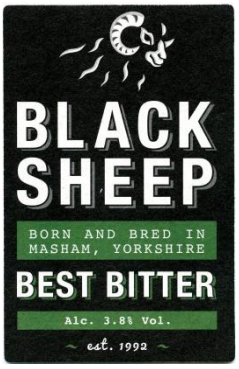
The Oz Vincent Review

Edition # 70, January 2020

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

Welcome



Welcome to the latest edition of OVR with the front cover featuring our very own 'house brand' of New Year Cheer. If you wish to have a tipple of Black Sheep Ale best contact the Black Sheep Brewery, Masham, Yorkshire who can tell you who your local purveyor is.

What has this to do with Vincents? Not much - The OVR editor is also known as the Black Sheep.

You can learn more about Black Sheep Brewing by clicking here.

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Martyn

Melbourne, Australia.
Email: ozvinreview@gmail.com

Letters to the Editor

Hi Martyn,

Thank you for another interesting issue of OVR.

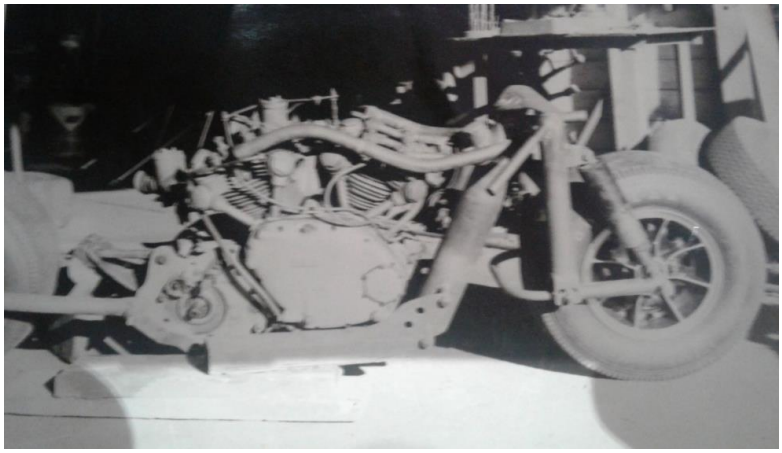
The un-named individual on the right of the picture on p24 (December OVR) with Messrs Bruce/Irving and their speed machine, is one of yours. Arthur Simcock was an Australian who rode the Isle of Man TT from 1927-1933 and then, along with Vic Brittain, was part of the two-man Travelling Marshal team, when the service was first used on the Mountain Course in 1935.

Best wishes,

David , UK

Hi Martyn,

I was chatting to you at the Queensland Rally and you asked for any interesting items for OVR. I have come into possession of a number of photos from Brian Payne (Payney) of Tranzac Exhaust and racing sidecar fame.



Brian seldom made drawings of anything he built but he did photograph most things, and I now have a collection of many of his sidecar projects he built or worked on. I worked next door to Payney for a few years and spent many hours picking his brain and learning by watching.

After Payney passed over a while back his daughter passed on his photos to Bert Skuse and then Bert passed them on to our road racing club and I now have digital copies of them.

The pics attached are of probably the last kneeler Sandy McCrae had, I don't know if Payney built it or was just working on it. The writing on the back of the pics is Payney's hand writing.

I trust you can use them even though the quality is poor.

Kind regards, Damian Deane, Queensland Section

Four Score Years and Ten :

Dispatched from the Stevenage works December 23, 1929, this Vincent H.R.D. Rapid celebrates its 90th Birthday

In ten years we will be able to celebrate the centenary of the first motorcycle that was produced at the Vincent-HRD works at Stevenage. I am the custodian of one of the bikes manufactured during that first year of operations at the works.

