 in. x 14 in. tyres, and they are mounted on a trailing-arm-cum-torsion-bar system, hydraulically damped by Armstrong units. The simplest method of describing this extraordinarily comfortable suspension would be to say that it is somewhat similar to the Volkswagen layout. The steering is actuated by a Morris box, of the worm type, suitably modified.

The chassis is of tubular steel, all-welded, the main members being two 4 in. tubes disposed longitudinally, and parallel to each other. There are, of course, several sub-frames welded to this basic structure, to support the coachwork and so forth.



With Bruce Main-Smith at the wheel and engineer Ted Davis beside him the "Vincent Three" sweeps through a Hertfordshire bend.

The body is a beautiful piece of work, as yet naked and unadorned by paint, but resplendent in its glory of hand-beaten 16-gauge aluminium sheet; it only needs final touching and cellulosing.

The front bonnet hinges upwards and backwards to expose a capacious boot while the rear shielding also hinges upwards, though this time forwards, and in its entirety, to expose the power unit and the rear suspension, as well as the petrol and oil tanks.

The massive Vee-twin engine unit is located immediately behind the seat and is rubber mounted. This unit includes the primary drive and gearbox, in the customary Vincent manner; there is no reverse gear. Above the engine is the 5-pint oil tank and on the bulk-head a small, very utilitarian petrol tank holds 2 gallons of "commercial grade" fuel. The motor features twin 1-118 in. Amal carburettors, a Lucas magneto, pistons giving a compression ratio of 6.4:1, and it also embodies the drive for the Miller dynamo: No kick-starter is installed, though provision is made for one.

To the rear of the engine is a virtually standard Series "D" back end, sprung with an Armstrong unit, and carrying a 4.00 in. x 18 in. tyre and 7 in. mechanical brakes hydraulically operated. It is cogged at 56 teeth at the moment (though Davis thinks that a 52-tooth rear sprocket would give better results) with a 40-45 m.p.g. thirst at a 60-65 m.p.h. cruising speed. Add to this desirable specification bucket seats and car controls, and you have a good idea of the layout. In addition, there are lights and a windscreen that could be fitted by an enthusiastic owner who is nimble with his fingers. Other technical items are: length 11 ft. 2 in. ; wheelbase 8 ft. 9 in.; width 5 ft.; track 4 ft. 3} in.; height, 3 ft. 1 in.; weight 8 cwt.

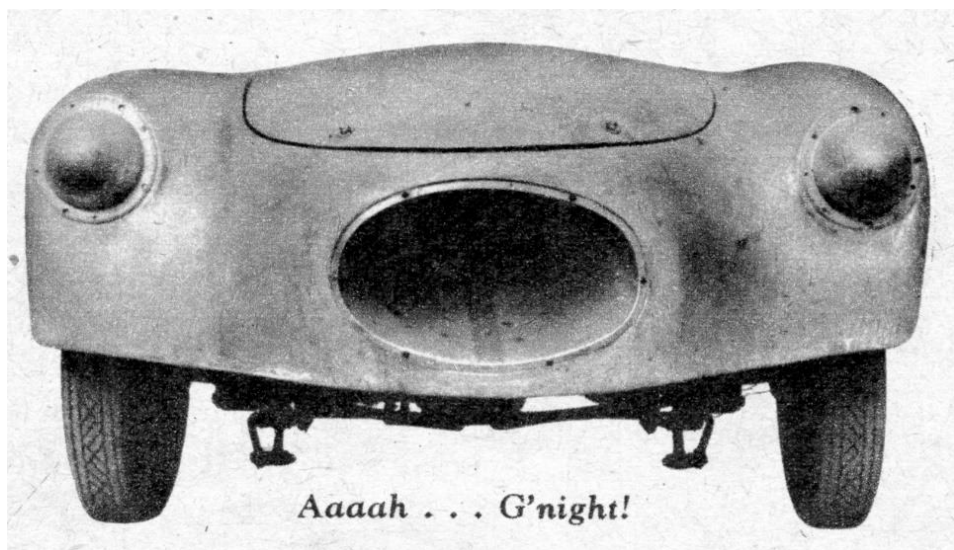
Eighty in Third! Having digested all these features, I was just itching to get at the wheel and hurtle this exciting projectile down the Great North Road. With Ted Davis at the controls, to begin with, we did just that. Urged by the typical thunderous off-beat rumble of the Vincent-twin the Smiths speedometer read 60 m.p.h.; time to change up. A gentle pull on the gearchange lever on the driver's right and the next cog was in; round the needle moved again. 75 m.p.h.—scuttling along and still picking up-80 on the clock; then Davis changed up again! Wow, sixty in second and eighty in third! The wind pressed our cheeks against our face bones as 90 m.p.h. came up, but the magic ton was not to be, for a slight downgrade is necessary to get the last five knots out of it, if one fancies a three-figure velocity. We turned off the A1 highway into a wide side road to await Maurice Rowe, our staff photographer, and with no traffic about, Davis hurled the special around. Did we drift? Beautiful! And absolutely no suggestion of wheel lift or desire to turn turtle; just glorious tyre scream. What a car! What it would be like with a tuned-up "Lightning" engine in I hesitate to think, but I'm told that the mark is 117 m.p.h. The rev. counter, not normally connected up, indicates the rate of progress in this trim.

When I drove it I was fascinated: there is no other word. Put the foot down and the seat promptly shoves you hard in the back and keeps on shoving while you run through the box and watch the needle run round the dial. In the interim you have passed everything else on the road—and this from the most detuned version of the "thousand" that Vincents ever made. Straight-ahead progress at high speed demands real knack—knack that I didn't acquire on such limited acquaintance, for, I was told, there is a tendency with such highly geared steering to over-correct, and until a driver has covered several hundred miles he doesn't feel too much at home. But I had a slightly apprehensive Davis beside me, just in case!

Bend-swinger's Delight! Bend swinging was an enthusiast's delight, despite the very comfortable suspension. In fact, considering that this vehicle is so taut on corners, the comfort can only be described as superb. I could enthuse about it for pages. . .

Not everyone can buy such a potent three-wheeler as this 1,000 c.c. engine job, but there's room for just one customer if he wants some machinery that is different—indeed, unique—and has the necessary shekels! How much? Well, if you are a genuine potential customer why not drop Vincents a line and find out? Ted Davis, the company's Development Engineer, is (*err Was!*) the chap to write to, c/o Vincent Engineers (Stevenage) Ltd., Stevenage, Herts.

The only real drawback, I imagine, would be getting through the crowds to it after leaving it parked for a while!



It all started with A Long Hot Summer

An OVR original from Richard Faulkner

It was a long and hot (for the U.K.) summer of 1971. At that time I was an undergrad in London and besotted with the idea of a Black Shadow. In 1969 I had gone to Isle of Wight festival on a BSA C15. It was 02.30 hrs waiting for the ferry to Ryde Hampshire, that 5 bikes pulled in from London, 4 Bonnies and a Shadow. The boys pulled out bottles from under the leathers, lit up exotic cigarettes and announced that they had changed bikes on the way down. Ah, said the driver of the Shadow, how fast were you going? 60MPH was the reply. Nothing, said the main man on the Shadow, until you do it in Oxford Street. It is to be noted that Oxford Street had bollards all the way down the middle even then. I was impressed. 21 year olds are like that.



The next year I appeared on disreputable Bonnie with 12.5 CR, straight-throughs, clip-ons etc etc but it was still second best. So at my 21 st birthday my kind parents donated the 8 year old family Mini partly to get me off bikes I suspect since my mother had been a surgical registrar. Keeping a car in London as an undergrad was not really a viable option. Bikes were kept in bedrooms, in squats, in lifts (yes really) but cars were a different ball game. Also cars were expensive to run, insure and they rusted rapidly. They were also unacceptably slow unless you had very big money. After some gentle negotiations my old man declared to me that I did not really want the car did I? I agreed but added that it was a very generous present. He responded by advising that I should sell it and buy 'a bloody great motorcycle'. This offered the possibility of the money from the car, the price of a (over-tuned) Bonnie and a terms grant.



