The Oz Vincent Review

Edition #86, April 2021

Welcome to the latest edition of OVR. This month the front cover depicts David Bowen, who worked at Stevenage for over 10 years and for a while was an integral part of the Black Lightning development team. David, pictured with Phillip Vincent Day, passed away just a few weeks back. One of the last originals from the Vincent works, he will be missed by many.

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

Martyn

Melbourne, Australia.
Email : Ozvinreview@gmail.com

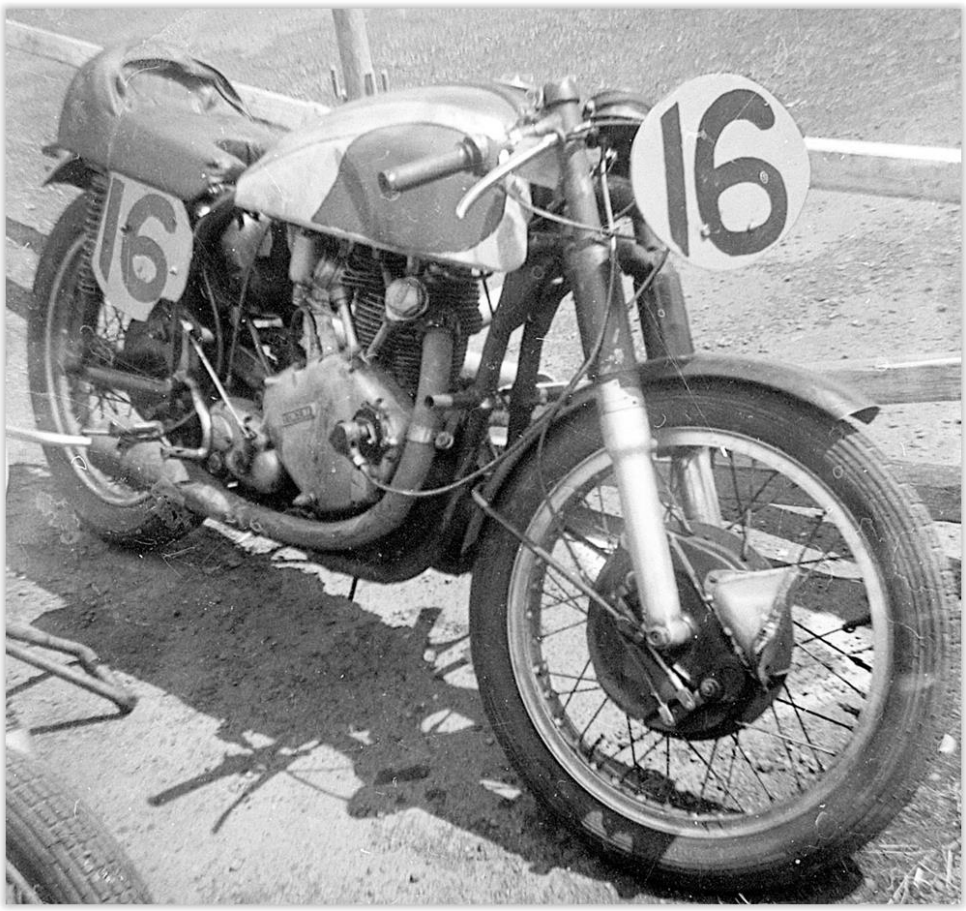
Letters to the Editor (a small sample of what I received)

Have lost many of my Oz Reviews due to a new computer. I seem to recall an article you posted about stabilizing the front mag cowl on a twin. Do you recall what issue. My cowl always has a gap and I'd like to see the story again. Great job you are doing.
Stay Safe,
Carl H, USA
Hi Carl, Take a look at OVR 57 and 58 (in the archive) regarding the fuel tank tie bolt. You can apply the same principle to the magneto cowl. Extend the thread at each end of the F122 so that when inserted into the 'eyes' on the FT163 cowl you can get a washer and nut on the inside snug up against the inner face of each 'leg' with a equal amount of thread extending outside of each leg. Now no matter how tight you make the external fixing nuts there is no risk of fracturing the legs from the FT163 cowl .

Hi Martyn,

I hope your health is OK and thanks for the latest issue. I have attached some photos that may be of interest. This is the Vincent Comet-engined Norton Featherbed built by Jack Carruthers and raced by his son Kel from around 1960-61. The shot with the bike carrying #16 is from Maurice Austin and is possibly from Ballarat in one of those years. The second is taken at Darley by Keith Ward in June 1961. The third shot of the bike with the fairing was taken at the Gnoo Blas circuit at Orange NSW in 1960. It was never a thing of beauty (like most of the bikes that Jack built) but by all accounts it was pretty quick, especially with Kel's talent in the saddle.

Best Regards, **Jim Scaysbrook OAM, Editor, Old Bike Australasia magazine**



Dear Martyn,

I have to thank you and your Oz Review because thanks to you I was able to find the parts of the G108 gear change lever set for the Black Shadow B (Queen Mathilde), this bike was found by great luck in 2003. It was the first Black Shadow sent to France in mid-1948. Thanks to Cameron Harker, those elusive parts are on their way to me.
Even though I dream to be able drive this historic Vincent on the road I try to find the maximum of original parts that it has lost during its successive 'improvements', performed during its history.

Thousand thanks to you and Cameron Harker, regards, Dominique Malcor, France

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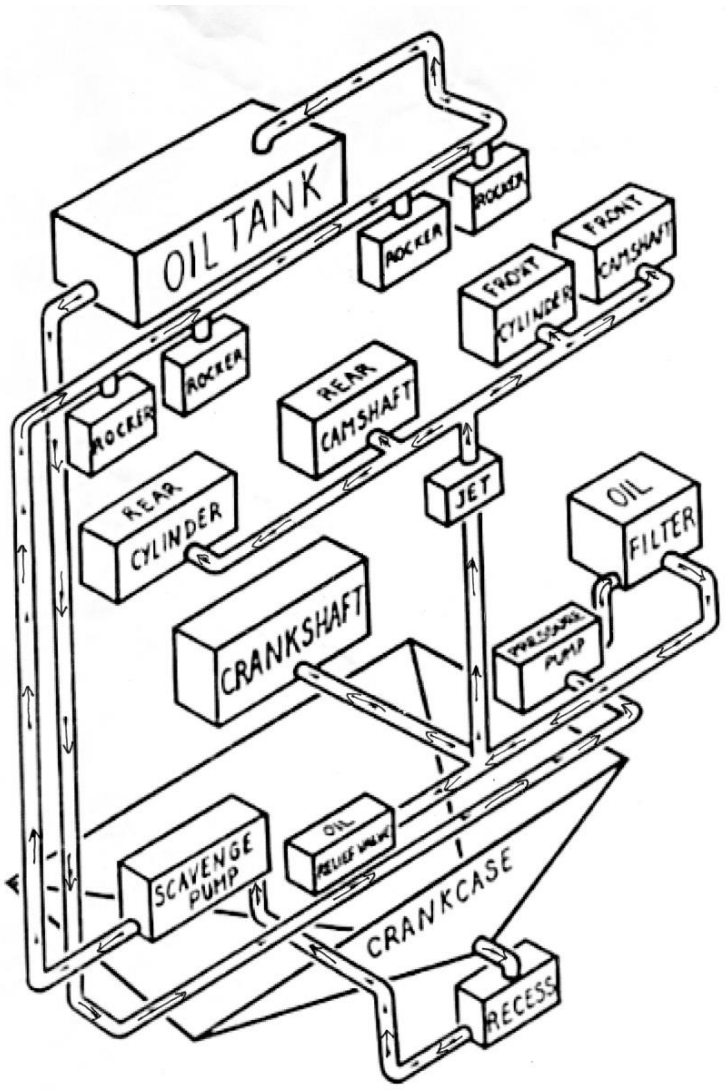
How Does A Vincents Oil Flow?

