The Oz Vincent Review

Edition #33, December 2016

The Oz Vincent Review is a totally 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 OVR@optusnet.com.au

MERRY CHRISTMAS !

Welcome

Welcome to this latest edition of The Oz Vincent Review. This edition the front cover features the wonderful Cademartori Vincent Christmas Poster .

This edition is a tad "thin" and I expect next months will be as well. Why is this so? The editorial team of OVR is just me – and early Nov I underwent minor spinal surgery (T1-L5-L4 fusion) so just for now I'm not as nimble as I would like. I hope to be back to 100% real soon. Now if you were thinking of sending me material for inclusion in OVR now would be a good time to do it – a sort of Xmas present from you to the OVR readership community – plus I would appreciate the support. Go on – you know you want too.

OVR has updated it internet presence; From the new OVR web site (Click Here To Visit) you may request a free OVR subscription, visit the OVR archives (remember only updated once a year) or initiate an email to OVR

If you have received this copy of OVR indirectly from another reader, visit the OVR web site (see above) to register for your very own Free subscription.

Melbourne, Australia.
Email: OVR@optusnet.com.au

Letters To The Editor

Dear Martyn, Re OVR # 32:

1) I was interested to read the notes about fitting the Honda clutch to a Comet. However, I was disappointed to see the poor quality wire locking for the clutch centre nut - especially so when the ESA nut was done so neatly. Also with a heavily loaded installation like the ESA, wire locking will very likely fail if the splines are not in good condition.

2) In the article "Restoring Lost Power" I must query the assertion that wear of the rocker fork resulted in lost valve lift. Surely as the fork gradually wore, the clearance would be taken up with the tappet adjuster and lift would effectively have been restored, or the motor would have been hellishly noisy. Or have I missed something?

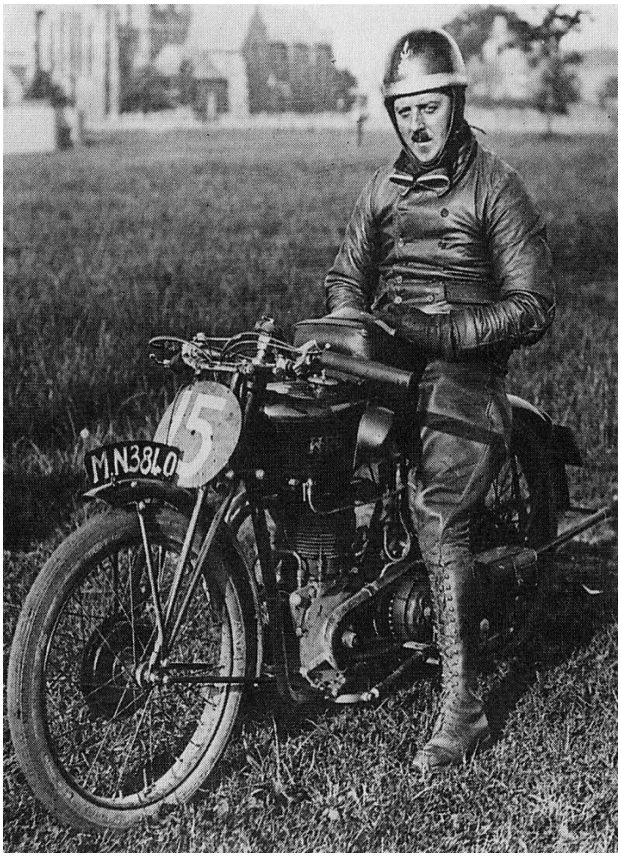
Glyn Baxter, UK

A Number to Cherish,

Another great contribution from David Wright

When Howard Davies took his brand new H.R.D. motorcycles to race at the Isle of Man Tourist Trophy meeting in 1925, riders were permitted up to two-weeks of early-morning practice, to learn their way around the famous 37¾ mile Mountain Course. However, they did not have it to themselves, for in a difficult to believe scenario, the organisers warned them: 'Competitors should note that the roads are not closed to other traffic during the times allotted to practising, and carts and other traffic may then be encountered'.

Riding at speed over roads open to other traffic must have added greatly to the excitement of those early-morning outings, particularly when trying to take the racing line. That traffic may not have been heavy, but there was sufficient for competitors to regale each other with hair-raising tales of near misses, as they warmed themselves over hot cups of cocoa in the Cadbury's Paddock refreshment tent after practice sessions. Another feature stemming from practising on open roads was that competitors' machines had to be legally registered and taxed for road use. The Isle of Man had its own system of vehicle licensing, but as visiting machines could be ridden on UK registrations, it did not present over-much of a problem.



For reasons unknown, Howard Davies chose to register his H.R.D. race bikes on the Isle of Man in 1925, rather than bring them already registered with UK numbers. Four machines, two 350cc and two 500cc, were brought to the Island for the use of Davies and employee Harry Harris. They were registered as MN 3840, MN 3841, MN 3842 and MN 3843. Not too concerned with the finer points of registration, photographs show that some of the numbers allocated to 350s were used on 500s and vice-versa.

A photograph of Howard Davies on his 1925 Senior TT winning H.R.D., with St Ninian's church in the background.

Already a TT-winner for A.J.S. in 1921, Howard Davies performances at the 1925 TT have gone down in history as some of the greatest of all time, for on his virtually un-tried J.A.P.-powered machines, he rode to second place in the 350cc Junior race and then defeated a host of established TT-winning makes - Norton, Sunbeam, A.J.S., Scott, Douglas and others - to take victory in the 'Blue Riband' 500cc Senior race.

The publication *'The Motor Cycle and Cycle Trader'* was moved to write of Davies performances at the 1925 TT: 'in the annals of the trade there has probably been nothing so romantic nor any achievement so outstanding as that which may be placed to the credit of H.R.D.'
Returning to H.R.D. Motors Limited's Wolverhampton works, there was no further use for the Manx registrations and they were allowed to lapse.

Some 75 years later, I was doing some general research on Manx registered H.R.D. and Vincent motorcycles. In one of those 'I wonder what?' moments, I enquired of the status of MN 3840, the registration used on Davies 1925 Senior TT-winner and found that it had lain dormant and not been re-issued. As a Manx resident, I knew that for a modest fee under what the Licensing Authority called its 'cherished number' scheme, MN 3840 could be mine and, very quickly, it was. Perhaps I should have put it on my Vincent Comet, but decided to use it on my car, and there it remains, serving as a daily reminder of Howard Davies superb performance in 1925.

Through the mid-1920s, the TT organisers made regular representations to the Manx authorities to have the roads of the TT course closed to ordinary traffic during practice for the races, but without success. One early morning at the 1927 TT, young Archie Birkin was riding the several bends of Rhencullen, when he met a fish lorry coming in the opposite direction. Swerving to avoid it, Archie crashed and was killed. Coming from a well-known family, his death made the pages of the national newspapers and was instrumental in persuading the authorities to close the roads during practice the following year.