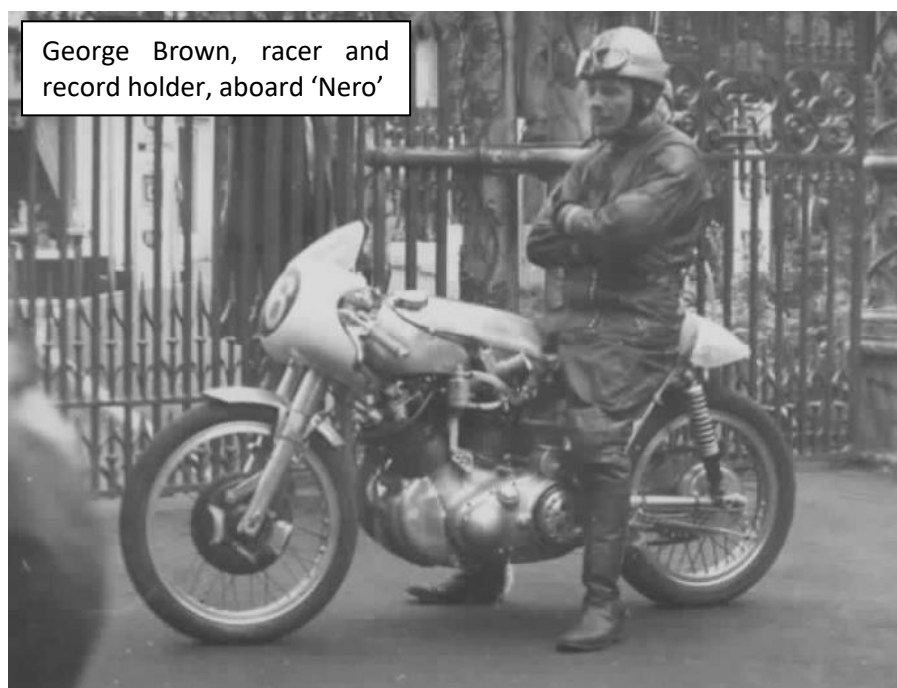
This was all well and good but in the summer of 1971 there were not a lot of standard Shadows for sale despite having a mate who was very much into Vinnies. However, I was put onto one just South of Stevenage which was reputedly a George Brown Special. I knew nothing about George Brown and was not very interested (Oh dear). My self and another mate drove up to see it in an open MG (Oh dear again). We found the place, a tin shed off the Great North Road with the usual smattering of the two wheel fraternity well immersed in 20/50 in attendance. I looked at the machine in question and thought 'Christ that's an ugly bugger, I dont want it'. Ride it, said a fellow who subsequently seems to have been called Pullin. I dont want it said I still set on a standard Shadow. Ride it said Mr. Pullin again, the proprietor of the tin shed. I still dont want it

said I. At this point my mate elbowed me and advised that since we were already here and Pullin was paying for petrol I should have a go.

And that was that. After a mile or so I came to a road to Damascus / Stevenage moment that I never but never wanted to get off. Money changed hands and I rode it home. It was 420 pounds which was 20 more than a standard Shadow and caused serious financial impact at the time. What was more surprising was that a 21 year old riding a Shadow in London, which had been breathed on by George, survived. This I am sure was in no small part due to a mate, now Prof Andrew Lumsden, substituting the utterly passe 7R magnesium front brake for the Yamaha 4 leading shoe article from the watercooled racer. Good move.

Time marched on. All the usual tragedies in the form of marriage mortgage and off -spring (Zorba the Greek) followed by postgrad, emigration and business set up, meant that more time was spent rebuilding houses than having fun but the Shadow was kept indoors warm and dry and run on the occasions permitting.

In 2018 it came to me that now I was retired I really should pull my finger out and find out about this bike since the people who would know about it were not likely to be around much longer. Was it really made by Brown? Was it kosher or all B.S.? Had I put up with near 40 years of snotty afficianados looking down their noses saying 'it is not a REAL shadow' for nothing?



By the bye I had recently bought a Rapide in Aus. When it arrived it already had an electric start fitted which was a joy since my right knee is dysfunctional. It was a revelation and I ordered and fitted the Francois Grosset model to the Shadow. Subsequently I wrote to Francois and thanked him that now I was riding the bike more due to the ease of starting. He wrote back with the line 'GBS -wonderful'. This was the first time anyone in 37 years had made any reference to G.B. so I followed up and he expressed surprise at my ignorance (which surprised no one else) and sent me the links.

Revelation. My word, Nero is a story many of you know already I am sure but it was a whole new chapter for me. The burning question was the identification of the provenance. I followed the links. Apparently there is a well documented history of a Frenchman who approached George on a Rapide and asked him to make it into a road-going Street Nero. At first George was reluctant but in the end did so. That bike was refurbished much later by Francois hence he knew all about it. Apparently George made two other Neros based on Shadows. One was sold to a 'doctor in Scotland' and the other to a 'merchant in Essex'. I looked at the buff log book and it said Essex. Could this be for real?

Where to go from here? Two weeks later the little grey cells synapsed and I remember that there is a George Brown rally run by the Stevenage Motorcycle Club every year. I therefore emailed the club secretary and got a reply to the effect that he did not have a clue but he knew people who did. And so, good to his word, I received 3 emails in the next 24 hours. One was from Tony Brown who indicated that his father wrote nothing down but kept everything in his head. The next was from Philippe Gournay the Vincent registrar in California and the last was from David Watling who was the last owner of my bike 37 year previously. He confirmed that George had made it and that he used to take it into George for servicing. I was tickled pink.

Ha. All the detractors, all the people who said it was ugly (myself included) all the wondering laid to rest. Deep sympathy for the bike who went from having George work on it to a very ignorant 21 year old doing his worse / best.

In conclusion I am now in a position to make some substantiated statement based on personal experience rather than prejudice.

The Nero handles soooo much better than a standard Series C set up. I am not in a position to make judgement of series C v series D. The Nero was what a Vincent should have been aside from PCV's incomprehensible aversion to telescopic front forks. I would absolutely go with the theory of a series D back end but the series C was just plain wrong with the rider being part of the reciprocal weight. The Velocette swinging arm on the Nero works perfectly well in lieu of the series D design which would be better with the suspension unit at the base.



Standard Vincent rear suspension, with the seat firmly attached to the swing arm

And now I would like to thank all those who so kindly helped me with my little issue. Gentlemen, I am sincerely grateful.

As a side line it is to be added that my father just loved the Shadow. It appealed to his inverted snobbery being on the back pulling out of the pub and burning off M.G.s and TR4's, changing down into third to take them on the M4 at 100MPH, senile delinquent that he was, reliving flying Beaufighters in North Africa picking up a DFC and bar on the way.

Stay upright Guys. Best wishes
Richard Faulkner

P.S. if anyone has a set of twin crank cases, plus a back and front end of anything I have folding money waiting to change hands. I am in the middle of a number of projects which are escalating as we speak. Also where is Nero that went to Scotland????

Overhauling the Power Units of the 498 c.c. and 748 c.c. V-twin

B.S.A.s

Part I—Maintenance Details for Two Famous Pre-war Engines Made for Services and Civilian Use

MANUFACTURED mainly as part of a Government contract, the B.S.A. 498 c.c. 50° V-twin J12 was listed commercially for the first time in 1934 when, catalogued at £67 10s., the model provided a likeable alternative to the several 1,000 c.c. V-twins then popular. It is probably true to say that while large deliveries were made for police and R.A.F. use, the J12 really never caught on, though it was continued in 1935-1936 in slightly modified form.

During the latter year the J12 was superseded by the Y13, a somewhat similar model with bore and stroke dimensions producing a swept volume of 748 c.c. The Y13 was carried on through 1937 and 1938 and might have endured but for the imminence of the vertical twin school of design and the war in the following year. Because V-twin engines are no longer made at Small Heath, nearly all J12 and Y13 parts are obsolete. Notable exceptions are certain of the cycle parts common also to the "Empire Star" and "Blue Star" ranges, proprietary bearings and some of the bushes and similar components with wide applications to pre-war B.S.A. engines.

The present-day purchaser of one of these twins, therefore, finds himself with an interesting proposition; he must face the fact that service department help is not likely to be forthcoming and, in the majority of cases, he will have to have spares made specially or improvise as best he can. On the other hand the power units of both models were very substantially built and if the machine is in fairly good all round order a knowledgeable owner should not have difficulty in reconditioning and renovating.

No special works tools are required; sprockets and pinions can be withdrawn with the normal type of extractor and a set of good ring spanners, supplementing a current B.S.A. tool kit, will deal adequately with most of the practical work.