An informative OVR Contribution from Chas. Blunt, Gibraltar

On the timing-side of the Vincent engine, beneath and to the rear of the timing chest, is a large hexagon-headed brass plug which seals the pump sleeve flange down on to the crankcase. Within this sleeve there is a reciprocating steel plunger operated by a spur gear which is driven by the oil pump worm on the main shaft. The rotary movement is used to produce axial motion by means of a scroll groove formed in the plunger. This engages with a fixed, hardened steel peg let into the crankcase wall. One end of the plunger act as a feed pump, the other as a scavenge. The pump plunger (OP30) can be withdrawn with a ¼in. B.S.F. bolt after removing the scroll screw, the head of which is punch-locked. The sleeve can be extracted and renewed; sleeves and plungers are supplied only as mated pairs.

There is a banjo union in the feed line secured by a hollow bolt (A22). On either side of this banjo there should be a sealing washer (A27). Three such bolts are used in the twin-cylinder oil lines and one in the breather pipe. Drain the oil from the bottom of the feed line (the thicker one of the two) taking care that an airlock is avoided - do not tighten the bolt until fresh lubricant has been allowed to run through. Light-alloy feed bolts replace the early steel variety, so minimizing the risk of stripping threads in the crankcase. Resist any temptation to replace them with stainless steel items!



The filter element, located below the magneto, should be changed every 5,000 or 10,000 miles. Modern paper element replacements are readily available from VOC Spares Co and also V3 who advertise in MPH. Make certain that the pressurising plate seats squarely on the element. Soak a new element in engine oil; fit it, and lay the machine over to fill the chamber before the plug is replaced, so reducing to a minimum the period during which no oil is being delivered to the engine. Oil flows via the hollow feed bolt (A22/1) below the magneto into the timing cover. This bolt has a washer beneath it. It is similar to, but longer than, the other banjo bolts. Within the cover, the oil follows two routes: some passes to the big-end quill and relief valve. The quill must be kept clear and renewed when wasted. At its end is a small screw by which you may check that oil is reaching this point.

Oil Control Jets

The remainder of the oil flows vertically up the timing cover to a jet holder which meters the feed to the cylinders and camshafts. Reduction of the standard Amal jet used at this point to cut down the cylinder feed will also reduce the camshaft supply. Too big a jet will starve the big-end side. The best compromise is a 170 jet, though a persistent 'oil-burner' can be cut down as low as 140. Many riders go up to 180 or 190 during running-in to bleed a little more through the piston skirts. The holder is simply screwed into place; it is finally sealed by an acorn nut (OP40). No washer is used.

Oil eventually finds a way down into the bottom of the sump wherein is located a small compartment of which one wall forms a flywheel scraper blade. The scavenge pump keeps the compartment, and, therefore, the sump, dry. It

returns lubricant by way of the overhead rocker feeds which bleed off oil according to the size of the orifices in the feed bolts.

The oil tank has an effective capacity of five pints. On 'B' and 'C' models the level should be maintained so that the crossbar directly below the filler cap is kept covered. Returning oil issues from an orifice in the neck of the tank. A check on the flow at this point shows whether the pump is working, but it does necessarily prove that the big-ends are being supplied with sufficient oil.

Beside the return orifice is an adjusting screw, bleeding to a pipe at the rear of the tank to direct lubricant to the rear chain. The setting is determined by experiment; one turn open is a good starting basis but it may be necessary to screw it right down to reduce the flow to an acceptable level.

Because the 1,000 cc. engine is a large one, working easily, the oil may not get as hot as it will in other power units. This may mean that combustion impurities are not evaporated quickly, especially on stop-start running. In these conditions, the oil-change interval should be 1,000 miles. Otherwise an interval of 1,500 to 2,000 miles is in order. A sump drain plug, threaded ¼in. B.S.F. is located in the left engine plate.

But How Does The Oil Get Where?

There are four separate and distinct methods to which moving parts are subjected in regard to their lubrication. They are drip. pressure, splash, and mist. The drip happens when the oil return pump sporadically returns oil to the oil tank through the oil return line. The line is open to the oil tank, thereby negating any pressure development from a metering orifice, or closed end meaning that there is no pressure in the return line, only sporadic volume head pressure. which is quite minimal, as the only volume head pressure is created by the amount of oil that is in the return line which is the mere amount of oil contained in a quarter inch inside diameter line. sixteen inches in length.

The amount of oil that's allowed to drip through the overhead oiling system at 140° F. temperature, is only approximately 12 to 16 drips per minute with the restricting wire removed. The restricting wire reduces the drip flow to 8 to 12 drips per minute. There's no difference in the amount of drips from 50 wt. oil to 10/50 wt. oil, when the oils reach 140° F.. This is the only portion of the lubricating system on a Vincent that's not increased in proportion to engine rpm. The engine at idle receives the same amount of oil through the overhead rocker oiling orifices, as it does at 6,500 rpm top revs.

Other parts of the engine oiling system controlled by drip orifices are the cam timing idler gear spindle, and the oil pump worm gear. Here again, these are zero pressure lubricated. Don't confuse the parts that are oiled by splash and mist, with the parts being oiled by drip. Drip can only be created when the mist and splash finds its way to the inner surfaces of the crankcase's primary case, transmission case and push rods. When the wetted surfaces are such that the amount of oil is saturated to the extent that gravity takes over and causes the oil to run much like when shooting paint to excess, drip is created. Some surfaces extend without interruption to the sump, and so no drip formation occurs.

Splash lubrication is accomplished when a moving part passes through a reservoir of oil, or a solid stream of oil is pressure fed to a moving part. The transmission and primary case both containing an oil reservoir and moving parts, are examples of splash lubrication. No pressure involved. Machined canal passages are utilized to facilitate the lubrication of the bushings and shafting in the Vincent's use of the splash system. Bushing canals are sometimes enhanced in their lubrication ability by spiral machining which is much better than with a straight broached oil canal.

Three other engine parts are being lubricated by splash, the cam timing gears teeth, the non-thrust side of the cylinder walls, and the little end of the con rod.

Moving parts that are oiled by pressure are the thrust sides of the pistons, the crankshaft's big end, and the two camshaft spindles. (or should that be the cam bushings and cam lobes?) . The oil pressure to lubricate these parts is created by the pressure side of the oil pump. The pump being a plunger, and the cylinder feed ports' opening and closing by the piston's passing over them causes an inconsistent sporadic pressure variance. As the pressure oiling system feeds a manifold which contains five outlets, the amount of oil to each outlet isn't equal in volume. The oil to the cam bushings is less than the oil to the thrust side of the pistons. The oil to the thrust side of the pistons, in volume, is less than the big end of the crankshaft, due to the fact that the crankshaft acts as a centrifuge. increasing pressure and volume at the big end oil holes. The oil volume is actually increased by a suction action on the oil manifold, caused

by the centrifuge of the crankshaft. As crankshaft rpm increases, the volume of oil to the crankshaft increases as well. The supply to the manifold is increased with engine rpm. The volume of oil to the five manifold outlets is not proportional and constant through the rpm range.

All main bearings except one are oiled by drip or mist. All transmission gears and bushings are oiled by splash. All clutch bushings, primal/ chain, sprockets, and outer ball bearing main, are oiled by splash.

The windage of the moving parts. mainly the crankshaft and the cam gears, cause oil mist. Little. if any, mist is caused by rocker arm movement, or cam lifter movement. The mist permeates throughout the entire inside of the crankcases, cylinder head, and oil cavities. This mist covers all parts, and some are actually lubricated from the mist.

The timed breather is mist lubricated. This is why the timed breather requires more clearance than would normally be necessary, if it were pressure lubricated. The cam lobes receive very little additional lubrication from the inner sidewalls of the push rod tube. This oil is no more than a drip caused by gravity, it leaving the end of the tube, and falling on the cam lobe which is spinning, actually repels the drip. Try to oil a fan blade in motion, and you'll see the problem with trying to lubricate by drip.