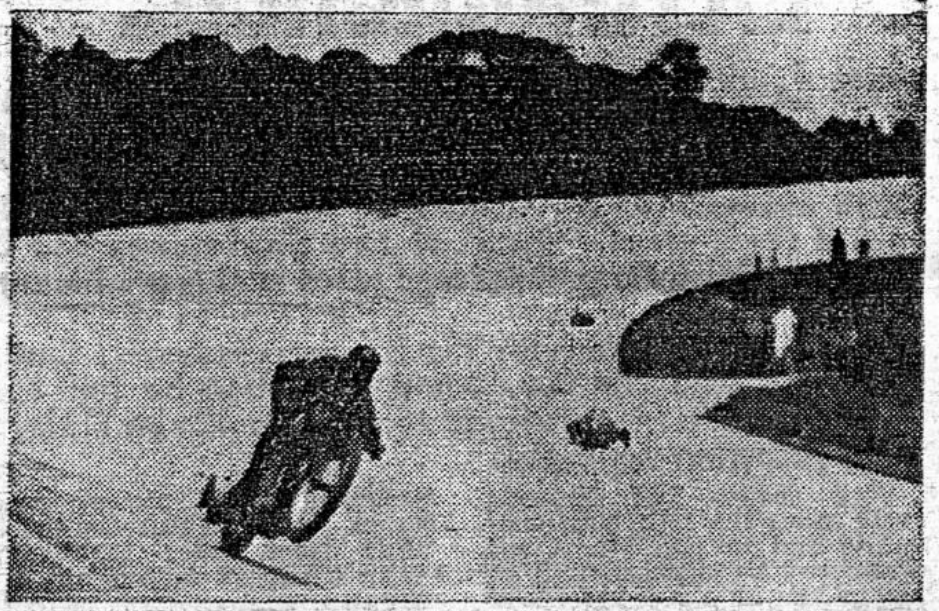
While it is not identified with any form of nameboard, many still know the bend where Archie perished as Birkin's - a fitting, but sad, testimonial to a young racer.

Request for Information; Can You Help?

Hi Martyn, Can any OVR reader identify the magazine and date of this article on DENIS MINETT? Judging from the details in the text of 'VW Australasia' etc it may well have been in an Australian magazine. Does anyone recall the series "Where are they now?" I hope for some replies! David j Jones. Email your replies to david_j_jones@zen.co.uk

Where are they now? (37)

DENIS MINETT



BROOKLANDS fans are not likely to forget the name of Denis Minett. Denis' interest in Brooklands started with an apprenticeship to Riley exponent H. G. Dobbs, and in 1936 he bought Tyrell Smith's 1932 TT Rudge, won his first Gold Star at 105.07 mph, finished third in the Hutchinson "100" and third in the Senior Mountain Championship. The following year he pushed the old Rudge around to lap at 112.75 mph, reaching nearly 120 mph on the straights.

On Francis Beart Nortons he broke the 500 and 750 cc outer circuit lap records at 116.36 and 117.19 mph and returned a standing start lap at 100.01 mph. In conjunction with Noel Pope the two-hour world record was attempted at Brooklands. In 58 minutes, Denis had covered 108 miles, which constituted a Brooklands one-hour record but, with Noel aboard, the Beart-tuned Norton broke a fork spring which put paid to the two-hour attempt.

Emigrating to Australia, Denis broke the lap record at 91 mph at Lobethal, South Australia, on Boxing Day, 1938, and finished second in the Senior event to George Hannaford, riding the ex-Standley Woods 500 cc Velocette. Then, in March, 1939, at the Corrong Desert, South Australia, Denis set up six Australian records (four of which still stand) on Bruce Rehn's 604 cc Norton.

Returning home in 1940, Denis bought a 250 cc OK Supreme on which he finished third in the first post-war road race, the 1945 Ulster "100" at Lisburn, and won the 250 cc class at Ghent in 1946. He became a founder member of the reconstituted "BMCRC," and took charge of the Black Lightning and Racing Department at Vincents until 1951 when he returned to Adelaide to develop a 125 cc rotary valve motor for Rex Tilbrook of Adelaide.

Denis is now in the development engineering department at VW Australasia, at Clayton, Victoria, where some 30,000 cars a year are produced. His main hobby is finishing his contemporary home at Heathmont, Victoria, where he lives with his attractive wife, Pam, and their two children Geoff (nine) and Sally (eight).

Event Calendar

2016	
December 4	BHMCC Motorcycle Swap Meet; @ Llanelly Public Hall, Llanelly, Victoria, Australia. Food & camping available on-site Contact Rex 0407 683 376
2017	
March 19-30	Tassie Tour 2017 (Australia), open to pre 1970 British bikes – for more info contact tassietour2017@hotmail.com . This fantastic 10 day tour is limited to just 100 bikes so if you are interested, act now. LATEST: While now fully sold out there is a waiting list so it may not be too late if you act fast.
July 2	Classic Motorcycle Event at the Tramway Museum in Derbyshire, UK . More details on their website www.tramway.co.uk
2018	
August	Australian National VOC Rally, to be held in Queensland; start your planning now.

Motorcycle Chain Wax

The only manufacturer that I have managed to find that makes *proper* Motorcycle Chain Wax is Putoline Chain Wax 1kg. Despite its name, it is the traditional motorcycle chain wax (not the wax chain lube in a spray can). Big metal tin (24cm by 7.5cm), that contains solid wax, that you heat up the tin; the wax melts and penetrates deep in to the interior of the chain.

The 1kg bit is important since you do not want wax chain lube in a spray can (which is totally different, more like chain oil!).

Chain wax still by far the best way to lubricate a non-o ring chain saving you not only a fortune in new chains and sprockets (chain and sprockets will last much, much, much, much longer), but also keeps the chain in a near new condition, so resistance does not build up anywhere near as much (= more power at back wheel). BUT Chain wax cannot be used on O, X or Z ring chains, since it would melt the rubber of the rings.

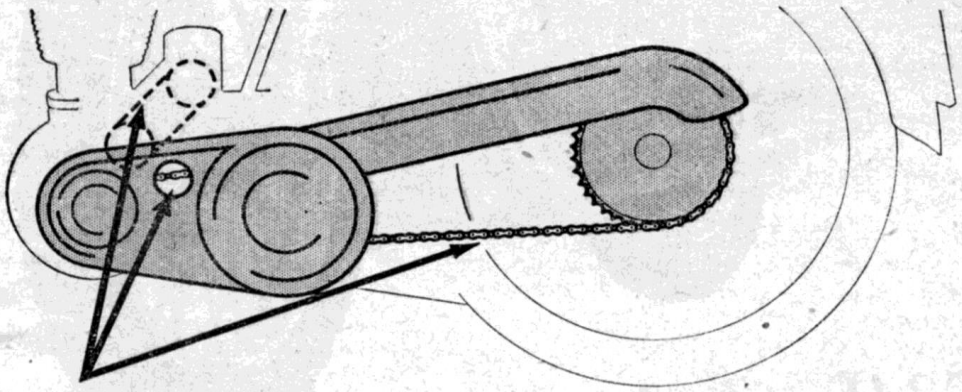
The chain wax can be used over and over again (since it uses very little wax per chain), so one tin will last a very long time, will not age and will be good for many, many years.

The chances are if you are under 50 years old, you have never heard of Motorcycle Chain Wax. If you are over 50 years old and were motorcycling in your youth, you have probably used it and know everything about it.

Remember you cannot use hot wax on any type of “sealed” chain.