The Top End

As the o.h.v. gear is only partially enclosed, top end dismantling work comprises simply the removal of the tappet covers, the T-shaped oil feed pipes to the rockers, slackening the top flange nut to free each of the push rod tubes and taking out the bolts which hold down the rocker housings.

The rockers run in bushes (eight-off, two per spindle, separated so that an annulus is formed to hold grease). New bushes can be made up from phosphor bronze bar, to the dimensions given in the Useful Data panel, and pressed in.

Further dismantling work involves withdrawing the cupped, hollow push rods, marking them so that they are reassembled in the original order and taking off the cylinder heads.

In good condition, the outer valve springs

(4 off) have a free length of 2 in.; shorter, the inner springs ought to measure $1\frac{17}{32}$ in. Some degree of "set" is permissible, of course, but coils which are sagging more than a total of $\frac{3}{16}$ in. should, if possible, be replaced. Dimensionally, the inlet and exhaust valve guides are similar; both have a bore of .3525/.3515 in. and an outside diameter of .562/.561 in. Note, however, that the inlet guides are slightly differently shaped and, more important, are drilled for lubrication purposes.

Forty-five-degree valve seatings may need to be re-cut and made good and, if pocketing has taken place during the 16-year period which has elapsed since the last of these twins was made, a suitable pilot cutter can be used for this work. The valves differ in that the exhaust valve is flat and a tulip-headed valve is fitted on the inlet side.

Removal of the flange-fitting push-rod tube and cylinder-base nuts permits the dismantling of the barrels, revealing the pistons, each of which carry two compression rings only. Renovation of the small-end assembly produces no insuperable difficulty. No circlips are fitted; instead, the gudgeon-pins carry press-fit, push-in end-pads. The small-end eyes are substantial but can be rebushed, if wear has occurred, by using a bolt-type puller and distance pieces; final reaming to the dimensions shown in the Useful Data panel is necessary. Incidentally, B.S.A.'s tolerance of three-tenths of a thou. is the fine-limit allowance taken from the factory working drawings. Actually, the .6248/.6245 in. dia. gudgeon-pin of the 498 c.c. model is near enough to $\frac{1}{8}$ in., and if the fitted bush is reamed to give this pin a good push-fit the job will pass muster.

With reservation, it might be said that similar advice applies to many of the dimen-

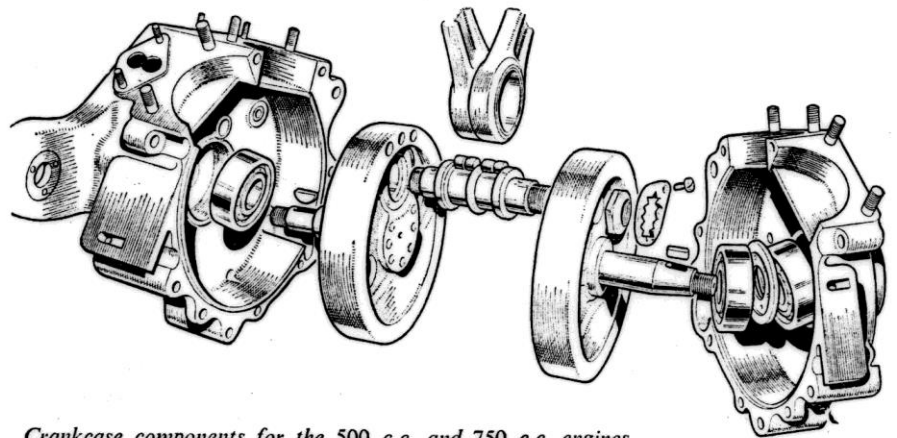
sions figuring in this article; the man possessing workshop machinery will appreciate four places of decimals; others, whose micrometers are calibrated only to thous. will do well if their fitting work is accurate to that limit.

At this stage note the disposition of the two connecting rods; if they are inadvertently fitted the wrong way around during reassembly the mistake will entail completely taking down the crankcase again and splitting the flywheels. The big-end bearing is composed of 56 $\frac{1}{4}$ -in. by $\frac{1}{4}$ -in. rollers, but neither the big-end connecting-rod bushes nor the crankpin are available from B.S.A.s as spares. New rollers may act as a palliative to the threat of advancing wear, but they obviously cannot cure the trouble. Main bearings, on the other hand, are standard Hoffmann components and, therefore, fairly readily available. To the skilled man, B.S.A.s will supply crankpin dimensions but, even if one can get such a part turned up, there are still other problems, such as heat treatment, with which to contend.

The crankpin roller track diameter, from which the degree of wear can be gauged, should be 1.1253/1.1251 in. in as-new condition. This track, in the case of the 498 c.c. model, is 1 in. wide with a centre flange separating the two double-row roller race assemblies. A similar arrangement applies to the 748 c.c. engine except that there is no centre flange. In like manner big-end eye wear can be checked, and further expectation of life assessed, from the factory dimension which is 1.620/1.618 in. This bush is pressed into the con. rod and its O/D should be 1.878/1.877 in.

With the Magdyno and its driving pinion and idler removed, the engine-shaft shock-absorber assembly dismantled, and the two cam-pinions and mainshaft pinion withdrawn, the crankcase halves come apart conventionally.

In new condition both engines were fitted with a Hoffmann No. 325L roller bearing to support the timing-side mainshaft, and had an oil-seal washer interposed between the bearing and the inner face of the housing. A similar roller bearing was used next to the flywheel on the drive side; then came the oil seal—shown in the illustration—followed by an outer bearing of the journal



Crankcase components for the 500 c.c. and 750 c.c. engines.
Note the oil seal between the two mainshaft bearings on the drive side.

ball type, catalogued by Hoffmanns as No. 325. The dimensions are identical in the three cases, i.e., bore .984 in. by O/D 2.4409 in. by 17 mm., and each can easily be jarred out of a pre-heated crankcase and replaced while the casting is hot. No trouble there.

Difficulties, if any, may occur in finding, or making, spares to replace parts such as the three exhaust-lifter bushes which, like the cam and idler bushes in the timing cover, are of steel. Moreover these, and the four phosphor-bronze cam-pinion bushes, are tapered at the plain end by .002 in., this facilitating the driving-in and ensuring a really tight fit as the greater dimensions near the flange end are introduced.

Cam followers, rather than the cams, are likely to need attention; they can be built up and correctly radiussed to .375 in. by grinding.

Lubrication

Driven directly from the mainshaft timing pinion, the gear-type oil pump is a press fit in the wall of the crankcase. It is held in position by two bolts, locked by tab washers, and leakage of oil from the crankcase area past the pump housing into the timing case is prevented by three compression bands—fitting like piston rings—around the pump body.

Oil is delivered to the feed control chamber in the timing cover. Here a threaded needle valve, raised or lowered at the discretion of the user, either frees or partially blocks the flow of lubricant. It cannot cut off the supply completely. From this control point, oil passes the pressure release valve, impinges on the "tell-tale" piston and crosses to the hollow mainshaft via a spring-loaded nozzle, pressed against the end of the shaft. Ignore minor leakage at this point; it is not serious and serves to lubricate adjacent pinions. Drillways continue into the flywheel and crankpin, with bleed holes leading directly to the centre of the double-row big-end roller assemblies.

A second direct feed leads from the distribution chest in the timing cover to the rockers and inlet valves; this is the purpose of the T-shaped feed pipe running up from the crankcase union close to the delivery and return pipes. The pump, a gear-type component, is unlikely to need attention other than cleaning; end-play in the gears can be corrected by rubbing down on a glass plate, using fine emery cloth as a lap. It is obviously wise to take the opportunity of

cleaning all oilways and pipe connections thoroughly before reassembly.

Reassembly

Have the requisite washers and gaskets ready: a thin paper washer goes between the oil-pump flange and the rim of the recess into which the pump is fitted; there are two cylinder-base washers; two cylinder-head gaskets, and a washer at the base of each push-rod tube.

Assemble carefully, remembering that performance potentially lost by reason of worn parts which you may have had to refit, can be regained to some extent by patience in seeing that everything is as right as it can possibly be. Check that new bushes offer a good, free, bearing surface without being slack. On the other hand, avoid having a just-too-tight bush, believing that it may help towards quieter performance and that it will ease down during the first few miles. It is not undue repetition to remark again about refitting the con. rods of the 498 c.c. engine with the longer side of the small ends—which appear to be lop-sided—facing inwards, towards the centre of the engine. The cylinders are not offset and this arrangement is essential if the con. rods are to meet side-by-side on the common crankpin. The Y13 has a forked big-end assembly.