The additional oiling to the cam lobes and lifters, the first being the pressure lube of the parts, and the second being due to the phenomena of wicking. The oil mist adheres to the push rod, and when saturated to a point of a gravity induced run, the oil wicks itself to the end of the cam lifter. The oil wicks through the hole in the end of the lifter, and is then guided by a groove on the lifter work side and wicks it's way to the cam where it lubricates the two moving parts. The pivots on the cam followers are lubricated by mist. All rocker pressure points are lubricated primarily by mist. The rocker arm push rod end is lubricated by mist, the lower push rod end is lubricated by gravity wicking.

The grooves in the crankshaft's feed quill assist in keeping the oil going the right direction. This action is employed as well with the groove spacer between the ball and roller main bearings on the drive side.

Oil mist increases as engine parts wear. Older engines with more hours on them will mist more than a fresh engine. Usually oil pressure reduces as an engine wears. Splash increases when viscosity decreases. Low viscosity oil produces more mist. The oil pump and it's cam drive pin are lubricated by pressure.

Gearbox Lubrication

The gearbox is lubricated by splash, the box holding two pints. This brings the level to the bottom of the flat on the dipstick. To assist in determining the quantity of fresh oil to be added when the level is so low that it does not reach the standard dipstick, a home-made slick with a longer flat should be used-provided that the level mark is made in the right place, i.e. measured from under the head of the dipstick. The drain plug of the 1,000 c.c. gearbox is fitted horizontally behind the pivot plate. It is threaded ¼in. B.S.P. The change interval is 5,000 to 10,000 miles.

Engine-grade oil is used in the primary chain case of all twin cylinder models, the case having a ¼in. B.S.F. level plug. No drain plug is fitted to the twins. The oil should be changed at least every 10,000 miles as there is a tendency for condensation to take place. This may result in sludge formation.

Speedometer Lubrication

The speedometer cable should be oiled very lightly at the lower end every 10,000 miles. Too much lubricant too high up the cable inevitably results in dirty marks appearing on the mileage recorder numerals.

The speedometer gearbox located in the front wheel can be greased with one stroke of the gun every 2,000 miles. Vigorous greasing will flood the hub and impair braking. Inside the hub are two gears. One is a simple interference fit on the hub itself and drives the spur gear attached to the gearbox. No lubrication is required for these gears.

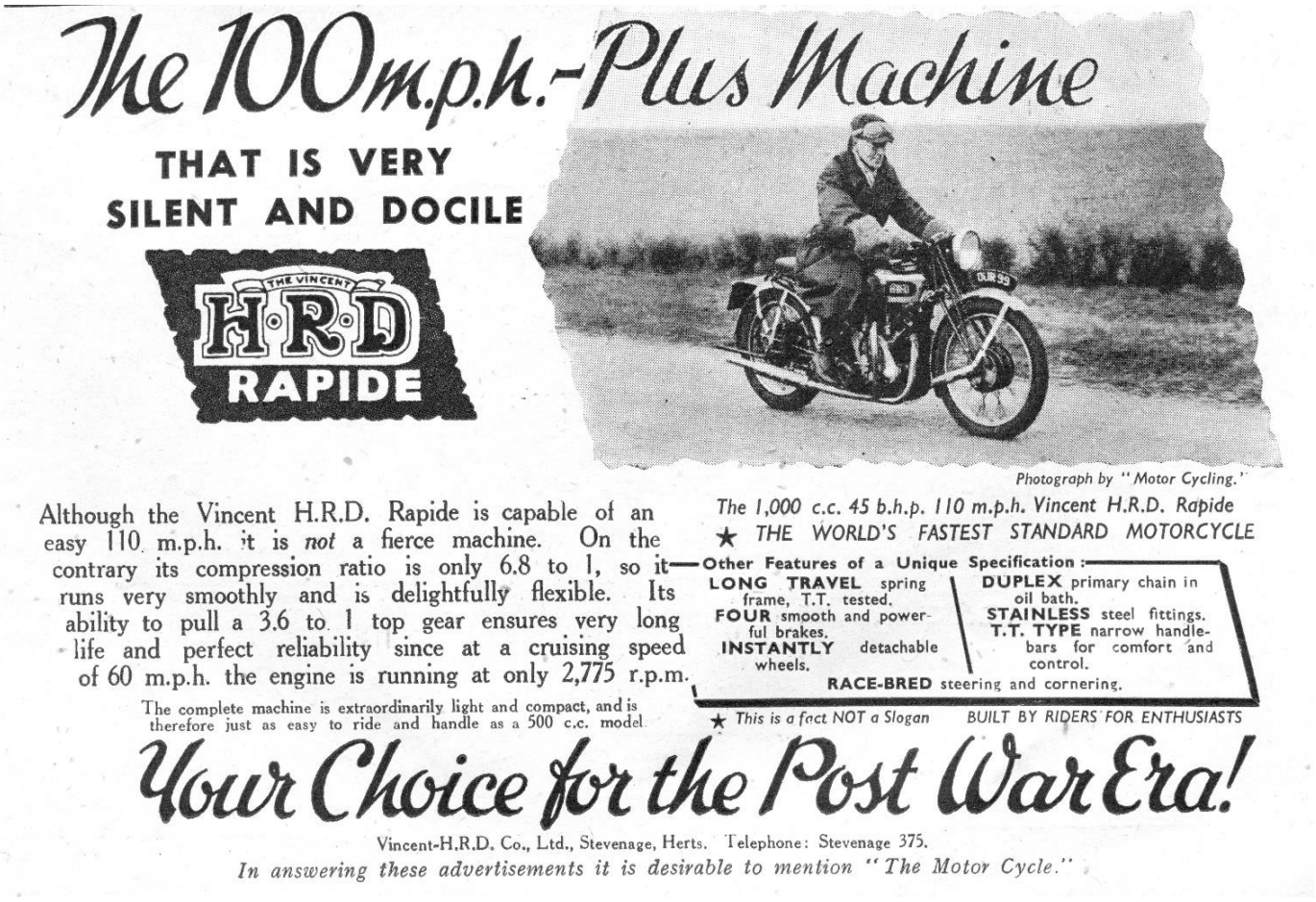
On the 'Black Shadow' a subsidiary gearbox is used on the back of the 5-in. speedo head. No oil is needed. Cable breakage can usually be attributed to an early type of this gearbox and can occur if the machine is wheeled backwards, causing the cable to run in the reverse way.

OVR Event Schedule

Date	Event	More Info
May 16	VRV/VOC Day Ride – Mount Macedon Region	Sec.vrv@gmail.com
July 18	VRV/VOC day ride to Noojee	Sec.vrv@gmail.com
Sept 12	VRV/VOC Day ride thru Gippsland	Sec.vrv@gmail.com
Sept 20-24	Australian National Vincent Rally, South Australia	vincenthrdclubsa@gmail.com
Sept 26	Bay to Birdwood Rally, South Australia	
Oct 24-26	MotoGP at Phillip Island, Victoria	
Nov 19-21	VRV/VOC Annual Tour	Sec.vrv@gmail.com
March 2022	Tour around Tasmania	www.tassietour.info

The 2021 French Rally

- **17th and 18th July 2021**
- Bourbon L'Archambault. Zip: 03160;
- Surrounded by beautiful countryside;
- Visit: https://tinyurl.com/yxtfofhx https://tinyurl.com/yynjhppm
- Traditional French entertainment;
- Magical fiesta Saturday night dinner;
- Campsite Website: https://tinyurl.com/VOCFrance21
- Rally fee approximately €63;
- Limited places available;
- See ~~page 30 for contact details.~~



Thanks to OVR reader and contributor, Carlton Palmer II, here is the backstory to Vincents marketing in the USA in 1955 and Indian Sales Corps claim that it was at "Our insistence " "they reintroduced their Series D conventional or Sports Model." . By late summer Indian was no longer importing any Series D models and declined to order any Black Lightnings simply running off inventory till the sale of their Vincent parts inventory to Harry Bellville of Marysville Ohio.