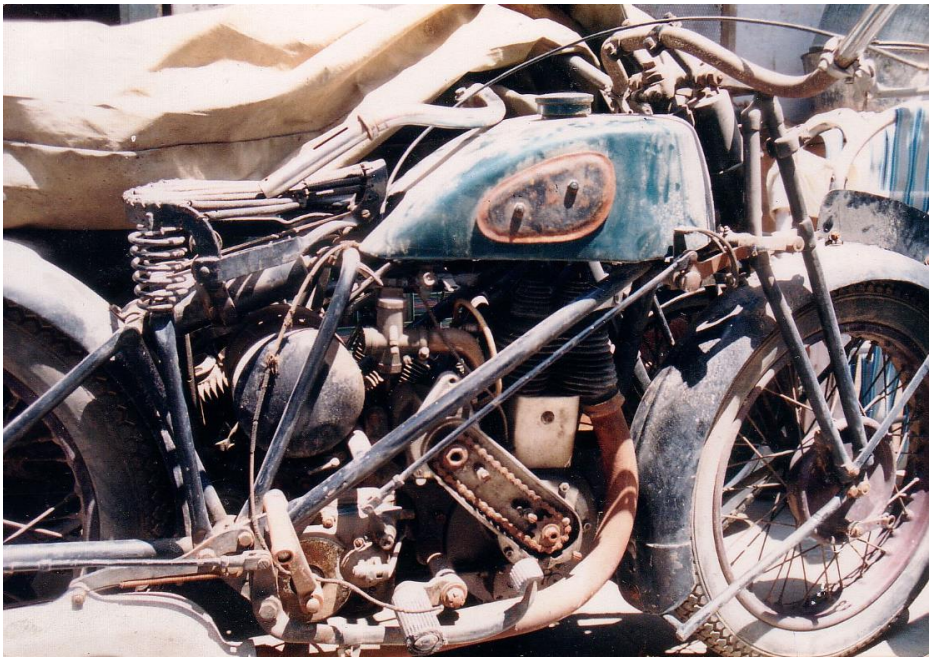
During the 1999 Vincent Owners Club (VOC) International Rally in the UK, I was given a list of the bikes that were produced by Phillip Vincent during that first year of operation, and if the list is correct, only 25 bikes were made.

Although this was the beginning of the great depression, the British motorcycle manufacturers continued to produce reasonable numbers of motorcycles, and according to a web source more than 200 companies produced 147,000 motorcycles in 1929. Despite the level of motorcycle sales in 1929, it is surprising that Phillip Vincent was able to keep his business afloat with such low production levels.

Another one of the bikes that was produced by Phillip Vincent during that first year was the bike that Scotsman Jack Gill rode around the world, and on which the Australian automotive engineer Phil Irving was the pillion passenger for the section of the trip from Australia back to England via New Zealand and Canada. How different the history of the Vincent marque would have been if Phil Irving had not accepted Jack Gill's invitation to ride pillion from Australia back to the British Isles.

The Gill bike would have been very similar to mine except that his had a 600cc SV JAP motor, whereas mine has the 500cc version of the same motor. Gill's bike was fitted with a Noxall sidecar for carrying fuel and oil, spare parts, spare tyres and tubes, a tool kit, food and camping gear.

My bike was not quite a barn find as it was sitting in a courtyard exposed to the elements but under a cover.



As found it was in poor condition, but was largely complete. The petrol tank had been repainted green. The bike has a JAP 500cc SV engine, a three-speed hand shift Burman gearbox, and Druid front forks.

When found the only markings to identify it as a Vincent was the company logo cast into the fishtail exhaust muffler. I have never seen another one of these mufflers. Surprisingly, in addition to the original muffler, it still had what appeared to be the original fuel and oil tank caps, and the JAP embossed cover for the magneto drive. The front forks appeared to have been repaired at some stage and it looked like the bike had been involved in a front-ender.

Soon after finding the bike I joined the UK-based Vincent Owners Club, which holds some of the original factory records.

The club was able to provide me with a copy of the original factory "Works Order Form" for my bike. The form was number 169 and dated 16th November 1929, and I was pleasantly surprised to discover that the engine, frame and gearbox numbers all matched. The bike had been supplied without a speedometer, lighting set or horn. The order form also contained lots of other interesting information, including the name of the person who assembled the bike, who did the road test, what the weather conditions were, the name of the person who passed the bike (presumably their quality control check), and who crated it for shipment. The signature at the bottom of the form was non-other

than the boss, Mr. P.C. Vincent.

The order form also indicated that the bike was a special that had been prepared for the 1929 Olympia Motorcycle Show, and had been specifically ordered with a 56-tooth rear sprocket. The 56-tooth sprocket is still on the bike but makes it very under geared for our 21st century hard surfaced roads.

Along the way I obtained a copy of the 1930 Vincent sales catalogue. This catalogue was probably produced to coincide with the November 1929 Olympia Motorcycle Show, and it introduced their 1930 range of motorcycles. The catalogue ran to 15 pages with quite a lot of technical information, particularly about the spring frame, but also with details about the five models in their range, a page of press reviews, and two pages of testimonials.

H·R·D

3½ h.p. Touring Model

500 c.c. Side Valve Touring Machine

THIS delightful model has been introduced to meet the demand for a reliable machine capable of high average speeds, and one which requires the minimum amount of attention. This machine has the luxurious comfort which a spring frame alone can give, and the perfect steering and excellent road-holding qualities will be a revelation even to the experienced rider.

It is the ideal mount for those who require a machine for business purposes where comfort and safety are essential. Finished all black and lined gold, and relieved with chromium plated bright parts, the machine is particularly handsome in appearance and most serviceable.