Lock up the crankcase halves and leave the barest trace of end-play in the shaft assembly. In the case of the Y13, locking up the cush-drive assembly pulls the whole crankshaft over to the drive side, automatically leaving a small degree of "float" on the timing side. Replace the pistons, cylinders and heads, with their respective push rods and timing gear, then, with a .002-in. tappet clearance, reset the valve timing in accordance with the data given in the panel. The remainder of the work is a reversal of initial dismantling operations. Refit the Magdyno, timing the ignition on the forward cylinder. The contact-breaker points should just break $\frac{1}{16}$ in. before T.D.C. piston position.

Finally, pay particular attention to the short inlet pipe bridging the two inlet ports; see that all the joints are completely gas-tight. The condition of this important part of the induction system, and of the carburetter parts, too, has a particularly strong bearing on the satisfactory running of the vee-twin type of power unit.

Next week the gearbox and cycle parts of the J12 and Y13 models will be dealt with.

USEFUL DATA

(Common to both models unless otherwise stated.)

Engine Dimensions : J12, 60 mm. bore x 80 mm. stroke = 498 c.c. Y13, 71 mm. bore x 94½ mm. stroke = 748 c.c.

Compression Ratio : J12, 7.25 : 1. 22 b.h.p./5,000. Y13, 5.5 : 1. 29 b.h.p./4,800.

Valve Timing : Inlet opens before T.D.C. 25°. Inlet closes after B.D.C. 65°. Exhaust opens before B.D.C. 65°. Exhaust closes after T.D.C. 33°.

FINE-LIMIT DIMENSIONS

Cam Pinion Bush (4 off: phosphor bronze) :
O/D .7525/.7515 (.002-in. taper at plain end).
O/D at flange end, $\frac{3}{4}$ -in. I/D .5655/.5645 in.

Gudgeon Pin : J12, .6248/.6245 in. ($\frac{1}{4}$ -in. approx). Y13, .7502/.7498 in.

Exhaust-lift Bush (Long, 1-off) : O/D .5655/.5645 (.002 in. taper at plain end). O/D at flange $\frac{3}{4}$ -in. I/D .3755/.3745 in.

Exhaust-lift Bush (Short, 3-off) : (As above.)

Cam and Idler Pinion Bush (in timing cover) :
O/D .753/.752 in. (.002-in. taper at plain end).
O/D at flange 1.000 in. I/D .502/.501 in.

Valve Rocker Spindle Bush (8 off) : O/D .815/.814 in. (.002 in. taper at plain end). O/D at flange, $\frac{1}{8}$ -in. I/D .6255/.6254.

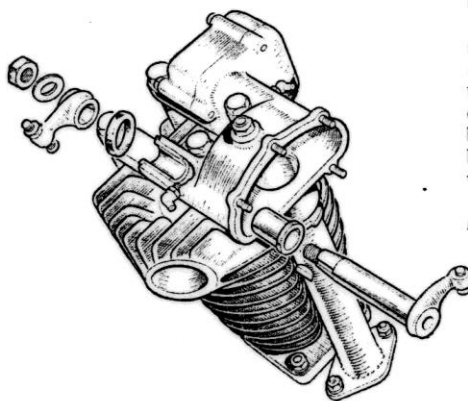
TRANSMISSION

Primary Chain : J12, $\frac{1}{2}$ -in. pitch x .305 in. (62 pitches). Y13, as J12, with 70 pitches.

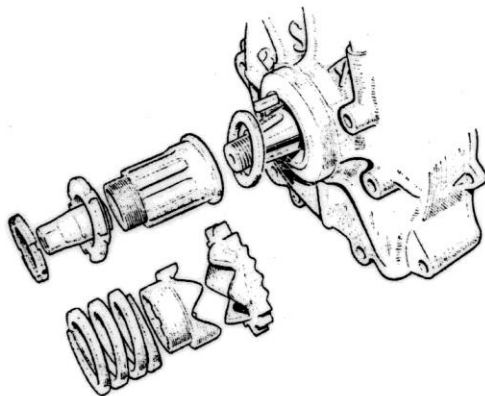
CARBURATION

Amal Carburetter.

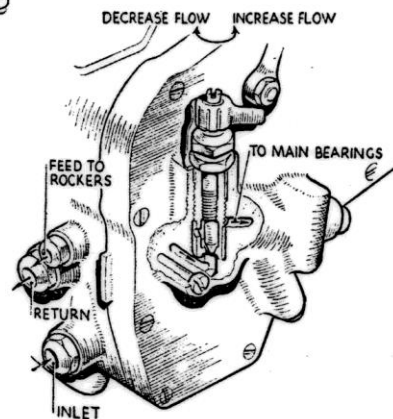
Type	J12	Y13
Float Chamber	4/130	76/001
Main jet	64/078	64/078
(With air cleaner)	80	140
Slide	75	120
Needle	4/4	6/3
	2nd notch	3rd notch



(Above) Top-end details showing the rocker bushes. A felt washer is placed between the end of each bush and the rocker arm.



(Left) The engine-shaft and shock-absorber assembly. The felt washer forms an oil seal between the splined sleeve and the outer mainshaft bearing.



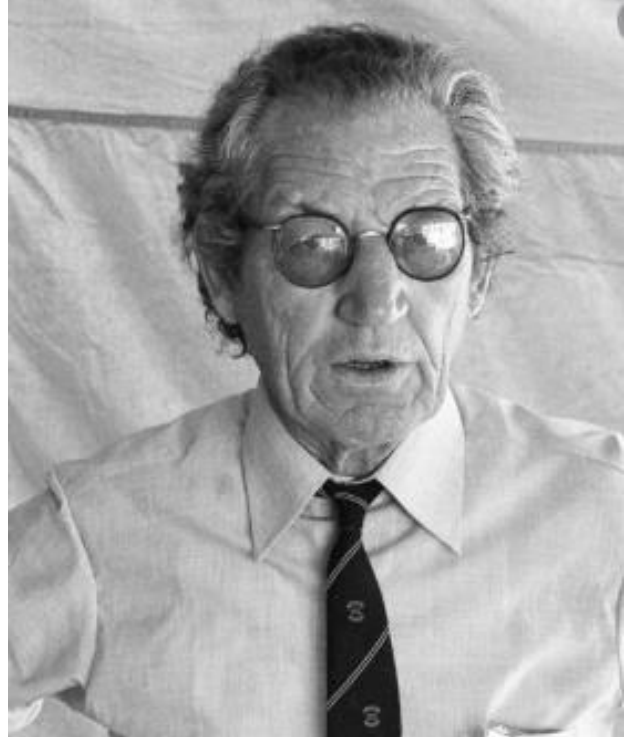
(Right) Lubrication arrangements are indicated by this cut-away impression of the variable feed control, distribution oil ways and pump connections.

Tuning For Sprints

Priceless Words of Know-how Spoken by Technical Ace Phil Irving to a Gathering of Sprint Enthusiasts in London in 1959

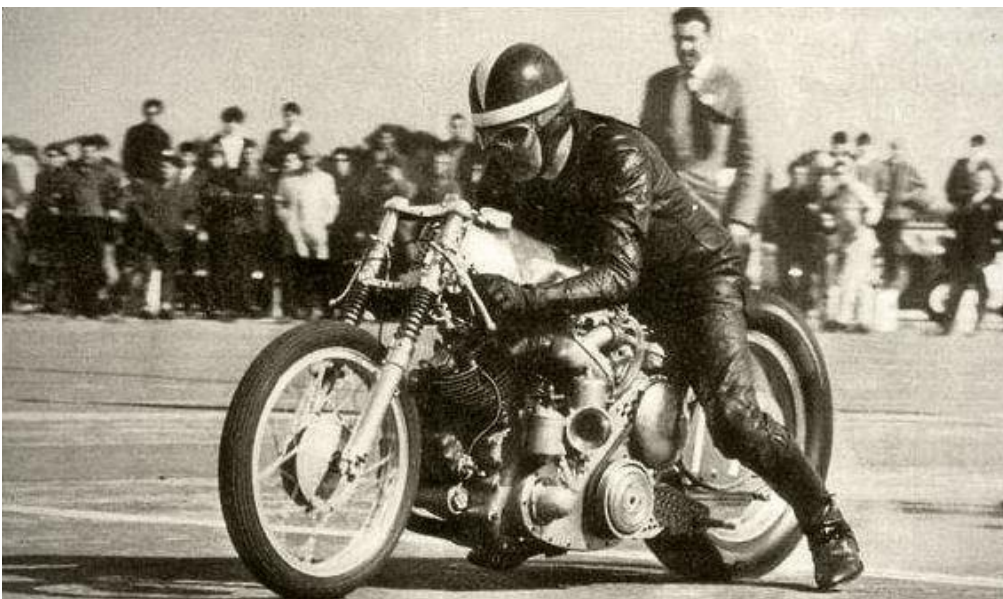
“OVER the years I have learnt far more from failures than from successes. I find that if you succeed, you are inclined to go out and 'celebrate; but if you fail, you sit down and think and that is when you really learn.”