In Oz, Putoline Chain Wax, 1Kg, may be obtained from Matt Jones Motorcycles, in Melton, Vic. who will ship Australia wide. Phone 03 9746 0134 or email speedway@mattjonesmotorcycles.com.au

MOTORCYCLE CHAIN MAINTENANCE— 2

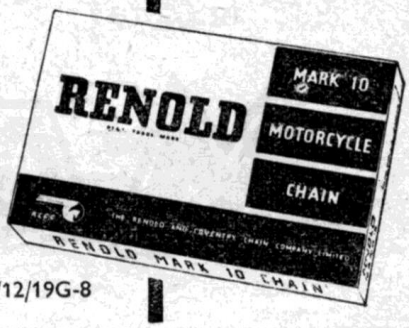


Other advertisements in this series

1. Chain lubrication
3. Wheel alignment
4. Oil feed
5. Oil level
6. Chain wear
7. Chain tools

Check Chain Adjustment

Adjustment must be correct. Test periodically for up-and-down movement. Make several tests at different positions of rotation, and do not over-tighten. On spring-frame machines check at position of suspension travel in which chain is tightest: adjust so that chain is just free at this point.
Correct amount of up-and-down movement: rear ¾ in., primary ⅜ in., magneto ¼ in.



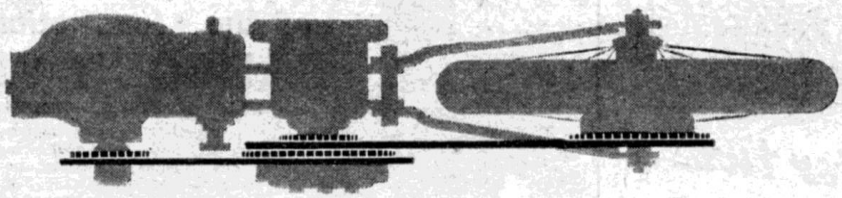
Write for copy of "Motor Cycle Chain Maintenance." Ref. 112/12/19G-8

R & C C

THE RENOLD & COVENTRY CHAIN CO LTD • MANCHESTER

A18

MOTORCYCLE CHAIN MAINTENANCE—3



Other advertisements in this series:

1. Chain lubrication
2. Chain adjustment
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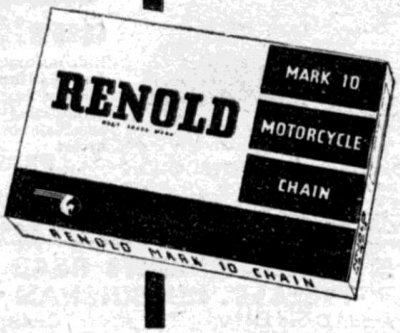
Check Wheel Alignment

Chain wheels should be accurately aligned. Mal-alignment will result in unnecessary wear of chain and wheel teeth. Both shafts and wheels should be absolutely true.
Replace excessively worn and "hooked" chain wheels—they wear out chains.



Write for copy of "Motorcycle Chain Maintenance," Ref. 112/12/19H-12

R & C C

THE RENOLD & COVENTRY CHAIN CO LTD • MANCHESTER

A1

WORKSHOP WISDOM

Kick Start Dental Work

Often one reads about the need to “file” the lead tooth on a Kick Starter quadrant to avoid the dreaded “locking” of the kick starter. Attempting to force the kick starter once locked may result in damage to the kick start shaft, the kick start quadrant, the driven pinion, the rider’s foot or the rider’s leg – and any one or any combination of damaged items is possible.

Once the kick starter becomes locked the accepted release technique is to engage a gear then rock the bike back n forth till the kick starter becomes free, then gearbox back into neutral and try the kick starter again.

Despite extensive research I was unable to find any guidance on just how the quadrant lead in tooth should be shaped to avoid lock up - until now.

Recently I purchase a NOS Burman Kick Start quadrant from Draganfly in the UK for use in the Burman box fitted to my Comet. I also purchase a second kick start quadrant – again NOS – from the VOC Spares company for the same purpose. Both are pictured and as you can see there is very little difference.

Also pictured is a close up of the lead in tooth superimposed over another quadrant clearly showing how it needs to be shaped. Note that its top surface slopes slightly towards the valley of the first “full” tooth

In order to provide the best opportunity for smooth engagement between the kick start quadrant and the kick start driven pinion it is advisable to polish the lead in tooth, especially its upper surface.

There is also real benefit to be gained if the tip of each tooth on the engaged pinion is also polished.

Series A Parts – E29 Cam Followers

As you and many others are aware that creative Australian duo of Neal Videan and Rodney Brown have made many parts (almost everything really) for their fantastic and prize winning Series A twin project and they also manufacture a very large range of parts for post war Vincents as well.

As they built the Series A Twins up they needed good quality E29 Cam Followers. Being fortunate to have the original factory drawings for these gave them head start.

With Rodney being a metallurgical engineer also helped as he had access to a range of state of the art analytical equipment that ensured they were on the correct path. This enthusiastic team soon struck a forging Die for these, reasoning that in this application a forged Cam Follower was superior to a cast Cam Follower. Neal has already done over one thousand forged post war ET29 Cam Followers and that experience also helped with the decision making process with the pre war parts.

As the Series A enthusiasts are smaller in number than the post war enthusiasts they produced only enough for their project and a small quantity of extras to make it cost effective for all concerned. So if you enjoy riding the pre-war machinery these hard to source parts – works of art really - will help keeping it that way.

Please contact either Rodney (rodneybrown58@icloud.com) or Neal (nvidean@optusnet.com.au) if you would like to purchase these newly manufactured Series A parts. Cost is AUD $125 each plus shipping

Shown two photos of their E29 Cam Followers.

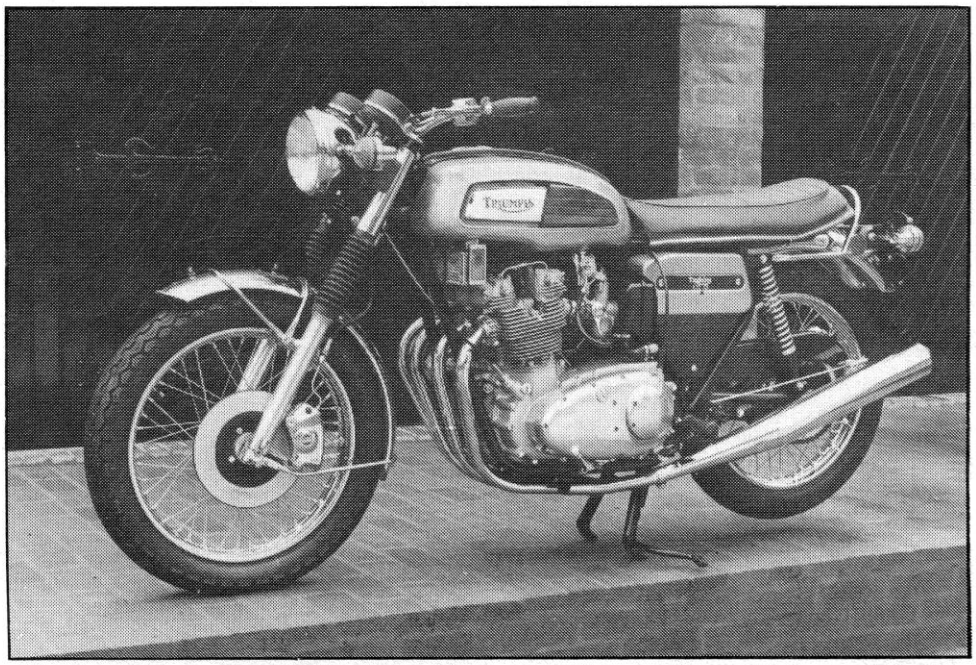
This duo also did the E30 Cam Follower Spindles as per original, and don't worry, they have assured OVR that Series A Rockers will be here in time for Christmas.