Those who require a greater reserve of power can have a 600 c.c. Engine fitted, at slight extra cost, the maximum speed in both cases being 65 to 70 m.p.h.

Price of 500 c.c. Touring Model £69

Price of 600 c.c. Touring Model £72

Jaeger Speedometer - - £2 12 6
M.L. Maglita Electric Lighting Set £5 10 0

CODEWORD: 500 c.c. Model: RAPID; WITH MAGLITA, RAPIDLITE.
600 c.c. Model: GLIDE; „ „ GLIDELITE.

7

There was even a picture of Jack Gill in the Balkans on his round-the-world tour. The catalogue referred to my bike as the 3½ hp Touring Model, the cost was £69 (the speedometer cost an extra £2 12 6, and the lighting set was an extra £5 10 0), and the maximum speed was claimed to be 65 to 70 mph. Interestingly the model code in the catalogue is Rapid (and not Rapide).

I have had the opportunity to take the bike to VOC international rallies in New Zealand, Australia and the UK (Isle of Man, Scotland and England).

Left is Jim at the IOM in 1999 astride his bike .

My rally highlight would have to be the closed road lap on the Isle of Man with over 200 other Vincents. For me personally it was a pretty slow lap and it took a tad over 50 minutes to cover the 38 miles, with a forced stop near Sulby to clear a fuel blockage.

While on the Isle of Man the VOC held a sprint meet at Ramsey, and while there a stranger commented on the sorry state of the externally mounted Best and Lloyd oil pump on my bike. It had been damaged and quickly repaired during the New Zealand VOC rally in 1995, but it was still working. The stranger said he had a spare pump that was in good condition, and that if I followed him to his nearby home he would give it to me.

This very generous fellow lived near Sulby. He was a former motorcycle racer who had raced an outfit with the now deceased VOC member Dennis (Desmo Den) Porter, who I also met at his home. This generous fellow would not accept any payment for the oil pump, but he suggested that I should ride to Fairy Bridge and offer my thanks to the fairies. This oil pump is still doing great service.

Another rally highlight was to ride the bike back to the site of the old Vincent factory at Stevenage. My works order form indicated that a Mr. J. Watson crated the bike for shipment in December 1929. He would never have imagined in his wildest dreams that 70 years later that the bike would be ridden back into Stevenage in a convoy of Vincent motorcycles, led by the Mayor of Stevenage (as a passenger in a sidecar).

I have owned this bike for about a third of its 90 years, and it is my hope that is in ten years time when it reaches its centenary, that it and me are still good enough to do a lap around the block. Happy ninetieth birthday Vinnie.

Jim Alexander, Australia

Still Thinking About the 2020 Australian National Vincent Rally**?**

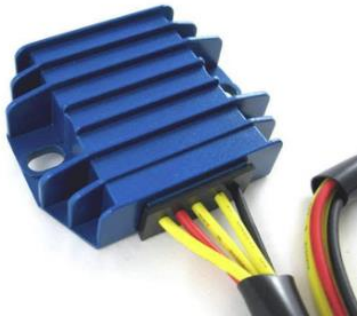
Well you had better get a move on as the word is accommodation space at the rally site – the McLaren Vale Motel & Apartments – is it's all gone!.

Don't say you were not warned! There is alternative accommodation in the area, but with record numbers registering for the event, they are filling fast as well. So stop thinking and Act Now.

An OVR Product Review

MOSFET 20 Amp Alternator Voltage Rectifier Regulator

These new voltage regulators from Australian company Tri-Spark use the latest MOSFET technology for cool running reliability, a generational improvement over the previous generation of solid state regulators that waste power and run hot.



The generous 20 amp rating of the new unit exceeds the requirements of 10 amp, 16 amp and 14.5 amp two and three wire stators commonly used on classic British bikes.

Heavier wire connections are extra long (60 cm) in two sleeves so you can route the wires and connect them exactly as you wish.

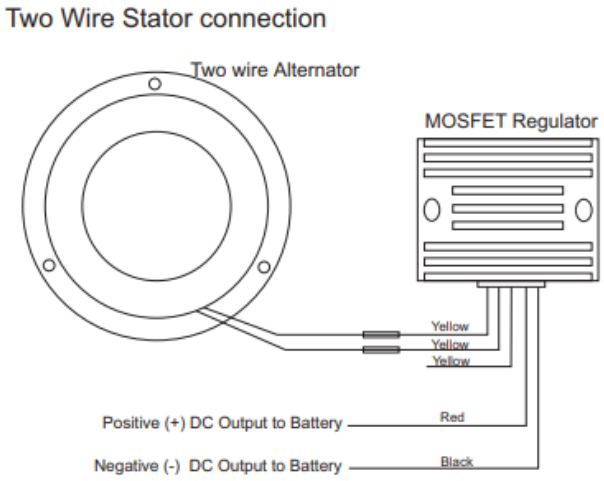
Smaller in size that of older designs makes fitting possible in tight locations such as under the seat or battery tray or behind side panels plus the custom MOSFET technology employed means cool running so you can hide it away!