Spoken with a casual Australian drawl, these words came from development engineer Phil Irving. He was addressing sprint and road-racing enthusiasts at the Prince of Wales Tavern in Drury Lane, London back in 1959. The talk was arranged by the National Sprint Association.



Following his introduction by bearded Denis Jenkinson famous author and ex-racing man, Phil Irving mentioned the entirely different requirements of a sprint engine and a road-racing unit.

For sprinting the emphasis was on good torque in the lower and middle registers of the speed range rather than on exceptional top-end power. Time lost at the start could never be regained. Furthermore, maximum power in a sprint engine was required only for a few seconds, as distinct from the sustained power output required of a road-racing unit. The aim was to dispense with any "dead" metal which was not doing a specific job in order to cut down inertia forces as much as possible.



On o.h.v. engines with solid Duralumin pushrods incorporating steel end-caps and a clearance adjuster, useful weight saving could be achieved by discarding the end caps and making up new rods to the correct length from solid Duralumin.

Valve stem end-caps of various thicknesses could be used for altering clearances. The fact

that light alloy would wear rapidly was of little consequence as the engine was run only for short spells. Much of the piston skirt could safely be cut away in slipper form to leave a fore-and-aft bearing surface possibly as narrow as $\frac{1}{4}$ inch.

While on the topic of cutting down frictional losses Mr. Irving said that another worth-while saving was to use just one compression ring. On some engines it might also be possible to dispense with the scraper ring. It should be remembered that there would be little or no opportunity for running-in. Hence if only one ring were used it should be one which would quickly bed down such as an L-shape cast-iron Dykes ring.

Should it be necessary to retain the scraper ring, worth-while modifications could be made to the piston. Normally, the oil holes drilled at a downward angle in the step or bevel below the scraper were intended to allow oil to pass through the piston into the crankcase. But, in the words of the speaker, "Just because you want a thing to do what you think it should do, it doesn't necessarily mean that it will do it!". To perform such a difficult manoeuvre the oil would have to accelerate more quickly than the piston which, at around 6,000 r.p.m., was a pretty tall order! A more practicable method was to drill holes straight through the piston behind the ring.

Again emphasizing that bottom-end power rather than a fabulous b.h.p. figure at the top was the requirement, Mr. Irving stressed the importance of good volumetric efficiency.

Apart from polishing ports, a means of improving gas flow was to reduce the width of the inlet-valve seat and facing to approximately 0.040 inch by radiusing the port and valve. This should have no ill effects on a sprint engine and the resultant high rate of wear could be counteracted by having the valve face stellited.

Some well-intentioned people cut away the part of the inlet guide projecting into the port to leave as free a path as possible for the gases, In Mr, Irving's opinion it was bad practice, for the guide could not then properly support the valve and at high revs the valve head could flutter and hence fail to seat correctly thus losing power.



A modification recommended was to widen out the area around the exhaust-valve guide boss. That allowed the exhaust flame to expand slightly as it left the port and resulted in a shade more power. Care was necessary to ensure that there was sufficient metal to spare, other-wise a too-enthusiastic tuner could find himself burrowing into the rocker box.

And so the talk went on. Anecdotes were thrown in and were highly appreciated. Members of the audience were then given a chance to fire questions.

This item was first printed in The MotorCycle in Nov. 1959

Renovating the 1934-8 J12 and Y13 V-Twin o.h.v.

B.S.A.s**Part 2—Practical Work on the Transmission and Cycle Parts of Two Popular Pre-war Small Heath Models.**

ONE can get to work on the gearbox, frame and wheels of the 498 c.c. J12 or 748 c.c. Y13 B.S.A. V-twin models with confidence. Engine renovation, described last week, necessitates considerable improvisation but, fortunately, numbers of components in the transmission and cycle-part assemblies were used in later B.S.A. models—notably the "Blue Star" and "Empire Star" ranges and, in some cases, the well-known "M" group which is continued today.

Probably the gearbox presents the biggest problem for, apart from the two mainshaft bearings, which are Hoffmann units employed in similar boxes as far back as 1932, clutch plates and, perhaps, the clutch spring, there is little interchangeability with bits and pieces from more modern gearboxes. However, like the power unit, the gearbox is a sturdy, hard-wearing assembly which, if maintained in good working order, should be quite capable of giving its owner a further lengthy period of service. Certainly, what is lacking in service facilities and spares is compensated for in the general simplicity of the design, a most useful point if the machine is to be run and maintained by a novice seeking practical experience.

The 1934 versions of the J12 and Y13 saw the dawn of the foot-change era: catalogues of early models had illustrations of these two machines with a straightforward hand-change lever, rod linkage to an operating quadrant which, when the gearbox end-

cover is removed, is seen to connect with the selector shaft pinion. Engagement of gears is determined by a modern-type selector shaft with pegged arms, each with a profile cam, the only form of "positive stop" being a spring-loaded plunger pressing into the notches, or indentations, in the quadrant. Later versions of the two twins are shown with a foot-change adaptor and, finally, with an "M"-type gearbox, fitted at an angle between the engine and the saddle down-tube. In this case the current all-enclosed positive-stop foot-change mechanism is used and, without doubt, some 1938-40 "M" part numbers will be applicable.

For obvious reasons this article deals with the semi-obsolete model in which the owner finds no difficulty when it comes to stripping down the hand-change linkage, detaching the short clutch operating arm, disconnecting the clutch wire and, after taking out the nine flange screws, withdrawing the outer cover complete with the kickstarter mechanism. Dismantling to this extent is necessary to renew a broken K.S. spring, incidentally.

Those engaging in a major overhaul, if they have not done so already, should set about getting the clutch off while the gears, still in position in the box, can be used to lock the mainshaft, so facilitating the removal of the clutch centre spring. This is retained by a large nut and it may be necessary to tap this nut to start it turning.

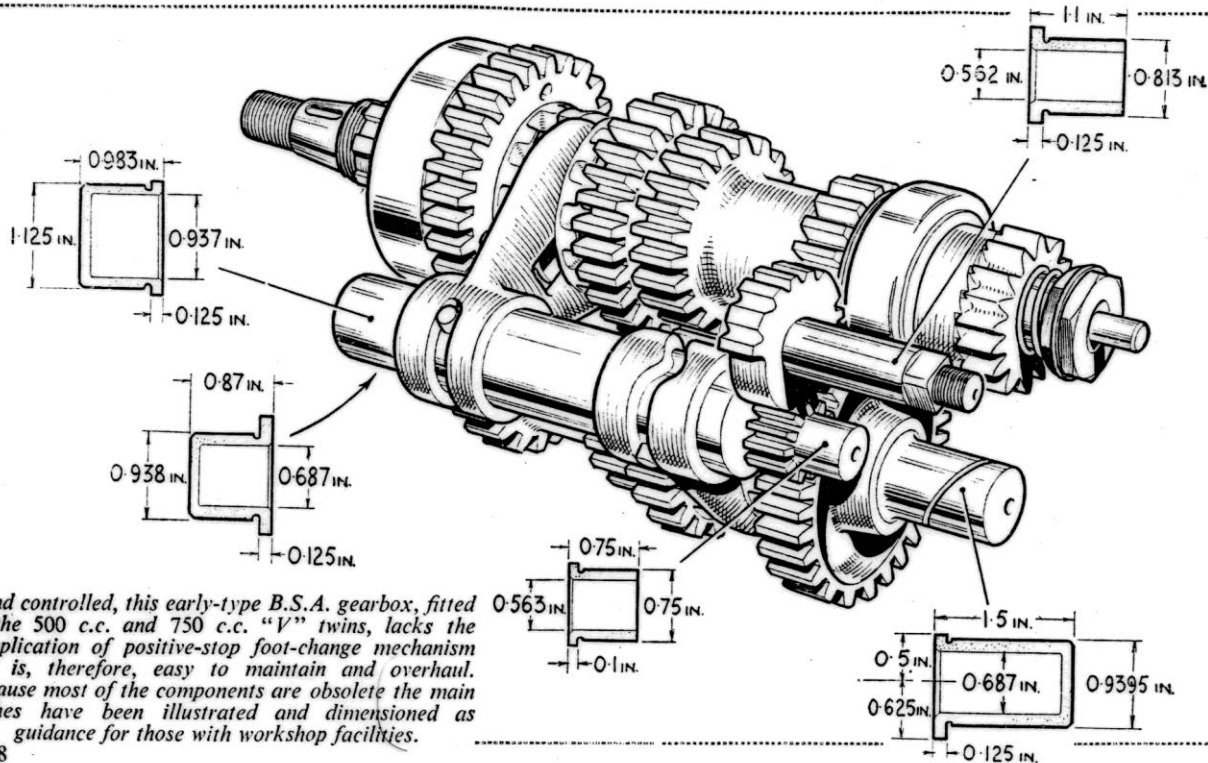
for the pressure of the spring against it is considerable. Moreover, when the nut is almost free of the clutch-centre threads, stand clear, or drape a piece of heavy cloth or sacking in front of you. Finally freed, the spring is capable of throwing the nut a considerable distance and forcibly, too.