Ariels On Display

ARIELS were an Australian make! Well this collection was anyway; Using JAP motors they were made in Australia by the Ariel Cycle & Motor Works at 114 Nicholson Street, Footscray, Victoria, Australia. The factory had no connection with the English Ariel factory, the proprietor was J. Anderson and later E.C.Roberts. They were manufacturing bicycles and motorcycles from around 1910, to at least 1925. Later they made bicycles through to the 1950's

QUADRANT
Triumph's ill-fated four

another British prototype that bit the dust.



The Quadrant as restored by the National Motorcycle Museum. The machine was originally built as a feasibility study, and was not intended to enter production in this form.

LOOKING back over the last decade, one thing is clear: Britain's large-scale motorcycle industry did not perish for want of design ideas. Ten years ago, the visionary Bert Hopwood was getting ready to present to the BSA-Triumph board his remarkable plans for a modular range from a 200cc single through 400cc twins and 600cc triples to a ripsnorting one litre V5. With the right investment, this 138mph flagship could have leap-frogged the Honda fours to pip today's V-multis to the market by years.

But only weeks before that board meeting, BSA-Triumph crashed. Merged into NVT, the modular designs never saw the light of day. Down in the workshops, however, Doug Hele and his experimental team were working on a number of promising projects in the metal: a four-valve-head Commando, a 500cc twin-cam parallel twin, a Commando with a unique balancing device. And there was a stream of Trident derivatives: a single-overhead-cam version; a two-up, one-down crank for smoother running; a Trident with Isolastic engine mounting; the 900cc T180 triple; and even a four-cylinder 1,000cc derivative called logically enough, the Quadrant.

If many of these developments had inherent engineering appeal, it was the Quadrant that would have had substantial market potential. To the others' icing it would have been a completely new cake, the first one-litre British bike since the demise of the big Vincent in 1955 and the Ariel Square Four in 1960. It could have provided lively competition for the Kawasaki Z1, which had already seen off Honda's 750cc fours, and opened up the starting gates for the hyperbike stampede. With its across-the-frame configuration and 1,000 cubes the Quadrant would have been a fitting contender for the race.

But it was not the Honda and Kawasaki fours that NVT was inspired to follow. Doug Hele had come back from the Isle of Man in 1974: 'I'd seen these Yamaha fours racing so well that I got to thinking', he says. 'I'd never been happy with the exhaust note of the two-up, one-down Trident; it always sounded like a four-cylinder car engine missing on one, and frequency-wise that's just what it was. Then it dawned on me that we could put on another cylinder.'

Ex-drag racer and sprinter Norman Hyde, who then worked under Hele at Kitt's Green, Birmingham, recalls: 'When it came out in 1969, the Trident was the last word in sophistication and smoothness. But by 1974 the American dealers were griping about its vibration compared to the Jap fours.'

Hele assembled a top-secret 'inner sanctum' of workers for the Quadrant: himself, experimental shop foreman Alan Barrett and Jack Shemans, a brilliant engine specialist and the man who'd assembled the winning motors for three Daytona 200s. They first struck a blow on the Quadrant in June 1974, working in such secrecy that neither the rest of the experimental team nor management — including chairman Dennis Poore — knew the project existed.

But the machine was never a pre-production prototype and therefore never underwent performance and durability trials. The construction route was not intended to be the definitive method of volume manufacture. The Quadrant — only one was made — was simply an exercise to see if the idea of a four was feasible.

The bottom end was where work kicked off. The crankcase posed few problems; to the Trident's three-piece crankcase — a centre plus two outer covers — was added another centre to give five main bearings. Outer covers stayed the same. The crankshaft proved rather more testing. Hele took the three-piece two-up, one-down crank then being tried out on an experimental Trident and added another piece. The whole four-section flat crank was spigoted and dowelled and pressed together. In volume production, this would have been impractical — a simple

flat forging would have been the cheaper and stronger answer.

Moving upstairs, the Quadrant team attacked barrels and cylinder heads using the standard Trident pistons and con-rods with, of course, the same bore and stroke. They didn't just tack on another cylinder; instead they cut one cylinder off each of two Trident blocks and married up the pair of two-thirds sections. Again, this would have been too unwieldly and costly for mass production — blocks and heads would have been cast in one piece each. But Quadrant work was nothing more than an experiment: no parts numbers were called up, no full-scale working drawings were made.

The cut in each Trident block was made through the centre-line of one set of pushrod tunnels — from front tunnel to back. The quadrant block assembly was made up by welding all the way down the mated 'halves' of the redundant pushrod tunnels on each two-thirds section. This gave a strong 'beam' to bolt across the four-piece crankcase; Hele felt that the cases could do with a stiff block to lend them rigidity. So the Quadrant used two pushrods per tunnel — two inlet tunnels plus one welded redundant tunnel behind, two exhaust valve tunnels plus the welded-up redundant tunnel in front. (The Trident used two pushrods per tunnel on one side, one per tunnel on the other.)

To allow for distortion through welding, machining of top and bottom gasket faces was left until afterwards. Similarly, cylinder liners were not fitted and the final bore was not done until welding was complete. Exactly the same procedure was followed on cylinder heads.

When it came to rocker boxes and camshafts the Quadrant team had to get out the thinking caps. With four cylinders, only two short rocker spindles were needed; there was no need to cut and join into one long rocker box. This would have produced unacceptable heat distortion as well as the risk of flexing in an overly-long rocker spindle spanning four cylinders. But cutting meant that some closure was required, and Jack Shemans came up with a solution. He made up complete sides out of Devcon, the 'plastic' aluminium repair compound — and it worked a treat.

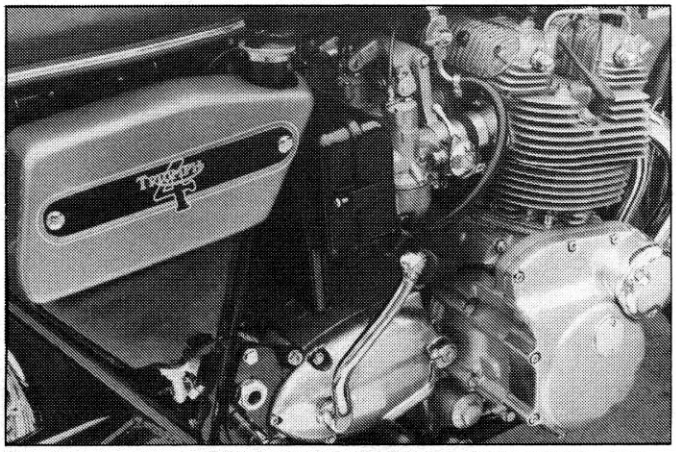
The four-lobe camshafts were simple to design, but their machining had Hele and co resorting to cloak-and-dagger stuff. If an in-house operator had machined the cams, it would have given the game away, so in the end the blanks were smuggled out to be turned up in a private machine shop.

By this stage it was clear that the Quadrant was a 'do-able' exercise. The basic engine was complete, and only the auxiliaries needed to be fitted. In went a longer oil filter and a faster oil pump — both products of other experimental work. Four carburettors were used. And on went a new ignition system — two sets of points with a two-lobe cam replacing the Trident's three sets of points with single-lobe cam. The sets of points sat at 90 degrees to each other, in effect giving a spark every 180 degrees. Two Honda twin-spark coils were utilised, giving an 'idle' spark on the induction stroke. Looking back, Hele believes the idle spark could have been the cause of the Quadrant's rough tick-over.

The exhaust system was nothing unusual. Four pipes connected up below the engine to feed one silencer on each side, and a balance pipe joined all four pipes under the motor.