29 Worthington Street
P.O. Box 1448
Springfield, Mass.
Phone 7-4711
Cable Address: INSALCOR

The Indian Company

AMERICA'S PIONEER IN MOTORCYCLING

Dealer Release #155
May 6, 1955

Dear Mr. Dealer:

THIS IS IMPORTANT - READ IT CAREFULLY - PLEASE

There is a certain type of rider who may have owned two or three Indian Chiefs or Harley 74's and who during the years he has been riding has developed more than ordinary love for motorcycling and who takes excessive pride in his "mount". Such a man may develope a desire to experience the distinction of setting himself apart from the "mob" by owning a Vincent motorcycle. Owning a Vincent certainly puts him in a rather exclusive class.

From information just recently received from Mr. Henry Vernon, now in England, it appears certain that Vincent have satisfied themselves and Mr. Vernon, too, that they have finally found suitable fiberglass material for the cowling of their enclosed models. He (Mr. Vernon) goes on to state that he saw these new models being produced at a good production rate and that the end result is a very beautiful "cowled" Vincent motorcycle.

While Vincent was having this cowling difficulty, at our insistence, they re-introduced their Series D conventional or Sport model. This I personally feel was a good move as it appears that such a radical change in design would be rather slowly and cautiously accepted by the motorcycle buying public.

These SPORT MODEL Vincent motorcycles - "uncowled" - will have many improvements over the Series "C" models such as coil ignition, lever operated center stand, improved front and rear suspension, Monobloc carburetor, Lucas lighting equipment; ALL DESIGNED to give you and your customer the world's fastest standard motorcycle.

So, as matters now stand, we have "cowled" and "uncowled" Vincent models. You have been given prices on both types, but for the record here they are again. These prices are firm, for the time being.

	Dealer Cost	Federal Tax	Total Dealer Cost
Series "D" Rapide "Sports" model (Uncowled)	$855.25	$84.07	$ 939.32
Series "D" Black Shadow "Sports" model (Uncowled)	937.55	92.30	1029.85
Black Knight (Cowled, formerly Rapide)	967.43	95.28	1062.71
Black Prince (Cowled, formerly Black Shadow)	1038.14	102.35	1140.49

For the beginning of this year, at least, we are maintaining stocks of only the "uncowled" or Sports Rapide and Black Shadow models in our warehouses.

Dealer Release #153
May 6, 1955

If the demand warrants stocking "cowled" models we will, of course, be happy to do so.

Therefore, "cowled" Vincent models, by name, Black Prince and Black Knight, will be available on special order only.

These Vincent motorcycles ride softly, have excellent road stability and will definitely put an end to ALL ARGUMENTS ABOUT WHO BUILDS THE FASTEST STOCK MOTORCYCLES.

The uncowled Vincent models sell for approximately the same price as our competitors' big heavy-weights that the boys are still buying in quantity. Let's get some of this business in the die-hard heavy-weight class -- and THERE'S NO MORE CERTAIN WAY TO GET IT THAN TO GO AFTER IT.

Sincerely,

THE INDIAN COMPANY

A. F. West, Vice President
In Charge of Sales

AFW/sll

And here is an outstanding bit of video, again provided to OVR by Carlton Palmer II