This releases the clutch plates, the sprocket running on a built-in race, and the back plate. The clutch centre is keyed to the mainshaft and held in position by the mainshaft end-nut. Note the oil seal placed immediately behind the clutch centre: it is apt to get overlooked in slackening the sprocket nut—locked by a tab-washer—and withdrawing the sprocket.

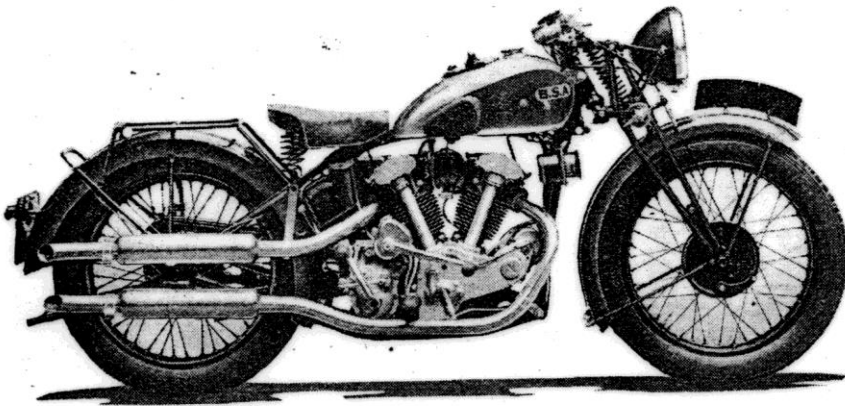
Turning to the K.S. end of the box, work can be continued here by taking out the appropriate screws and pulling off the inner plate which carries the smaller of the two mainshaft-journal bearings and a layshaft bush. The ball bearing is of Hoffmann manufacture with a bore of $\frac{3}{4}$ in. by $1\frac{1}{2}$ in. O/D by $\frac{9}{16}$ in. wide. It can easily be jarred out of its housing after pre-heating up to domestic-oven temperature. It is backed by a steel washer and a fibre oil-sealing ring, with another steel washer on the inside of the box, between the seal and the 16-T pinion. Mention is made of the oil seal at this stage because it is quite likely to slide off, as the inner plate is removed, and drop on the garage floor unnoticed.

The layshaft bush at this end is a substantial flanged component which can be driven out if it needs renewing. Pressed or driven in, in a similar manner, a new bush must protrude through the inner plate exactly $\frac{1}{2}$ in., so that, when the outer cover and attachments are refitted, the bush will locate with the K.S. spindle counterbore.

At the clutch end, the mainshaft is supported by a Hoffmann No. 135 ball journal



Hand controlled, this early-type B.S.A. gearbox, fitted to the 500 c.c. and 750 c.c. "V" twins, lacks the complication of positive-stop foot-change mechanism and is, therefore, easy to maintain and overhaul. Because most of the components are obsolete the main bushes have been illustrated and dimensioned as guidance for those with workshop facilities.



The 1934, 498 c.c. o.h.v. twin with foot-change adaptor.

with a bore dimension of 1.378 in. (35 mm.). The O/D is 2.8347 in. (72 mm.) and width .6693 in. (17 mm.). If this bearing is removed, it is important that a slightly dished steel washer goes at the back of the race in a shallow recess provided for the purpose. A similar washer must be placed between the bearing and the 28-T sleeve pinion; the race, therefore, has a dished washer on both sides. Note that the raised outer diameter of both washers should face away from the bearing.

At this end the layshaft is supported by a bronze bush which, if necessary, can be driven out and replaced quite simply. The dimensions of these and other bushes are indicated in the accompanying illustration of the gear cluster. Incidentally, it is interesting to mention that this sketch is one in which *Motor Cycling's* artist John Way demonstrates technical illustration of a highly skilful type for, as will have been gathered, not so much as a single pinion was available at B.S.A.'s for the purpose of this article. The perspective drawing you now see is an accurate, proportional picture created by the artist from working and general arrangement blue prints.

Willing help forthcoming from the B.S.A. design staff also deserves mention. The purpose of these articles is, largely, to help the enthusiast, perchance in the backwoods abroad somewhere, to carry on and make use of a good old machine which might otherwise lie in idleness. And as we extend the scope of the series to the older and obsolete models, artist's skill and manufacturers' co-operation play an increasing part in the final presentation.

There is not a great deal one can do to make good pinion or dog wear and tear; the fork arms may be worn and the cam profiles sloppy, so that the stationary pegs fail to do their jobs properly. I know of no cure except appealing for second-hand parts by means of *Motor Cycling's* "Mutual Aid" feature, or getting them from one of the recognized specialists in part-worn components. Always it is a question of degree — are their parts less worn than yours?

Welding or Stelliteing of steel parts can be carried out and, to the man in a position to do serious manufacturing work, B.S.A.'s will supply working drawings. So it is by no means a hopeless task.

The Clutch

Composition rings provide the clutch friction drive; unlike those used in later-type machines boasting primary-chaincase oil

USEFUL DATA				
Wheel Details:		Rims:		
J12		WM 3.19		
Y13		WM 3.18		
		Spokes:		
J12	Right hand (20) 10g. × 6½ in. long.			
	Left hand (20) 10g. × 8½ in. long.			
Y13	Right hand (20) 8g. × 8½ in. long.			
	Left hand (20) 8g. × 10 in. × 8⅞ in. long.			
TRANSMISSION				
Chains:				
J12	Primary: ½ in. pitch × .305 in.	(62 pitches)		
	Secondary: ⅝ in. pitch × .250 in.	(96 pitches)		
Y13	Primary: ½ in. pitch × .305 in.	(70 pitches)		
	Secondary: ⅝ in. pitch × .375 in.	(95 pitches)		
Gear Ratios:				
	Top	Third	Second	First
J12 } Solo	4.8	6.3	9.9	14.3 to 1
Y13 } S.C.	5.3	6.9	10.9	15.8 to 1

baths, the J12 and Y13 clutch linings are not sealed by a protective dome cover. They work under cooler conditions and, generally speaking, neither the friction rings, the sprocket ball race nor centre spring will be found in need of serious attention. If it is more convenient to do so, the linings, sprocket and plates can be assembled on the clutch centre and the spring put in position in its recess and locked up as a separate assembly. There is no need to build it up piecemeal on to the mainshaft. A really tired spring can be made more lively by packing out with shims, but do not overdo this expedient or you will severely restrict the movement of the coils and so limit the degree to which the clutch will operate. Clutch drag will then exist in place of clutch slip.

Reassembly

The complete clutch is left on one side until the mainshaft and pinions, together with the layshaft assembly, is in the shell and the inner plate at the k.s.-end screwed securely in position. Remember the oil seals at this end of the mainshaft and check that the gear selector quadrant and pinion are correctly

positioned; they should be meshed so that the two pop marks are adjacent. See that the point of the plunger is not rounded and that the spring is up to its job. Then replace the outer cover, complete with k.s. components, tighten the nine screws evenly; reconnect the short gear-operating lever; push in the clutch-operating rod and adjust the clutch arm; finally, replace the clutch cable and control-rod linkage. Fill with engine oil up to the level plug. A number of these boxes were fitted with the long-established inspection plate. Its function, I understand, is just that. It plays no part in the dismantling or reassembly of the box but is useful for checking the condition of the parts. A paper washer should be used to ensure oil-tightness at this point.