The power unit was much wider than anything the experimental workshop had worked on before. It was 3⅜in, the centre distance between a pair of cylinders, wider than a Triumph Trident. To try to balance things up a little, the motor was shifted half an inch to the left in the frame, and with it the chain run. This presented little difficulty — it simply involved pushing out the rear wheel sprocket with a ½in spacer and adapting the mounting bosses on the crankcase to take longer bolts. But the Quadrant was left with a 2⅞in projection on the right-hand side — the side containing the generator. A production machine, however, would have tucked the generator up on top of the gearbox, as is the practice with the Yamaha fours of today. This would have permitted the four to be cranked over as far as the Trident.

At that time Tridents were still using a right-hand gearchange, but the Quadrant's extra width on the right forced Hele's men to reverse the gear change pedal and alter the footpegs accordingly. Clearly this would not have been acceptable in production, but as the modification to a left-hand change was then being worked out for all NVT models, presumably this hitch could have been surmounted.



The Quadrant has a 2⅞in overhang on the right-hand side, but production machines would have placed the generator on top of the gearbox to gain a central engine location and unhindered cornering clearance.

The gearbox, clutch and primary drive remain unchanged: Hele estimates that the increased torque of the four — up by a third — would have posed no problems for the clutch. The standard Trident put out 45lb-ft while racing triples produced 56lb-ft on a similar single-plate clutch with stronger springs. Besides, clutches with springs capable of handling 90bhp were available. All the cycle parts were BSA Rocket 3 in origin, including tank. The actual frame and parts used were those built around the aborted ohc Trident.

Doug Hele had drawn up a for-and-against list on the Quadrant. 'For' were increased power, smoother power delivery and transmission, cooler running, competitive racing capability in the above-750 class and a facility for emission control, using a softer engine with one carb, like a car. In the 'Against' column he noted greater manufacturing costs and a 15lb increase in weight.

The point about emissions control is important, because in the mid-seventies pollution was the buzzword of the day. Dennis Poore recognised this and was thinking, independently, about developing a four with a single carb to borrow emission control expertise from the car industry.

The Quadrant remained under wraps until October 1974. But when Hele got wind of Poore's line of thinking, he decided that the time was right to reveal what he'd been up to. 'We took Dennis Poore out onto the shop and uncovered the four-cylinder engine. He was amazed!' smiles Hele.

Poore saw the unit on 29 October, but the engine was not installed in the frame until almost a month later. On 4 January 1975, it first ran in the frame, and four days later Alan Barrett did 90 miles on the road, keeping the revs below 6,000.

'I became a convert to the four-cylinder,' remarks Hele. 'We did get the feeling of a four-cylinder 1,000cc machine, very smooth and very tractable. In top you could accelerate away from 15mph with no snatch. It was a nicer machine thn the Trident.'

Not that it was very quick — during its short road life, the Quadrant managed 119mph at MIRA's test track. For a start, the cams were of very mild profile but, more importantly, the lashed-together crank didn't inspire the Quadrant team to wind it up. Hele doubts if it would have stood up to 80bhp. The ordinary triple easily gave 60bhp, and although Team Quadrant were not able to put their machine on the dynamometer, Hele reckons it put out about 65-66bhp. But that was not the point. The fact was that the Quadrant worked.

But things were not to be. Only weeks after Poore had been thrilled by his first glimpse of the Quadrant, it was crushed beneath the uncaring heel of economic reality. With only a few hundred road miles to its credit, the Quadrant was included on a list of manufacturing options for NVT's future, but thrown out on grounds of cost.

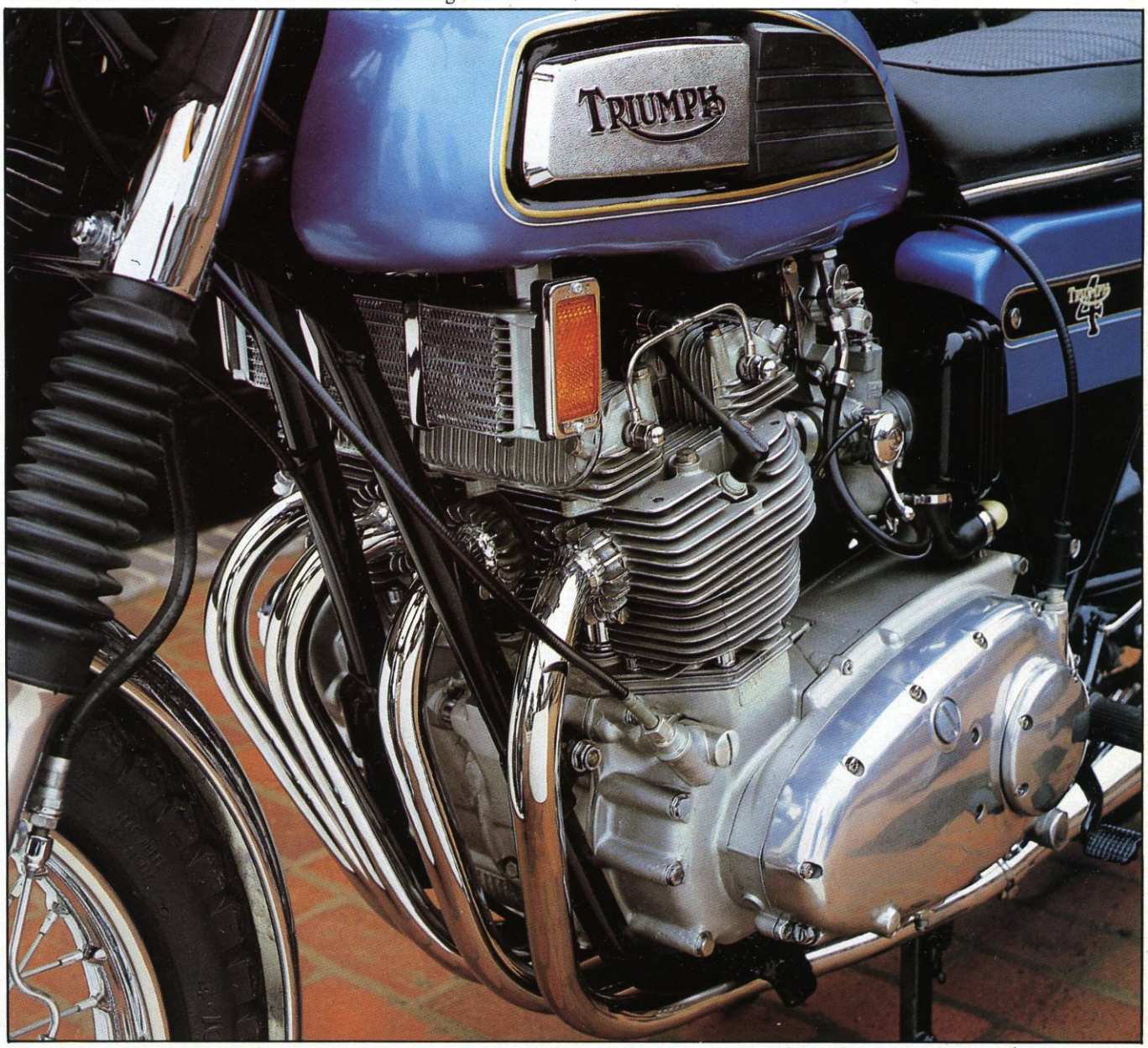
Using the planned T160 Trident as a baseline, NVT managing director Geoff Fawn put together an engine cost comparison for a single-carb Quadrant and three other engine designs, including the Cosworth 750cc water-cooled twin and the Wankel rotary. The document worked on an output of 12,500 engines a year and did not take into account royalty fees that would have to be paid on the Wankel nor all the costs associated with imported components. It was thick with assumptions and estimates, and concluded that the Quadrant engine would cost 11½ per cent more in materials and 17½ per cent more in labour to make than the T160 triple — £440 per engine against £390 for the Trident. Unbelievably, both the Cosworth and the Wankel came out cheaper to build than the Trident. They were in, and the Quadrant was out. With his back to the financial wall, Dennis Poore had to accept the report's findings.