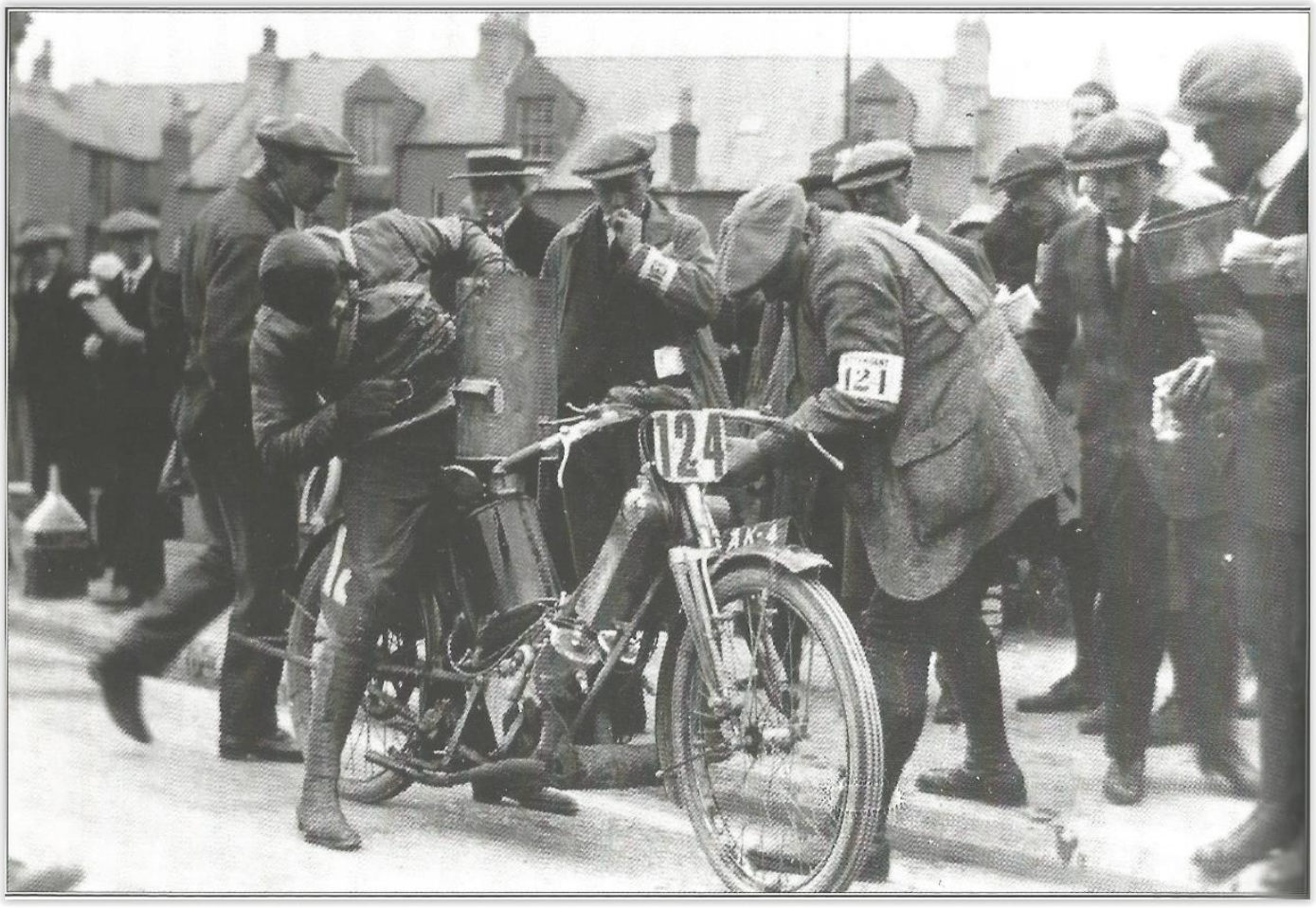
https://youtu.be/-ocIH8rBdJ8

Spirit of the TT

A superb OVR Original contribution from David Wright, IOM

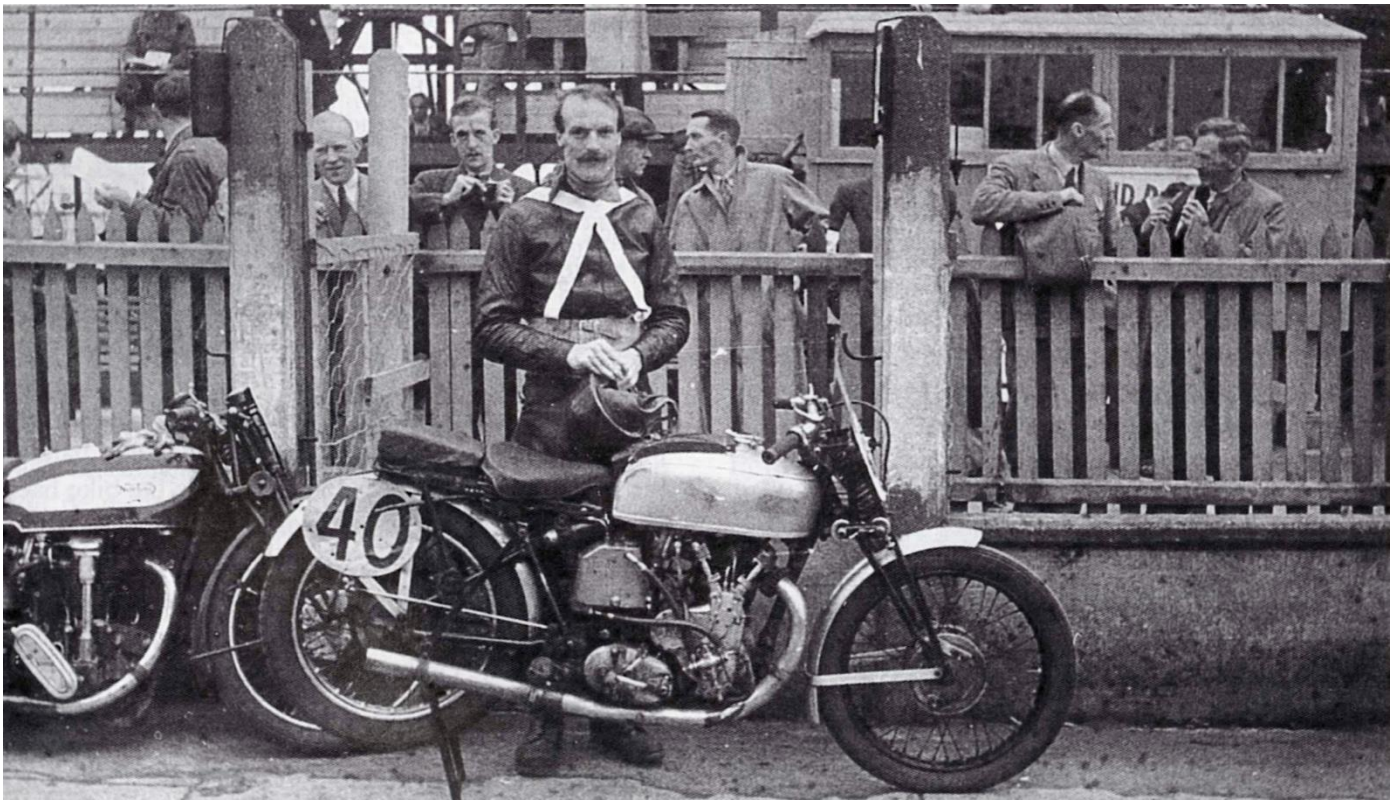
We call it petrol, the American's call it gas, but the French word for it is essence, and their's probably best captures the importance of this vital liquid to every TT rider, be it Charlie Collier winning the first TT of 1907 with a lap speed of 41.81 mph, or Peter Hickman's stunning 135 mph current lap record around the Mountain Course.

That first TT was described by the organisers as "a race for the development of the ideal touring motorcycle" and the rules were shaped to curb out and out racing bikes in favour of touring machines. One of the ways they did this was by rationing the fuel available to competitors for the 10 lap and 158 mile race run over the St John's Course. Allocations were 1 gallon for each 75 miles of race distance to multi-cylinder machines, and 1 gallon for each 90 miles to singles, thus requiring riders to tune for economy with speed. The rules also specified a compulsory rest and refuelling stop of 10 minutes at half-distance and, for good measure, riders were charged 1/3d (6p) per gallon for the petrol supplied.



Refuelling a Scott at Ramsey during the 1913 TT. Refuelling was also allowed at Douglas.

Rationing of petrol at the TT was abolished for 1909 (bringing a sizeable jump in lap speeds) and in the early 1920s many riders used alcohol-based fuels, allowing the engine to run cooler and deliver a useful boost in performance. Use of alcohol was banned at the TT after 1925 and from then until 1939 the most common fuel was a petrol/benzole mixture. Racing returned to the Island after the Second World War in 1946, but for several years the only fuel available was an inferior one known as 'Pool' petrol of a mere 72 octane rating. This had the unsought effect of reducing lap times and was notoriously inconsistent in quality – a tuner's nightmare. Octane ratings have risen down the years, but today's racers are limited to normal unleaded fuel, with power and octane boosters strictly forbidden. To ensure compliance with race regulations, the organisers have always reserved the right to take samples of competitors' fuel, before, during or after a race.



Nigel Seymour Smith in front of the Pits with his 1936 Vincent H.R.D. 'TT Replica'prior to the 1946 Senior MGP. This was the first post-war isle of Man race, but the organisers were unable to provide the customary post-mounted refuelling containers.

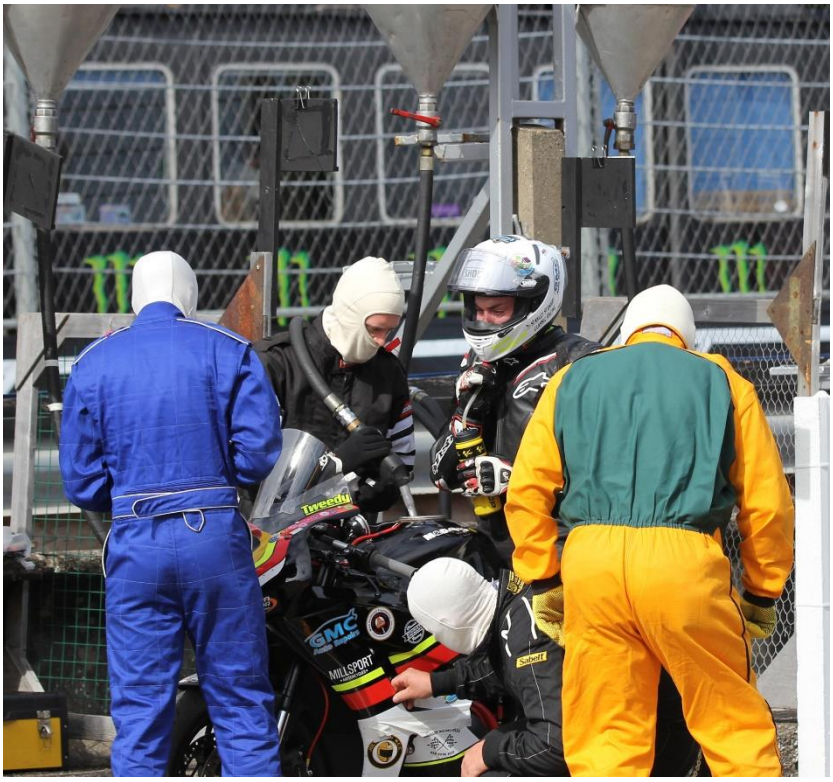
For many years companies like Shell and Esso vied to supply free fuel to competitors at the TT, for a win yielded good publicity. But times have changed and riders must now provide their own fuel, ensuring that the standard gravity refuelling container provided by the organisers above each pit contains enough for their race needs.

Given the extreme importance of petrol to TT success, why have so many riders run out of this necessary 'essence' during a race? It has always been so, for when the TT first moved to the Mountain Course in 1911, the highly experienced Charlie Collier (winner in 1907 and 1910) ran out at Ballacraine while leading. Borrowing some from spectators got him back into the race but led to his disqualification. There have been

many other such instances of races lost down the years with famous names like John Surtees, Mike Hailwood, Joey Dunlop and Ian Hutchinson, all spluttering to a halt, usually on the Mountain.