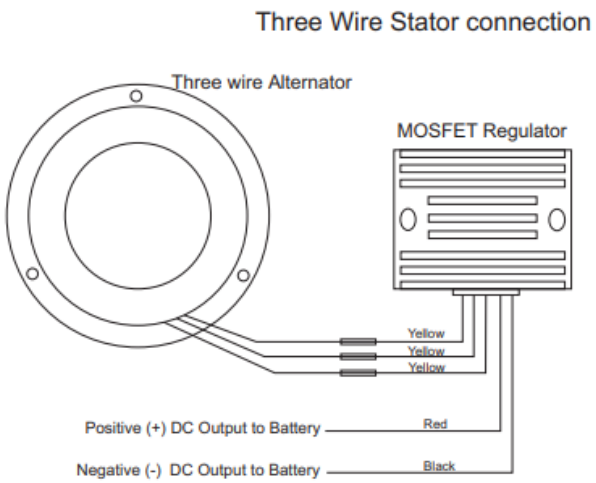
Suitable for use with 2 and 3 wire stators (single and three phase). 10 amp single phase, 16 amp single phase and 14.5 amp three phase.

These stators are commonly know as RM21, RM23 and RM24 used on Triumph, Norton, BSA , Enfield, Matchless, Vincent (Alton) etc...

This new Tri-Spark MOSFET unit is claimed to be compatible with any single or three phase permanent magnet 12 volt alternator up to 20 amps. Of course it is totally compatible with all Tri-spark ignition systems

Simple installation





Suggested retail price is A$ 165 and the unit is covered by 2 year warranty.

Compact size of is 80 x 67 x 20 mm. with Mounting hole centres 64mm.

Email sales@trispark.com.au for more information

OVR Event Schedule, updated 28 December 2019

Date	*Details*	*More Info?*
2020	**2020**	
Jan 24-26	International Island Classic meeting at Philip Island	http://islandclassic.com.au/island-classic-home
Feb 23	VRV Gathering and General Meeting at the Weir Estate.	Events.vrv@gmail.com
Feb 28 – March 1	2020 Superbike World Championships @ Philip Island	http://worldsbk.com.au/world-sbk-home
March 7-8	Classic Club Pub Run - Jamieson	www.cmccv.org.au
March 10-19	Tassie Tour 2020, held in association with the British Motorcycle Club of Tasmania.	www.tassietour.info
March 21	Maffra-Sale Club's Harry Parsons Memorial Ride. Click for info about Harry	Click for ride info
March 27-29	Classic Club Inverloch Rally	www.cmccv.org.au
March 28-April 4	Australian Historic Motoring Federation 2020 National Motoring Tour, Albury NSW & Wodonga Vic.	www.ahmf.org.au
March 29	Federation Picnic at Scoresby, Victoria	Sec.vrv@gmail.com
March 29	VRV Gathering and General Meeting at the Allan's Frankston compound.	Events.vrv@gmail.com
April 3-5	VRV Autumn Colours Experience – Western Victoria	Events.vrv@gmail.com
April 10-12	Broadford Bike Bonanza	
April 24 - 26	All British Rally @ Newstead, Victoria	https://www.trybooking.com/book/event?eid=554070&
May 29-31	Historic Winton	https://wintonraceway.com.au/event/historic-winton-2/
June 5-7	VRV Winter Jaunt Event	Events.vrv@gmail.com
Sept 21-25	Australian National Vincent Rally, McLaren Vale, South Australia.!	lesbeyer@internode.on.net
Sept 27	Bay to Birdwood Rally, South Australia	http://baytobirdwood.com.au/
Oct 2-4	VRV Bit on the Side Adventure	Events.vrv@gmail.com
Oct 2-4	Australian Superbike Championship @ Philip Island	https://www.asbk.com.au/
Oct 17-18	Cooma-Monaro Girder Fork Rally	www.coomacarclub.com.au
Oct 23-25	MotoGP @ Philip Island	
Nov 22-24	VRV Annual Riders Dinner	Events.vrv@gmail.com
Dec 6	VRV Xmas Gathering	Events.vrv@gmail.com
2021	**2021**	
March 21-28	Classic Club Victoria 50th Anniversary Rally	www.cmccv.org.au
April 9-11	VRV Autumn Colours Event	
June 4-6	VRV Winter Jaunt Event	
Oct 29-31	VRV Bit On The Side Event	
Nov 26-28	VRV Vincent Riders Dinner	