The dossier served only to highlight how antiquated NVT's machining facilities were, for the four-cylinder should not have cost so much more to make. Significantly, the money and man-hours spent on Quadrant development were appreciably less than those allocated to many other board-approved experimental projects such as the Trident Isolastic engine mounting system.

From 20 January 1975 onwards — the date of the letter and dossier from Fawn to other directors recommending that the Quadrant should be dropped in favour of the Wankel and Cosworth — work on the four-cylinder machine dried up. A month later, it was still clocking up a few miles, but soon it was pushed into a corner to make way for electric-start Trident T160s. Busy with such projects, Hele and his team had no time to cry tears over the demise of the Quadrant. Not that they would have wallowed in sentiment anyway — they had proved what they set out to prove.

Had the manufacturing costs worked out in its favour, the Quadrant would have been the subject of a market survey. Says Hele: 'I think it could have replaced the T160, correctly done. I think it was more saleable. But it didn't fit in with plans coming along at that time.'

Certainly the Quadrant's smoothness could have supplanted the big and costly Trident engine rubber-mounting exercise. Whether it could have survived the NVT crash of late 1975 or met with great success in the showrooms we will never know. The Quadrant sat in a corner for many a long month and eventually ended up at NVT's Shenstone premises in 1976. There it gathered more dust before being offered to Doug Hele in 1978 for an outrageous £800. The bike was subsequently purchased by the National Motorcycle Museum and refurbished.



The Quadrant's cylinder block was formed from two Trident blocks, each with a cylinder removed. A production machine would have had block and head cast as one piece.

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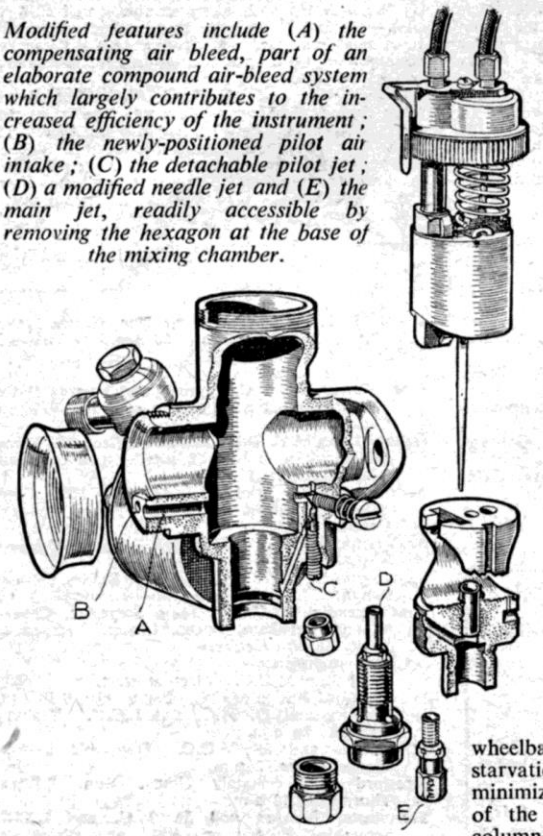
B21

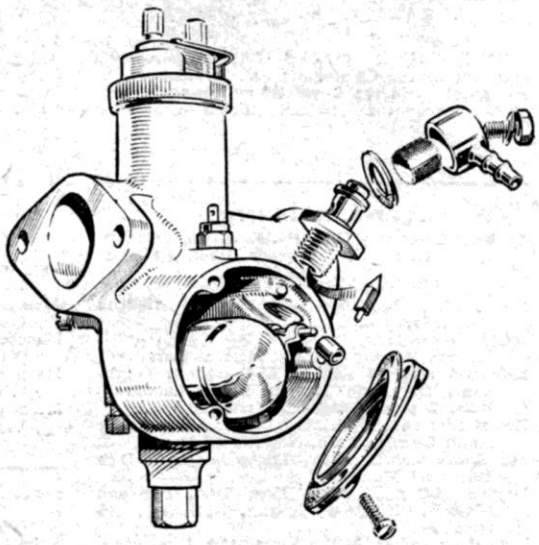
THE AMAL "MONOBLOC" CARBURETTER

Interesting New Instrument with Integral Float Chamber and Compound Air Bleed System



Modified features include (A) the compensating air bleed, part of an elaborate compound air-bleed system which largely contributes to the increased efficiency of the instrument; (B) the newly-positioned pilot air intake; (C) the detachable pilot jet; (D) a modified needle jet and (E) the main jet, readily accessible by removing the hexagon at the base of the mixing chamber.

A radical departure from long accepted design is the "built-in" float chamber, closed by a sealed side plate. In it is a hinged float and a nylon needle, the whole operation reminiscent of that of the domestic cistern ball-valve.



WHILE the principle of the Amal instrument was, and still is, a perfectly good one, the desire to improve practical aspects has occupied Amal technicians for several years past. The outcome of their research work is the production now of a sturdier, neater and altogether better carburetter, numbers of which will be seen at Earls Court.

It is opportune here to say that, for the time being Amal's entire output will go to fill these initial requirements and those of motorcycle manufacturers for the home market. When that phase is over, however, supplies of the new-type instrument will be available generally, a position which, it is hoped, will be reached by the end of 1954.

Because of its one-piece construction—a clever example of zinc-alloy die-casting—the new carburetter is known as the "Monobloc." It has no float chamber in the now accepted sense. Instead there is a drum-shaped reservoir—part of the main casting—which houses a barrel-type float designed to pivot, instead of rising and falling, and so impinge on a nylon needle controlling the inflow of fuel from an external pipe-line and banjo union. The float operates at approximately a 5 : 1 leverage and the reservoir, common to the three types of "Monobloc" carburetter available, has a capacity in excess of that of the old-type standard float chamber.

Variations of up to 20° in the angle of the carburetter when fitted do not affect the working of the float. Snags in connection with its use for downdraft carburation, therefore, are eliminated. The effect and the degree of lean of the motorcycle when cornering, likewise, is reduced, the float pivot axis being at right angles to the wheelbase. Likewise "surge," and fuel starvation, due to centrifugal action, are minimized by reason of the ideal location of the base of the main and needle jet column—right in the well of the reservoir, where, under running conditions, fuel is likely to be collected. A three-screw fixing side cover gives ready access to the reservoir and float mechanism.

Although the remainder of the carburetter is conventionally designed, there are several notable departures from previous Amal methods. First, is the facility for quickly removing the main and needle jet by unscrewing the hexagon cap and holder at the base of the mixing chamber. Compensation for rich mixture, resultant upon sudden throttle openings, is provided by small cross-bleed holes in the tall needle jet, and there is a further compensating air-bleed in the form of a drill-way, open to atmosphere at the mouth of the intake, and leading through the "Monobloc" casting. This drill-way registers with a similar hole in the jet block body, into which it continues at a downward angle, with an outlet to the space around the needle jet. This bleed aperture is the larger of the two holes seen at the face of the intake.