One man who had only himself to blame for losing the 1993 Junior TT through running out of fuel was star of the day, Phillip McCallen. Due to refill at the end of the second lap, he was so wrapped up with trying to pass a slower rider on the Glencrutchery Road that he steamed straight past the pits at 140 mph, leaving his crew standing there holding the refuelling nozzle, rider's drink, replacement visor, etc. Getting to just the other side of Ballaugh, his Honda coughed and he came to a standstill at Quarry Bends right in front of a film crew who, seizing the opportunity for an interview, opened with the embarrassing question "what's up Phillip?".

Race teams run consumption tests during practice in an attempt to avoid running out during a race, but with pressure to keep the time a rider is stationary during a refuelling stop to a minimum, it is easy to misjudge the refilling, think the tank is full, replace the cap and send the rider on his way. Indeed, incredible as it may seem, both Steve Hislop and Bob Jackson actually lost TT wins by a few seconds during the 1990's, due to time lost in replacing awkward tank caps after refuelling. Also, for all the consumption tests during practice, the reality of a race where a rider may be pressed to break the lap record can see consumption increase, whilst late alterations in gearing to deal with things like a change of wind direction can also play havoc with the amount used.



Darryl Tweed during a modern refuelling stop at the 2019 Manx Grand Prix. A rider is now allowed 3 Pit attendants and usually a yellow-overalled Scrutineer will be in the offing. *(photo credit to Vic Bates)*

Petrol has always played a major part in determining race results. With limits on tank sizes in most races, many of today's bikes struggle to do two laps on a tankful and it must be very disconcerting for a rider to see the petrol warning light winking during the descent of the Mountain on a lap when a pit-stop is due. As mistakes made at refuelling can so easily cost a rider the race, some teams would like to be able to actually replace the petrol tank at a pit-stop with a ready refuelled one, but current race regulations forbid this.

No one can completely eliminate heat of the moment mistakes at pit-stops, but it is in the interest of every race team and rider to put as much effort into refuelling procedures as they do into all other aspects of race preparation, for running out of fuel must be one of the worst reasons for not finishing a race.

Rollie Free: September 1948 Bonneville Salt Lake Wendover Utah

A cold morning at the Bonneville Salt Flats September 1948; Rollie Free seen here fuelling up the Vincent with 100% Methanol alcohol. This is prior to his 150mph record runs in a bathing suit and sneakers. John Edgar owner on the far left, his son assists Rollie.

Edgar had reserved the venue for his exclusive use. No waiting around in long lines in the brutal later day sunshine. Cool early morning denser air and rock-hard salt before the heat pulls the moisture up through the salt.

This was a methodically planned team effort with many testing runs at the Rosamond Dry Lakes above LA prior to departure to Bonneville. Rollie was clocking 143-144 mph at the testing so they knew they had the new record in hand barring any accidents.

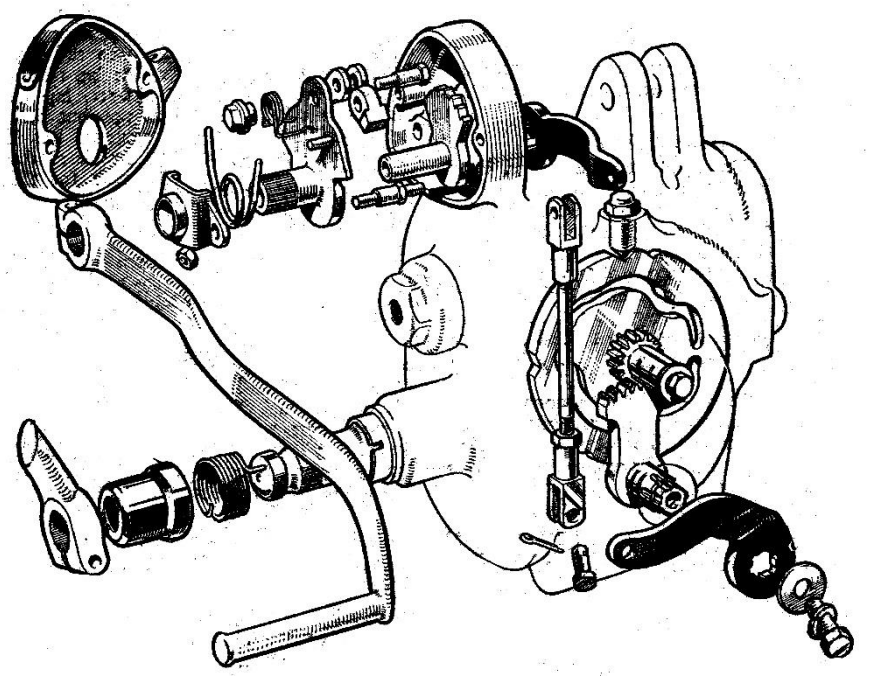
How they squeezed another 6+ mph up on the Great Salt Lake was the secret sauce. Mobil supplied a fuel technician to assist. No stone left unturned.

Note the solid rear wheel drive sprocket. Not a stock Vincent component but failure proof unlike the original spec.

Yet another outstanding OVR contribution from Carleton Palmer II

1934-47 Period Norton Gearboxes

By Dennis Hardwicke



OVER the years 1934 to 1947 inclusive, all Norton motorcycles, including W.D. types, were fitted with a foot operated, four-speed gearbox of a pattern that, in general, remained unaltered in design and overall dimensions. Certain variations were made, for example, in the size of the gearwheels to provide closer ratios for the sports mounts, but otherwise it can be said that the same box was used for the full range throughout the period mentioned above.

Sturdy in construction, the units give long, trouble-free service and, providing they are well maintained, should require only minor replacements from time to time. By virtue of the fact that all pinions are separate —the sum of the teeth of any, mating pair is always 42—any single ratio can be altered without involving the others. In addition to this feature,' ball races carry the main shaft and are used on the drive side of the-layshaft. These features have made the gearbox popular with builders of " specials " who have found the unit capable of satisfactorily transmitting the power output of tuned units far in excess of those produced by the standard engines to which they are normally coupled.

Rubber shock-absorbing blocks. are incorporated in the clutch body; these provide a shock-free primary transmission and are easy and inexpensive to replace. The eleven-plate clutch has ample capacity for its job.

Although the " internals " of the gearbox can be removed with the casing in position on the machine, a complete " strip-down." is easier if the unit is removed. Before this can be done the primary chain case and transmission will have to be taken off.

The possession of two extractors will facilitate this job and will obviate the damage that may result from the use of tyre levers or other impromptu " persuaders." The first is a normal two- or three-jawed extractor which should be used to remove the engine main shaft sprocket; this sprocket is keyed to a taper.

A second extractor is required to remove the clutch centre. It is a simple tool and consists of a length—about 1 ½ in.—of round steel bar which is threaded 1 ¼ -in. x 20 t.p.i. on its outside diameter for approximately ½ in . A hole drilled coaxially through the bar is tapped ½ in. B.S.F. to take a bolt with a similar thread approximately 4-In. long.

Before this extractor can be used, the outer half of the chain case, and the clutch pressure plate with springs, cups and screws will have to be removed. With these out of the way, the retaining nut on the end of the main shaft will have to be taken off; there is not much room and a thin-walled socket or box spanner will be needed.

On the inner diameter of the clutch centre is the thread machined to receive the extractor which must be screwed in as far as it will go. As the centre bolt is tightened, the complete clutch should withdraw. If the assembly is tight on the main shaft splines, it may be necessary to tap the head of the bolt to break the mating surfaces.

No difficulty should be experienced in removing the inner chain case half and only one further point need be watched when taking the gearbox out of the frame. Before endeavouring to withdraw the top securing bolt, do not omit to take off the adjuster plate and the adjuster bolt

If the complete gearbox is to be stripped, it is preferable to wait until the main shaft can be used as a mandrel before dissembling the clutch. Assuming that the main shaft is available, it should be firmly gripped in the vice between a pair of fibre or light-alloy vice pads and the complete clutch dropped on to the splined end.