Dec 5	VRV Xmas Gathering
2022	**2022**
April 1-3	VRV Autumn Colours Event
June 3-5	VRV Winter Jaunt Event
Oct 7-9	VRV Bit On The Side Event
Oct 20-25	VOC 2022 Australian National Rally, hosted by Vincent Riders Victoria
Oct 25-28	VOC 2022 Post Rally Multi-Day run hosted by VRV
Nov 25-27	VRV Vincent Riders Dinner
Dec 4	VRV Xmas Gathering

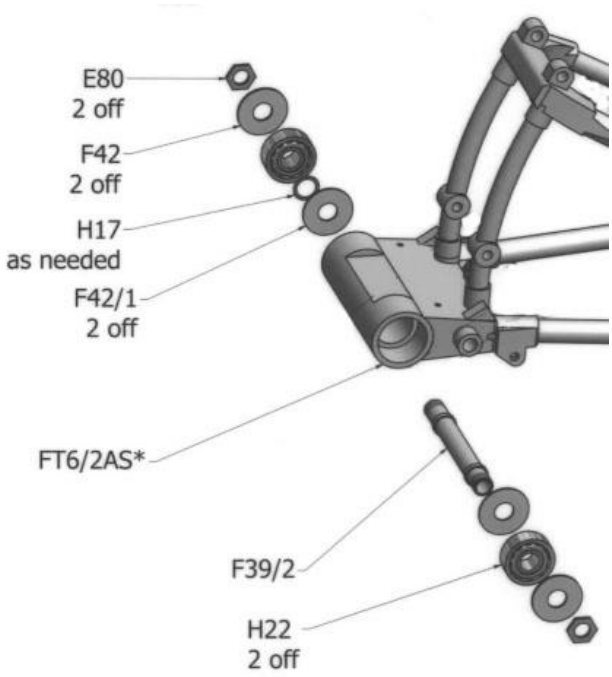
Photos of a Vincent Riders Victoria gathering in Feb of 2019 – Great day, Great weather, Great chums with a Great lunch at the Tullarook Hotel.

Fitting Vincent RFM Bearings

An OVR Original

The Vincent RFM rear frame member, or rear swing arm, has it's pluses and minuses in its design; super robust in areas, and quite skimpy in strength as to its job in others. The robust casting that retains the pivot tapered roller bearings of the RFM was built to withstand the design with the drive's counter sprocket to the rear wheel being outboard of the RFM pivot bearing. Additional strength has been designed into the RFM in this area to cope with the cross stress applied each and every time the bike is accelerated or decelerated.

In addition to the robust casting, the maximum allowable distance between the bearings is a design plus. Also on the plus side is the large size of the bearings themselves because the larger the size of the bearing, the more area of contact of the rollers and races. This ensures extreme long life of the assembly. However, as with any adjustable clearance type bearing, proper adjustment and maintenance is critical to its long life. An overly tight bearing can cause galling of the rollers and races. A loose bearing can cause a hammering action and brinelling of the bearing races and rollers as well.



Parts involved that constitute the swing arm pivot are: F39/2 the pivot bearing hollow spindle, two axle nuts – E80 , two tapered roller bearings (inners and outer races) H22, two F42/1 inner dust washer shields, two F42 outer dust washer shields, axle nut shims and outer race bearing shims (as needed), and main pivot shaft FT33.

If you have the RFM apart to replace bearings it's worth cleaning out, as best you can the inside of the main casting. In my case it was full of rusty flakes and debris. I used a Dremel with flexible attachment and steel wire brush. I then washed it out with solvent and sprayed the inside with proprietary rust preventer before assembly, allowing 24 hours for it to 'dry'.

The first assembly step is to check the fit of both inner pivot bearing dust seals F42/1, they should be a loose fit inside the main casting. If you have obtained replacements they are frequently a few thou oversize – this is in accordance with the original works drawings that also bears the cryptic notation "To be dressed on assembly", in other words, the OD is intended to be linished or filed down till they are a snug but loose fit.