The smaller of the holes is the pilot intake, which carries air through both the casting and the jet block into the engine side of the body where it serves to draw up fuel via a screw-type detachable pilot jet. The final petrol/air pilot proportions are governed, as previously, by an air-adjusting screw and a small outlet on the engine side of the throttle.

While the advantages of a detachable pilot jet are obvious, it is appropriate to emphasize here that Amal Ltd., credit much of the improved performance and economy claimed for the "Monobloc" to this elaborated system of compound air bleeding, and to the use of the flat-top spray tube—the orifice protruding from the jet block into the venturi area.

Other interesting components of the new carburetter are the solidly-made jet block, assembled, as in previous patterns, via the top of the mixing chamber. The throttle slide is no longer slotted—and thereby weakened—but keyed internally for location with the jet block. The diamond-turned finish of the slide is suggestive of smooth action, long life under working conditions and freedom from distortion.

The prefixing Fig. 3, instead of 2, is used to identify generally these 1955 Amal carburetters from the earlier type for motorcycle engines which had the 275, 274, 276 and 289 code numbers. The new range of "Monobloc" carburetters consists of three types which supersede the four previously mentioned. Now, therefore, one will refer to the Amal 375 which is available in the following bore sizes: 21/32, 23/32, 25/32, 13/16, or 7/8 in. For type 376 the bores are 15/16, 1.00 or 1 1/16 in. and type 389, 1 3/32, 1⅛, 1 5/32 or 1 3/16 in.

A wide-embracing range with, above all, the great advantage of better compensation and, consequently, improved fuel consumption and the ability to give good acceleration from low speeds in top gear. This is largely due to the provision of an acceleration well which operates during the needle phase, particularly at sudden throttle movements.

While the "Monobloc" will, without a doubt, be the Company's pride of range this Show-time, the 1955 programme of accessories and parts made at the Witton, Birmingham 6, factory is as extensive as ever before, and it includes the interesting revival of a newly-designed, clean-looking twist-grip with internal helical cable control. To be seen on some of the new motorcycles at the Show in November, this device can easily be fitted by a private owner in place of the conventional twistgrip.

The ranges of T.T. and G.P. carburetters are continued, as are the many types of control cables, solderless nipples and other Amal products.

BLUEING STEEL

A "Do-it-yourself" Method Described

by JAMES FRASER

THERE may be a number of readers—particularly those who take a pride in making their own fittings and modifications—who occasionally wonder how certain colour finishes are applied to steel components. The majority of us understand the normal plating processes; and the principles of high-grade stove-enamelling. Both of these, it seems fair to say, are generally slightly out of the average enthusiast's sphere.

We have the simple business of spray cellulose—very effective, and affording a wide choice of colours. Brush enamelling can be an excellent finish, too—if one is *really* an expert with a brush!

But how many of you have appraised a steel component with that wonderful, satin-blue sheen which has actually been *bonded* into the steel. Take a high-quality shotgun barrel, for instance. Most of you must have seen arms or instruments alike thus finished, and must have wondered how you, yourself, could apply it to the surfaces of some component or other of your own manufacture.

Blued steel is, indeed, beautiful to look at—if it is not an exhaust pipe and involuntarily attained. This finish is an excellent protection from the elements. In my view it gives a component a touch of *class*, as different from chrome or any of the paint finishes.

And it isn't carried out by heating to high temperatures and plunging in hot oil; nor by heating the part in bone-meal and slices of old leather boots (as I have often heard tell by slightly inebriated armourers and similar experts). It is, quite simply, a *rusting* process! Equipment required is inexpensive and simple. A vessel (any watertight basin will do) large enough to accommodate your component which, let us say, is home-made, of steel, and is a luggage grid; a gas-ring or similar source of heat; a small supply of clean cotton wool; a supply of steel wool; a soft bronze brush; a pair of rubber gloves and a jar of blueing solution.

But the Number One essential is absolute clinical *cleanliness*!

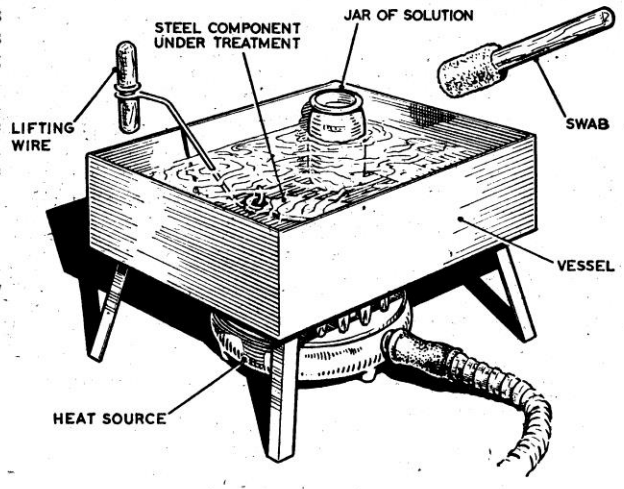
Therefore, your grid must be spotlessly clean, free from grease and any other form of adherent waste matter. Clean it by buffing, filing or by careful work with the emery cloth. Then pop it into a boiling solution of caustic soda (when any grease remaining will rise to the surface in the form of soap). You do this in an old pail, because your special basin or vessel is equally important as far as absolute cleanliness is concerned.

Now you put on those rubber gloves and *keep them on*, and see that they, too, are perfectly free of grease and dirt. By means of a clean, copper wire, or a piece of string, if you like, attached to your grid, lift it out of the cleansing bath and allow it to dry off in the atmosphere. Fill your special basin with enough water completely to cover the grid when immersed and insert a small jar of blueing solution in the water (the top of the jar must be *above* the surface, because, when you light that gas-ring underneath, you are going to heat both the water in the basin and the blueing solution in the jar at the same time). A porcelain or earthenware jar is better than a glass one. Bring the lot to the boil, and while you are doing this, once more inspect your component in order to make sure no trace of foreign waste adheres to it. I cannot stress this cleanliness factor enough.

Insert the component in the water and see that it is totally immersed. Allow it to come up to the temperature of the water, while you make a neat swab of cotton wool on a wooden handle and put it into the jar of hot solution.

Now lift out the grid. It is shining brightly and the water is quickly evaporating from it by virtue of its own heat. Immediately the grid is dry, apply the hot blueing solution by means of the swab evenly, and carefully, over every part of the surface. You will see the steel instantly turns a deep grey colour and goes dry very quickly. This is actually the rusting process taking place.

Immediately the grid is perfectly dry, take your first ball of steel wool (the finer the grade, the better) and proceed to card the darkened surface. That is to say, you rub it over lightly in order to remove the surplus crust of oxidizing rust. When this has been removed, you will find that, underneath, you have a piece of steel which is now covered with a dark, even, satisfying colour.



The apparatus necessary for the job is simple and easily constructed by the keen "Do-it-yourself" enthusiast.

Don't stand and admire your craftsmanship too long. Put the grid back in the boiling water in the basin. You will find that the dark surface gets a little darker. When the grid is once more brought to the temperature of the water, bring it out and repeat the same process. Apply solution evenly and carefully with the swab, allow to dry off and repeat your gentle carding with the steel wool (using a clean portion of the ball, of course!).

Inspect for any blank, shiny spots. If your grid was perfectly clean to begin with, there won't be any. But if you do find one or two, run over the spot carefully with a fine file or emery cloth, then replace the grid in water and rectify on your next "pass." Pass is the term used in the gun trade for each of these processes of swabbing and carding. Three passes ought to be enough to achieve the required effect. If the colour is not deep enough for your personal taste, well, make another couple of passes and then you'll have it to your liking.