A circlip retains the clutch plates and with this prised off the eleven plates—six steel, five with inserts—can be removed together with the sprocket. Three screws will be revealed and when these are with-drawn, the shock absorber cover plate will come off. An old steel clutch plate with a lever welded to it is of considerable assistance at this point. Slide this into position on the hub and the large rubbers can be compressed while the small rubbers are being taken out. A pointed tool may be necessary to break the bond between hub and rubber. With the small rubbers out of the way the large rubbers can easily be dealt with. If no clutch plate is available, a length of steel bar can be heated and bent to the circumference of the hub and an ear welded to the end of the curved portion. This ear must be filed to fit accurately into one of the slots.

Reverse the clutch body on the main shaft splines and undo the three nuts securing the cover plate. With these off, the rear cover plate, roller-race, back plate and body can be separated.

Three or four items may need renewing; the clutch springs, rubbers, rollers, inserts. Not so obvious are the serrations that may have been worn in the grooves of the shell attached to the sprocket. These serrations may interfere with the free movement of the clutch and must be removed by filing the edges of the grooves flat and square. A slight amount of clutch back-lash will be the only penalty paid for this renovation.

Re-assembly is a reversal of the stripping process—fit the large rubbers first—and the only point to note is that the bevelled edges of the clutch plates must be fitted towards the sprocket.

Excessive back-lash and uncertain operation of the foot change mechanism can usually be traced to wear in the linkages and pawls or to broken springs. The remedy for wear in the external links is obvious and it can only be necessary to suggest that the need for new parts can be delayed if the pin holes are reamed to a suitable oversize and new pins—also oversize —fitted.

To get at the foot change pawls, it is necessary to remove the gear pedal, indicator and the cover plate. The latter is secured by two set screws. A pair of nuts hold the return spring cover plate and with these undone, the covet plate, return spring and pawl carrier, complete with pawls and pawl return spring, will slide off the ratchet plate spindle. In this assembly are the parts most likely to need attention. The pawls are released by undoing the pawl pin nut about which the return spring is fitted.

Behind the control box a hollow set-bolt contains the plunger which engages with the ratchet plate; it is possible that the plunger spring has lost its strength and it should be renewed if it appears weak.

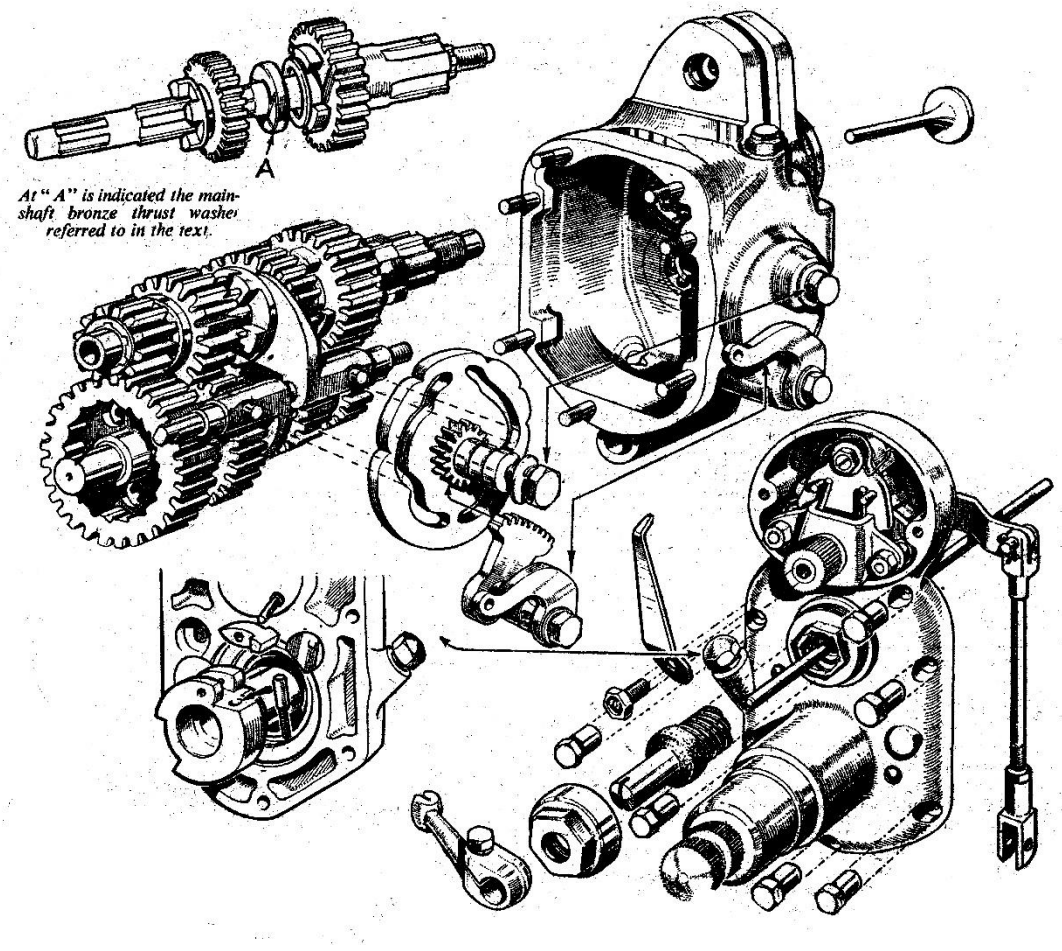
When the control box is re-assembled it should be filled with grease and it is worth noting that a felt seal is fitted between the cam plate and the rear of the housing; a new seal should be installed. A thin steel washer is interposed between the cam plate and the ratchet plate and should not be omitted. Engage bottom gear when inserting the positive stop mechanism and get the ratchet lever at the rear of the box as high as possible.

To gain access to the bearings and bushes in the gearbox it is of course necessary to remove the end cover and shafts. If the foot change mechanism has not been removed, take off the control rod between this mechanism and the selector assembly at the side of the gearbox. Take off the kick-starter by slackening the clip bolt, together with the return spring and cover. Seven nuts bold the end-cover of the gear-box in position and with these removed the cover can be withdrawn.' It may be advisable to note that the gearbox should be drained of oil before the cover is removed.

Before an attempt is made to take out the gears and the shafts a suitable length of tube should be slipped over the main shaft ' to " stand in " for the clutch hub, the nut should be re-fitted-and tightened sufficiently to hold the main shaft in the gearbox. When this is done the " internals " can be removed in the following sequence: first the low gear on the main shaft and the kick-starter pinion, then the second gear pinion with its bush. Follow by unscrewing the selector fork spindle—it has flats machined on its outer, end—and then take out the layshaft second gear together with the selector fork. The second selector fork and the 'main shaft third gear can follow, 'after which the remaining layshaft assembly will come out complete. The tubular distance piece must be taken off. Care must be exercised when

withdrawing the main shaft, for there are roller bearings within' the main shaft constant-mesh gear and these must not be misplaced.

At this stage, all that is left in the shell is the main shaft constant-mesh gear with its sleeve to which, on the outside of the gear-box, the final drive, sprocket is fitted. **When taking off the gearbox sprocket retaining nut, remember that it has a left-hand thread.** Unless a length of chain attached to a bar is available to hold the sprocket, some difficulty may be experienced in undoing this nut. An alternative method is to wrap the final drive chain twice round the sprocket and secure the free end by wiring it to the end of a bolt passed through the bottom gearbox lug. Remember the nut has to be turned **clockwise** and that the trailing end of the chain must trail in an anti-clock direction.



Bronze bushes are fitted to the main shaft second gear pinion, the main shaft constant mesh sleeve, the layshaft first gear (kick-starter) pinion and the layshaft third gear pinion. In addition, a bronze bush carries the outer end of the layshaft and is pressed into the axle of the kick-starter. The three ball races are pressed into the gearbox casing and can easily be removed if the casting is first gently warmed.