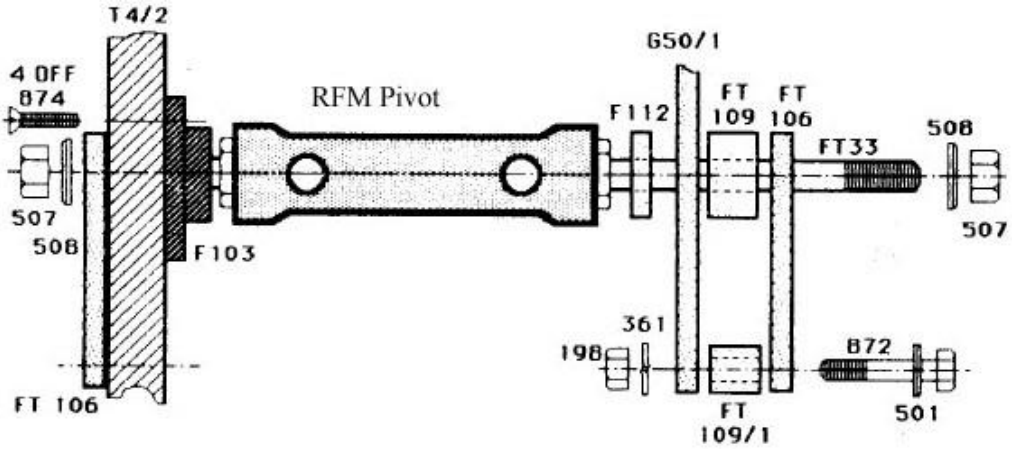
Cool the bearings outer races in a freezer overnight, and having well warmed the main casting with a hot air gun put the inner dust seals in place then install the outer races being sure to put them in the right way around – that's with the larger diameter facing outwards to accept the tapered rollers.

It's essential to determine whether the length of the hollow pivot bearing shaft F39/2 is shorter than the distance between the inner shaft boss casting of the left hand crankcase and the G50 plate, or in the case of a Comet or Meteor the distance between the Pivot Bearing Spacer F103 and the Frame pivot distance piece F112. The hollow shaft F39/2 **must** have clearance, but not more than 1/8".

Next, a dry fit of the assembly is required. This assembly is to determine the positioning of the tapered outer bearing races in the RFM casting bores. You must ensure that in the final assembly of all the parts, when the half nuts are pulled up tight, that there <u>is absolutely no protrusion</u> of the hollow axle end beyond the outer surface of the hollow axle hex nut. Also, the

shimming of the outer race and the shimming of the inner bearing roller race assembly must provide a slight pre-load of the tapered bearings. The slight pre-load is important in order to eliminate the possibility of any side to side movement of the RFM. One other important reason to pre-load the bearing is to eliminate a loose bearing, which can cause a hammering effect between the inner hollow axle and the pivot point support shaft. In extreme cases, over a long period, the pivot point support shaft becomes ruined due to a hammer swedging effect, which puts a taper on the shaft. When this occurs, it's impossible to eliminate the side to side movement. Readjusting the bearings doesn't resolve the problem, only the replacement of the pivot point shaft, and in extreme cases, the renewal of the hollow axle does.

The next thing to deal with is a dry fit, marrying the swing arm to the engine. For a Comet or Meteor the RFM needs a ring F112 between the F80 nut on the right of the pivot and plate G50/1. This piece is listed but not drawn in the Parts List. Between the plate G50/1 and the right hand pillion footrest plate there should be two distance pieces, FT109 and FT109/1. Note that the Comet uses two pillion footrest plates FT106.



First, see if the swing arm will slide into place with clearance into position. If there is clearance, shim as necessary to achieve zero clearance. The shims are placed between the dust shield and the bearing. **Do not shim between the hollow axle nut and the dust washer.** This is to ensure that when tightening the pivot shaft nuts, zero distortion is maintained. If more than one shim is required, divide the shims and install on both sides of the swing arm boss. This may help a bit with rear chain alignment.

If the swing arm doesn't fit, for a twin material is best removed from the inner surface of the engine boss; For a single material can be removed from the Distance Piece, F112. Removal of the material is also best kept to a absolute minimum. In any case **do not remove material from the hollow axle nuts**. If it is required to remove material from the case boss for fitting, any shimming should be totally done between the boss and the left hand hollow axle nut.

Now disassemble all taking very careful note of what shims you used and their placement.

It's time to lubricate. Select high temperature and water resistant wheel bearing grease. I like to heat a small container of the selected grease then sit the bearings in the hot grease for a few minutes so it really gets into all the inside spaces in the bearings. Remove them and allow to cool. Now install the bearings using the shims you identified earlier during the dry fit, install the pivot bearing dust washers (outer) F42 and then the nuts. Grease the bearings with a grease gun until grease is visible around the entire circumference of the outer washer dust seal. This provides a grease seal between the weather and grit and the roller bearings.

You can now put the RFM into its final position. Periodically the rear swing arm bearings should be greased via the installed nipples and then wiped clean to maintain the grease seal during operation.

All that remains is to come up with a story to explain to your partner the mess of muck and grease on your clothing.

While on the topic of RFM's here is the original patent for the Vincent RFM, issued to Philip Conrad Vincent, May 15, 1928.

PATENT SPECIFICATION

290,375

Application Date: Feb. 15, 1927. No. 4247/27.

Complete Left: Nov. 15, 1927.

Complete Accepted: May 15, 1928.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Spring Frames for the Driving Wheels of Cycles, Motor Cycles, and the like Vehicles.