At first you may think this is an awful lot of trouble; this messing about with rubber gloves (you haven't taken them off yet, remember!). But there is no trouble really; not when you stand back and look at the lovely finish.

When you feel the colour is deep enough after your last pass with the carding wool, immerse the grid for the last time and let it have a good boiling. Then take it out and run over it with the bronze brush (which must also be spotlessly clean) and, when this has been done, inspect again and apply a neutralizer. Between your last inspection and the application of the neutralizer, which may be any good-quality thin oil, you take off those rubber gloves, light your first longed-for cigarette and give yourself a little pat on the back.

You will—or ought to—have a luggage grid which has the same finish as a high-grade gun or instrument. Leave it coated with oil overnight and in the morning it is ready for fitting. And what a proud little enthusiast you are by this time!

Blueing solutions vary. The following are the most satisfactory to my mind, and may be made up by any chemist for about 1s. 6d. a time:—

1. **Solution for mild steel.**

Sodium nitrate	.. ..	¼ oz.
Potassium nitrate	..	¼ oz.
Mercury bichloride	..	½ oz.
Potassium chlorate	..	½ oz.
Distilled water	.. ..	10 oz.
Spirits of nitre	.. ..	½ oz.

Label: "Blueing Solution, Hot, POISON," and keep in a brown bottle.

2. **Solution for hard or tempered steels.**

Sodium nitrate	.. ..	110 grains.
Potassium nitrate	..	100 grains.
Mercury bichloride	..	200 grains.
Potassium chlorate	..	200 grains.
Distilled water	.. ..	9 oz.
Spirits of nitre	.. ..	1 oz.
Nitric acid	.. ..	½ oz.

Label as former solution.

In each case the first four ingredients must be *mixed* together and not ground with a pestle in a mortar, because if this is done there will be a big bang and lots of coloured lights, but no doubt the pharmacist will have already learned his lesson in his university laboratory!

Note: Spirit of Nitre is a mixture of 2% Ethyl Nitrite to 98% Ethanol, by volume; however it may be replaced by straight ethyl alcohol

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Bo Hoo .. The store is empty!

"Well, what's it to be—riding too fast or flying too low?"

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. Service providers are not charged a fee for this service nor can service providers themselves request that their information be included, though they may request that an entry refering to them be removed.

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@optusnet.com.au

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, Comet 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

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

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

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, Amal and control cable parts, plus an extensive range of Vincent parts. Ships worldwide. More info at the website www.unionjack.com.au

Pablo's Motorcycle Tyres, Australia: Road, Classic, Road Racing, Classic Racing, Enduro, Motocross, Speedway, Trials and Slicks....and if they haven't got it - they'll get it! For more info see their web site www.pablos.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

Nuts n Bolts:

Acme Stainless Steel, UK: All stainless steel fasteners are machined to original samples supplied by customers and clubs over the years to enable us to keep your machine looking authentic and rust free! Ships Worldwide. More info at their web site www.acmestainless.co.uk

Classic Fastners, Australia: Classic Fasteners is a family owned business, established in 1988. 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

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

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@aceclassiscs.com.au . Their Web page is www.aceclassics.com.au

General Services :

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

Rays Custom Spray Painting, Australia: Ray Drever is skilled in paining bike tanks and frames. Also a craftsman in flame work and airbrushing. Located near Geelong; contact Ray on 03 5251 2458 or 0402 988 284.

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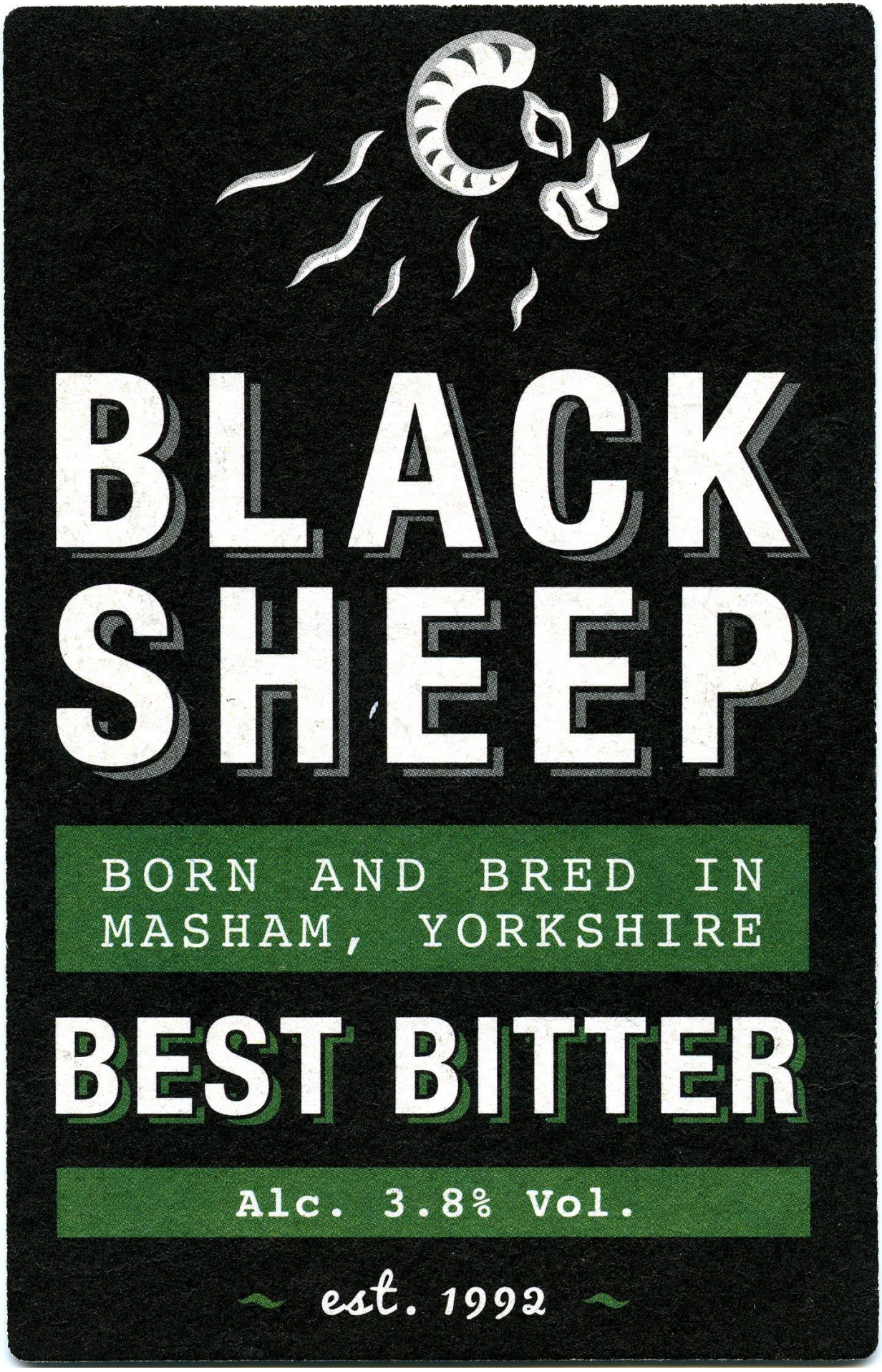

You see him here, you see him there; *You find the the Baaaa.....st'd everywhere!*