Hub Components

Wheel arrangements differ according to the model. The J12 front wheel is not quickly detachable and the complete hub and brake must be removed if the wheel is taken out of the forks. The hub is supported by a taper bearing of the Timken type 1178X/1130N1. The dimensions of this bearing are: bore, ⅝ in. by 1¼ in. by ⅞ in. The B.S.A. part number is 24-6860 and similar bearings were used in the "Blue Star" and "Empire Star" models.

The B.S.A. part number for the rear-wheel bearings is 26-6890 and the Timken number is 05079/05185. The dimensions in this case are: bore, 20 mm. by 47 mm. by 11 mm.

On the Y13, both wheels are of the quickly-detachable type and in this case the taper bearings carry the B.S.A. part number 26-6890 and they are identical with those used for the 1,000 c.c. s.v. V-twin.

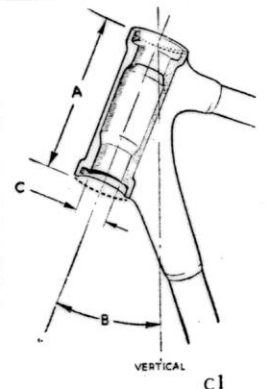
Suspension

Girder-type front forks were used for both models and, in the case of the J12, the complete assembly is identified by the B.S.A. part number 15-5221, which applied also to the 1932-1936 "Blue Star" and to the 1936 "Empire Star."

B.S.A. part number 33-5005 applies to the complete front-fork assembly for the Y13, the same component being used for the 1,000 c.c. s.v. twin from 1930 to 1939.

These forks were of the bushed type and it is not difficult to drive out worn bushes and press in new parts, turned up from phosphor-bronze material if manufacturers' spares are not available. The fork assemblies are supported in both cases by top-and-bottom ball journals containing 18 ¼-in. balls per race. These bearings are of the thrust type and dimensions are given with the drawing, which also shows a head angle of 26° 30 min.—for the benefit of those who, unable to obtain spares, may care to experiment with telescopic forks of another make.

B.S.A. 498 c.c. and 748 c.c. V-twin head-lug data: (A) overall depth 6.75 in. (B) 26° 30'. (C) Thrust-type races, O.D. 1.916 in., I.D. 1.187 in. Top and bottom races complete are not interchangeable.



Practical Dynamo Maintenance

A OVR contribution from Bill Topping

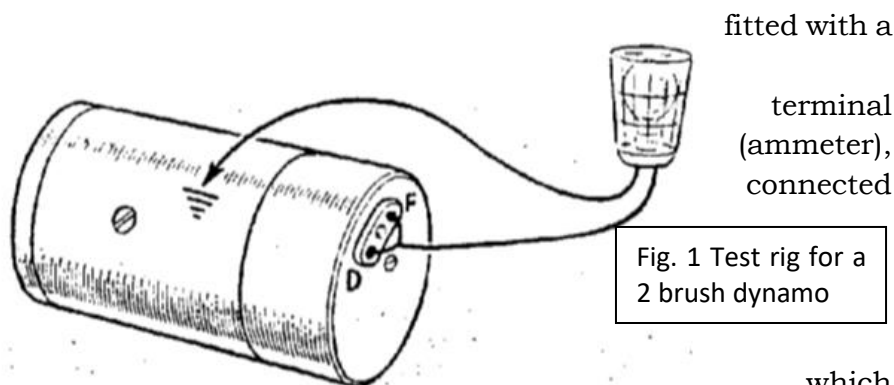
DESPITE the increasing use of crankcase mounted A.C. equipment with a rectifier for D.C. conversion, it will, in my opinion, be a very long while before the conventional magneto and/or dynamo are superseded. For a considerable time to come, therefore, the need to overhaul these parts will continue seasonally to produce a headache for the uninitiated or, on the other hand, a degree of pleasure and sense of achievement in those who know how to set about the task.

"Know-how," actually, is what the customer pays for if he farms out the work. Dynamo spare parts are not necessarily expensive, but the time involved, even when an expert mechanic is doing the work, can make the bill formidable. To be one's own mechanic, however, calls for a little knowledge of how to diagnose trouble without needlessly dismantling the complete equipment.

To test a dynamo, one needs an ordinary inspection lamp, fitted with a 12-v. bulb. You may ask why 12-v.? Well, a dynamo has to be tested as a separate component, and as such must be disconnected from the remainder of the charging circuit. That entails the removal—on two-brush dynamos—of the two wires marked "A" and "F." Older three-brush charging systems have dynamo terminals marked "POS" and "F." With the circuit thus disconnected and the engine running, a rise in voltage occurs through a building up of current due to the absence of any stabilizing factor, i.e., the battery or regulator. At fairly high speeds 25 v. on open circuit (wires disconnected) may be forthcoming so that it will be seen that a 12-v. bulb is needed to absorb this high voltage; even then the engine should be accelerated up very gently, otherwise the bulb may blow.

An initial test of a **two-brush dynamo** is to bridge the "D and F" terminals with a short length of wire. Now connect the test-lamp from the bridge-wire as shown in Fig 1, to the frame, earth of the machine or body of the dynamo. Start the engine and run up slowly. An increasing glow should be apparent in the bulb as engine speed is increased. If there is no light at all from the bulb, then the dynamo is not functioning. A weak glow indicates either a slipping drive to the dynamo—an occasional fault in Magdynos fitted with a clutch drive—or a partial breaking down of the armature windings. But before condemning the dynamo absolutely in these circumstances, try polarizing the field by connecting a lead direct from the live side of the battery to the "F" terminal of the dynamo for a second or two. This expedient often works in cases where the machine has been standing for some time without being used.

Most **three-brush dynamos** are cut-out unit integral within the instrument. Thus the "D" becomes "POS," or "As" because this lead must be to the live side of the battery via the ammeter. No external regulation of charge is usual with a three-brush dynamo, except for a simple change-over switch inserts a resistance between the windings and earth. This is usually situated just behind the lighting/charging control switch.



fitted with a terminal (ammeter), connected

which field resistance

It follows, then, that to obtain a test reading from a three-brush dynamo the "F." or field terminal must be connected to earth. The "POS." or "A." is connected to one side of the lamp and the

engine speed increased gradually. Polarizing can in this case be affected, if necessary, by touching a " POS " line from the battery straight on to the field brush. This sends a current through the dynamo armature coils to earth and induces charge—unless there is something radically wrong. Do not forget that a faulty cut-out will not pass any dynamo current through your test-lamp, so close the points by hand while testing, to establish this possibility. Of course, if a charge, or light, shows only when the cut-out is manually closed, then the chances are that the cut-out itself is at fault. One other possibility when this symptom occurs is that the armature windings are partially broken down, resulting in a proportionate decrease in voltage, but not necessarily amperage. The cut-out relies on voltage (7.2V) to overcome the tension spring that holds the points apart. If there is insufficient voltage then the points will not close.

Similar tests, then, **apply with both two-and three-brush dynamos.** Remember: first test with a lamp, then try polarizing. Fingering the brushes. Checking connections also cleaning the commutator bars, may also bring success.

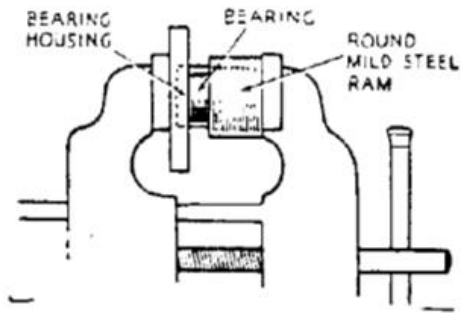
These methods failing, the dynamo must be removed for a thorough examination. Some machines have the dynamo fitted very inaccessibly; despite this snag: it usually pays to spend time taking the instrument off the bike and working on the bench.

Inspect everything, for one fault may cause another. A typical example is that of the dynamo which is forever burning out armatures. After the second or third armature, looking like a burnt offering, has been removed from the dynamo, the owner, per-chance by accident, checks the bearings. He finds, say, a commutator end-bush is worn and he replaces it. Behold, no more armatures burn out; the problem is solved because the bush is no longer allowing the armature to rub the field pole at high speed.