I, PHILIP CONRAD VINCENT, a British subject, of High House, Horndon on Hill, Essex, do hereby declare the nature of this invention to be as follows:—

This invention is for improvements in or relating to spring frames for the driving wheels of cycles, motor cycles and the like vehicles of the type wherein the driving wheel is mounted at the rear angle of a triangulated structure which is pivoted near its lower front angle to the main frame and is spring-connected thereto at or in proximity to its apex.

In known constructions of this type, the structure aforesaid has comprised two separable triangular frames which are connected together side by side and on opposite sides of the rear wheel by means of bolts and distance pieces, or similar devices. Frequently also, each frame has been formed of articulated members. These known constructions are lacking in rigidity and lateral stability, and one object of the present invention is to provide a construction in which these disadvantages are obviated.

According to the invention there is provided a frame structure of the type referred to for cycles, motor cycles or the like vehicles and comprising two triangular frames arranged side by side and on opposite sides of the plane of the wheel characterised in that said frames are rigidly secured together at or near their lower front angles by a single brace and/or at or near their apices by a similar brace, to which brace or braces the appurtenant members of the triangular frames are rigidly secured.

Preferably each of the braces comprises lugs to which the appurtenant members (e.g. tubes) of the triangular frames are welded, brazed or similarly connected.

In a convenient construction the brace which unites the triangular frames at their lower front angles is integral with a bearing member adapted to be mounted (for example pivotally) on a spindle carried by the main frame of the vehicle or by an element secured thereto.

If desired, the bearing member aforesaid may be split and provided with means (for example bolts) whereby it can be clamped to a spindle which is pivotally mounted in the main frame of the vehicle or in an element carried thereby.

In a specific embodiment of this invention which will now be described by way of example as applied to a motor bicycle, there is provided a frame structure comprising two triangular frames formed of tubes and arranged side by side with the rear wheel between them. Each of these frames comprises a chain stay and a back stay which are brazed into lugs on a forked end plate in which the axle of the rear wheel is mounted in the well-known manner, and a front stay. The triangular frames are rigidly connected together at their apices at the required distance apart by a single casting or forging which has at each end a pair of lugs to which said front and back stays are brazed. At the lower front angle the triangular frames are also rigidly connected together by another forging or casting likewise provided with two pairs of lugs to which are brazed the lower and front ends of the front stays and the chain stays respectively. This latter forging or casting also comprises a bearing member which constitutes the main bearing for a spindle by which the triangular frame structure is pivotally connected to the main frame of the bicycle.

The said main bearing may be pivotally mounted on the spindle aforesaid, or the bearing may be split and clamped by means of bolts to the spindle in which case said spindle is pivotally mounted in the main frame or in a part connected thereto. In either case the rear member of the main frame may be forked and provided with lugs to receive said spindle, or the spindle may be mounted at each end in a plate or other member attached to the engine casing or to the gear box, or in any other convenient manner.

It will be seen that by the means described above a rigid triangular frame structure is provided, and that the main bearing for the pivot is an integral part of said structure. Moreover, the construction enables said main bearing to be of substantial length—approximately equal to the distance apart of the trian-

gular frames—so that the structure is well supported at its pivotal point.

The invention is not restricted to the precise constructional details described, and any convenient spring suspension may be employed. If desired, the forging or casting which unites the triangular frames at their apices may be adapted to receive a pair of links to which the spring device can be attached.

Dated this 15th day of February, 1927.
BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London,
E.C. 1,
Chartered Patent Agents.

COMPLETE SPECIFICATION.

Improvements in or relating to Spring Frames for the Driving Wheels of Cycles, Motor Cycles, and the like Vehicles.

I, PHILIP CONRAD VINCENT, a British subject, of High House, Horndon on Hill, Essex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention is for improvements in or relating to spring frames for the driving wheels of cycles, motor cycles and the like vehicles of the type wherein the wheel is mounted at one of the angles of a triangulated structure, which structure is pivoted at or near another angle to the main frame of the vehicle, and is spring-connected at or in proximity to its third angle to the said main frame. In this Specification, the term "like vehicles" is intended to include light four-wheel vehicles, for example, light cycle cars, as it will be apparent from the following description that the frame-structure constituting the present invention can be applied to the main frames of such vehicles without any alteration in the frame-structure itself.

One object of the present invention is to improve the rigidity and lateral stability of constructions of the aforesaid type.

According to the invention a frame structure of the type referred to for cycles, motor cycles and the like vehicles, and comprising two triangular frames arranged side-by-side and on opposite sides of the plane of the wheel, is characterised in that said frames are permanently secured together (e.g. by welding or brazing) by a single brace at or near each of the two angles of the structure other than that at which the wheel is mounted to which braces the individual members of the triangular frames are also permanently secured.