Reassembly is a reversal of the above process, but there are one or two things to watch and the first concerns two steel washers which are located one each side of the drive side main shaft bearing. Before this bearing is pressed into the gearbox, a steel washer must be put in. A bronze thrust washer and a steel retaining washer for the rollers in the main shaft constant mesh gear, are interposed between this and the third gear pinion. The bronze washer must be fitted with the oil groove facing the steel roller retaining washer.

This assembly will remain when the shafts and pinions have been taken out. If new bushes are required for the cam plate spindle and the quadrant lever spindle, first take out the indexing plunger which is located in the top of the gearbox. Both the quadrant and the cam plate can then be removed if the securing bolts are taken out.

Reassembly is not quite so straight-forward. Instal the quadrant first, not for-getting the new cork washer. Let the quadrant fall against the blind end of the gearbox casing and fit the quadrant lever in what would be its highest position. The cam plate must then be assembled and meshed so that at the extremes of the quadrant travel the end notches in the plate just pass the nose of the indexing plunger. The notches on the cam plate are, of course, the stops for the various gear locations and thus the notches at each end represent first and top gears. The shallow notch is the neutral position. Ensure that all parts move reason-ably freely when the bolts have been tightened.

This item was first published in MotorCycling July 1953

Buy, Swap n' Sell

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

WANTED

A pair of Vincent twin matched crank cases in reasonable condition. Email Richard on faulk@iinet.net.au

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

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WANTED/SWAP: RFM number R2567

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

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SELL: GREY FLASH 5 SPEED ALBION GEARBOX CLOSE RATIO CLUSTER

Albion 5 speed close ratio racing cluster from early to mid 50s racing. At the time these were the only 5 speed gear clusters available and were frequently fitted to Vincent Grey Flashes (fits straight into Albion gearbox cases). It originally came out of the REG 250cc DOHC twin racer that John Surtees won so many races on as well as setting several lap records in the mid 50s.

There is some water damage to the layshaft and layshaft 2nd & 3rd gears. Included are the unique 5 speed gear operator "stirrup" and inner ratchet (both now unobtainium) plus other gear change parts.

Pinion teeth numbers are as follows (paired numbers always add up to 48):
Main 5th - 28, 4th & 3rd (paired) – 26 & 24, 2nd – 22, 1st – 21
Lay 5th – 20, 4th – 22, 3rd – 24, 2nd – 26, 1st – 27

Item is located in Australia. Packed weight is 4.5kg. If anyone is interested I can send detailed photos. Offers around $AUD750, shipping additional.

Contact barnes2@iinet.net.au for more information

Service Providers

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

Spares:

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

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

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

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

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

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

Paul Goff, UK: A massive range of electrical spares and replacements including 6 and 12V quartz Halogen bulbs, LED lamps, solid state voltage regulators and lots lots more. Ships Worldwide. PayPal accepted. See Paul's website for more information www.norbsa02.freeuk.com

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

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 use these. Contact Paul Holdsworth of the VOC Chicago section c/o pl_holdsworth@yahoo.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

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

Restoration Services:

Steve Barnett, Australia**.** Master coachbuilder and fuel tank creater who does incrediable workmanship; located in Harcourt, Victoria. Ph +61 3 5474 2864, email steviemoto@hotmail.com

Ken Phelps, Australia – Qualified aircraft engineer and builder and daily rider of Norvins for over 30 years, who has the skill and experience to carry out overhauls, rebuilds, general repairs and maintenance to Vincent HRD motorcycles. Full machine shop facilities enabling complete engine and chassis rebuilds, Painting, wiring, polishing, aluminium welding and wheel building. Ken Phelps Phone: (61+) 0351760809 E-mail: ogrilp400@hotmail.com . Located in Traralgon, Victoria, Australia

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

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

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

General Services :

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

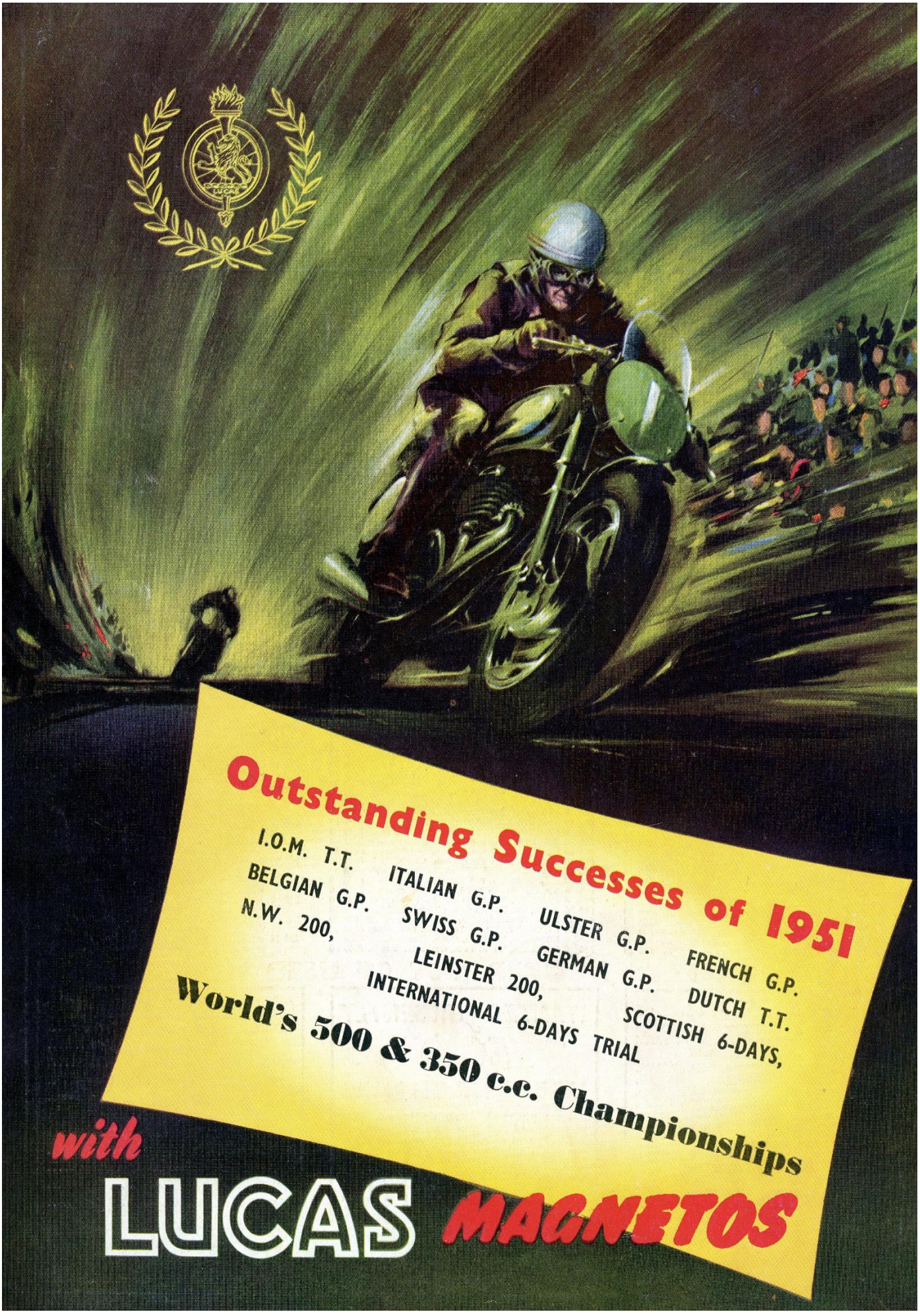
LUCAS STUFF – The man who bought Kevin Baker's Lucas Parts business is Danny Lee in Melbourne. Email: dannyleepersonal@gmail.com His phone number is 0412 327 197 Apparently Kevin has moved to Melbourne and works with Danny one day a week.

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

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

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

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