With this point clear in mind you can start the really interesting part of the work. Lift up the brush springs and slide the brushes partly out of the holders. Allow the springs to rest against the sides of the brushes. This achieves the effect of "cocking " the brushes so that they remain in the holders yet are free of the commutator. It is important not to get the brushes in the wrong holders when reassembling and "cocking " them ensures that confusion does not arise on this point.

The through bolts can now be removed and the armature withdrawn. Before cleaning the component parts of the dynamo make a careful examination. Initial observation can reveal a lot. Note if burning has occurred around the brush-gear due to the carbon dust shorting. Another thing which is sometimes overlooked is a ring of solder finely sprayed around the inside of the dynamo carcass or yoke at the commutator end. This is a sign of severe overheating, which melts solder at the commutator bars and invariably causes an open-circuit, or ' break,' in the armature windings. In fact, it may be said that three out of four armature failures are caused by open circuiting of the windings, for it is comparatively rare to find a short-circuited motorcycle dynamo armature. But the field coil should be examined for signs of shorting on the through bolts and pole-piece.

After this preliminary inspection the main task comes. Clean all the components, except the commutator, in petrol: check the bearings and renew if there is any doubt about them, especially the previously mentioned porous bronze bush at the commutator end of some W.D. and post-war pattern Lucas dynamos. Make sure the main drive-end bearing is clean and packed with a high melting point grease and that the armature windings are wiped clean and dry.

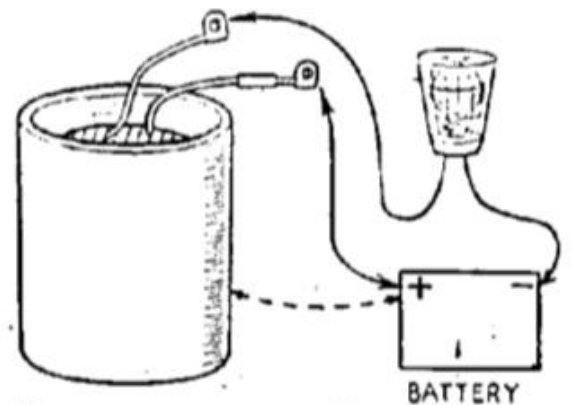


Test the field coil by connecting the test-lamp (fitted with a 6v. bulb) through the coil to a battery as shown in Fig. 2. Check the coils for an earthed, or short circuit: and also, for continuity. When used for the continuity test, the lamp should glow less brightly, due to the resistance of the field-coil winding which is then in circuit. If the glow is of normal brightness then the field coil may be shorting internally.

Renew the brushes if they are worn and check the field coil leads where they pass through the insulated brush-holder plate. The armature may look sound, but if you want to be quite sure have it tested at a garage or auto electrician. They may be only too pleased to test it on what is known as a "growler." Or you can make a rough check yourself by connecting battery positive and negative leads and test bulb to adjacent commutator bars; in this position the bulb should light up. Connected from any one bar to "earth," i.e. the armature spindle, the test-lamp should reveal no electrical flow at all.

Fig. 2 Checking the field coil for continuity and (dotted) for short circuit to earth

If the field and armature are sound then the dynamo can be assembled. Take care that no rubbing of the field poles is apparent when the through-bolts are tightened. To ensure this, keep the brushes cocked and rotate the armature slowly by hand. Any resistance to motion should be investigated. Perhaps the pole shoe is loose—it must be very tightly fitted in the yoke and the fixing screw caulked—or the armature slightly out of alignment. The end-brackets of the dynamo should be tapped gently with a wooden mallet until satisfactory armature rotation is obtained. Serious rubbing is caused by a bent armature spindle and will entail replacement of the faulty part.



When fitting bearings or bushes, it is imperative that they are pressed in evenly; this can be effectively done by using a vice and a small block of metal, as shown.

The correct connecting-up of the field leads is important. The sleeved lead goes to earth. **If these leads are reassembled in the reverse manner the dynamo will charge only when rotated in the opposite direction to that indicated by the arrow on the yoke.**

The field connections being tightened, and terminals checked, all that remains is to slip the brushes back on to the commutator and to replace the dynamo on the machine.

In general, repairs to any three-brush dynamo are more difficult. For one thing a three-brush instrument is very compact. Also the integral cut-out unit is an additional complication which increases the number of internal leads and connections to be handled. Despite this, difficulty will not arise if dismantling is done with care. Note that some of the small tag terminals are prone to break off if handled roughly. It is also advisable to mark any connections which are removed, to ensure correct replacement when re-assembling.

An example of a widely-used type of three-brush machine is the Miller DM3G or DYR dynamo, which incorporates its own cut-out, this being situated on the insulated portion of the commutator end-bracket. The cut out is protected by a metal cap through which project two terminals, marked "B" and "SH". "B" means battery or ammeter; "SH" shunt, "F" field.

The third-brush adjustment is achieved by slackening a small screw which locates the brush-box on the insulated plate, and moving the box in the direction required, afterwards tightening the screw.

When looking for a fault, make sure first that the field coil is sound; test it by disconnecting the field leads from the terminal ends and checking through, as previously described. One field lead should go to the field brush, the other to the " SH " terminal. The: field-coil resistance on a three-brush machine is usually higher than that of the two-brush type. On Miller dynamos the resistance of the field coil is just over 5 ohms which will reduce the glow of the test-lamp appreciably. The lead going to the field brush is usually sleeved; the field-terminal (" SH") lead is not sleeved.

Cut-out trouble may be evident, and it is useful to know how to fit a replacement part. After dismantling the dynamo. which is easily done by removing the through bolts and tapping out the armature from the commutator end the cut-out becomes accessible. Bend back the tabs holding the main cut-out post nut—this is connected to the main brush and becomes virtually the equivalent of "D" in the later-type dynamos. The nut is situated under the cut-out on the underside of the insulated plate. Remove the nut and " D" strap connection, then disconnect the main lead from the " B" terminal. One other lead is still *in situ*: it is the end of the cut-out shunt winding and is connected to "earth" --the carcass of the dynamo. The cut-out may now be removed and a new unit fitted, reconnecting as before.

Miller dynamos usually have two ball bearings instead of the one ball and one phosphor-bronze bush of the early Lucas type. Both bearings should be removed and packed with H M P grease. The drive-end bearing is exposed when the protective plate is removed by releasing the retaining screws. Packing the commutator end-bearing is easier, for this is situated on the armature and comes away with it.

General tests of insulation should be carried out whenever work is done on a three-brush dynamo. The positive brush-box and any parallel connections from that brush must of course be insulated from the carcass of the unit. And that applies also to the field brush connections. Conversely, the earth brush must be in contact with the carcass. It is surprising how many people forget this obvious fact.

Another, and perhaps less obvious, fault is a bad earth connection in the fine shunt winding of the cut-out. To test the shunt. connect 8 v. across the main cut-out post and the end of the shunt winding. If the points do not then close smartly adjust the 'return Spring.

One other thing which will prevent the points operating under 8v pressure is too wide an air gap between the cut-out armature and the face of the shunt core. The farther away the cut-out armature is from the actual attraction centre, the weaker the pull. Thus, if this armature is pressed nearer to the shunt core then it will work in a stronger magnetic flux and will, therefore, be more strongly attracted.

It is often these glaring defects that are overlooked. Their rectification is simple and inexpensive provided one has a modicum of elementary knowledge.

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Email Rodney.brown@escocorp.com or nvidean@outlook.com

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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

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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

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 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 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 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 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 phpeh@hotmail.com Located in Chicago IL USA.

Nuts n Bolts:

Classic Fastners, 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

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

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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

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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

Ace Classics Australia is a Torquay Vic. based Restoration business specialising only in British Classic and Vintage Motorcycles. Complementing this service, they provide in-house Vapour Blasting, Electrical Repairs and Upgrades, Magneto and Dynamo Restoration plus Servicing and Repairs to all pre-1975 British Motorcycles. They are also the Australian Distributor and Stockist for Alton Generators and Electric Starters. Phone on 0418350350; or email alan@aceclassics.com.au . Their Web page is www.aceclassics.com.au

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LUCAS STUFF – The man who bought Kevin Baker's Lucas Parts business is Danny Lee in Melbourne. Email: 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

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