In a convenient construction the brace which unites the triangular frames at one of the said angles constitutes, or is integral with, a bearing member adapted to be mounted (e.g. pivotally) on a spindle carried by the main frame of the vehicle or by an element secured thereto, which bearing member extends substantially from one side to the other of the frame-structure.

If desired, the bearing member may be split and provided with means (e.g. bolts) whereby it can be clamped to a spindle which is pivotally mounted in the main frame of the vehicle or in an element or elements carried thereby.

In order that the constructional details may be the more clearly understood, reference is made to the accompanying drawings in which:

Figure 1 is a perspective and more or less diagrammatic illustration of a preferred construction;

Figure 2 is a similar view of a modification, and

Figure 3 is a diagrammatic side elevation on a smaller scale of a further modification.

Like reference numerals indicate like parts in the various figures of the drawings.

Referring to Figure 1, the frame-structure comprises two triangular frames formed of tubes and arranged side-by-side so that a wheel (the axis of which is shown in chain lines at 10) can be received between them. Each of these frames comprises a lower tube 11 and two side tubes 12, 13. In each frame the tubes 11 and 12 are welded or brazed into lugs on an end member 14 in which the axle of the wheel can be mounted by any convenient means. The two triangular frames are rigidly connected together at their apices at the required distance apart by a single casting or forging 15 which has at each end a pair of lugs to which the corresponding side tubes 12 and 13 are welded or brazed. At the lower front angle the triangular frames are also similarly rigidly connected together by another forging or casting 16 likewise provided with two pairs of lugs to which are welded or brazed the lower and front ends of the

corresponding tubes 13 and 11 respectively. The forging or casting 16 is pivotally mounted by the aid of any suitable bearings on a spindle carried by any relatively stationary part of the vehicle, and the forging or casting 15 is connected by helical springs 17 to the main frame of the vehicle.

It will be seen from the foregoing description that a rigid triangular frame structure is provided, and that the main bearing for the pivot is an integral part of said structure. Moreover, the construction allows said main bearing to be of substantial length—approximately equal to the distance apart of the triangular frames—so that the structure is well supported at its pivotal point. Furthermore, the construction is such that the structure is adapted to withstand any side stresses to which it may be subjected, and any tendency of the wheel to lean over is overcome.

In the construction illustrated in Figure 2 parts corresponding to those described with reference to Figure 1 are indicated by like reference numerals. The forging or casting 16 is not pivotally mounted on the spindle aforesaid as hereinbefore described, but said forging or casting comprises a bearing member 18 which is split and can be clamped by bolts 19 to said spindle which latter in this case is pivotally mounted in the main frame of the vehicle or in a part connected thereto. Also, the frame structure is resiliently connected to the main frame by a leaf spring 20 instead of by helical springs. This leaf spring is mounted at its upper end on a pin 21 carried by a pair of links 22 secured to the forging or casting 15.

In either of the constructions described, the pivot for the frame-structure may be mounted in lugs provided on the main frame of the vehicle, or on the engine casing or gear box in the case of a motor bicycle, or in any other convenient manner.

The invention is not restricted to the precise constructional details hereinbefore described. For instance, if desired and to enable the triangular frame-structure to be applied to existing main frames, the pivot bearing 16 may be provided at the apex of the triangle and the forging or casting 15 at one of the lower angles of the frame-structure, as shown in Figure 3. Moreover, any convenient spring suspension may be employed.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A frame-structure of the type referred to for cycles, motor cycles and the like vehicles, and comprising two triangular frames arranged side-by-side and on opposite sides of the plane of the wheel, characterised in that said frames are permanently secured together (e.g. by welding or brazing) by a single brace at or near each of the two angles of the structure other than that at which the wheel is mounted to which braces the individual members of the triangular frames are also permanently secured.

2. A frame-structure according to Claim 1, wherein the brace which units the triangular frames at one of the said angles constitutes, or is integral with, a bearing member adapted to be mounted (e.g. pivotally) on a spindle carried by the main frame of the vehicle or by an element secured thereto, which bearing member extends substantially from one side to the other of the frame-structure.

3. A frame-structure according to Claim 2, wherein the bearing member is split and provided with means (e.g. bolts) whereby it can be clamped to a spindle which is pivotally mounted in the main frame of the vehicle, or in an element or elements carried thereby.

4. A triangulated frame-structure for cycles, motor-cycles or the like vehicles, substantially as described or substantially as illustrated in any of the figures of the accompanying drawings.

Dated this 15th day of November, 1927.

BOULT, WADE & TENNANT,
111 & 112, Hatton Garden, London,
E.C. 1,
Chartered Patent Agents.

Fig.1.

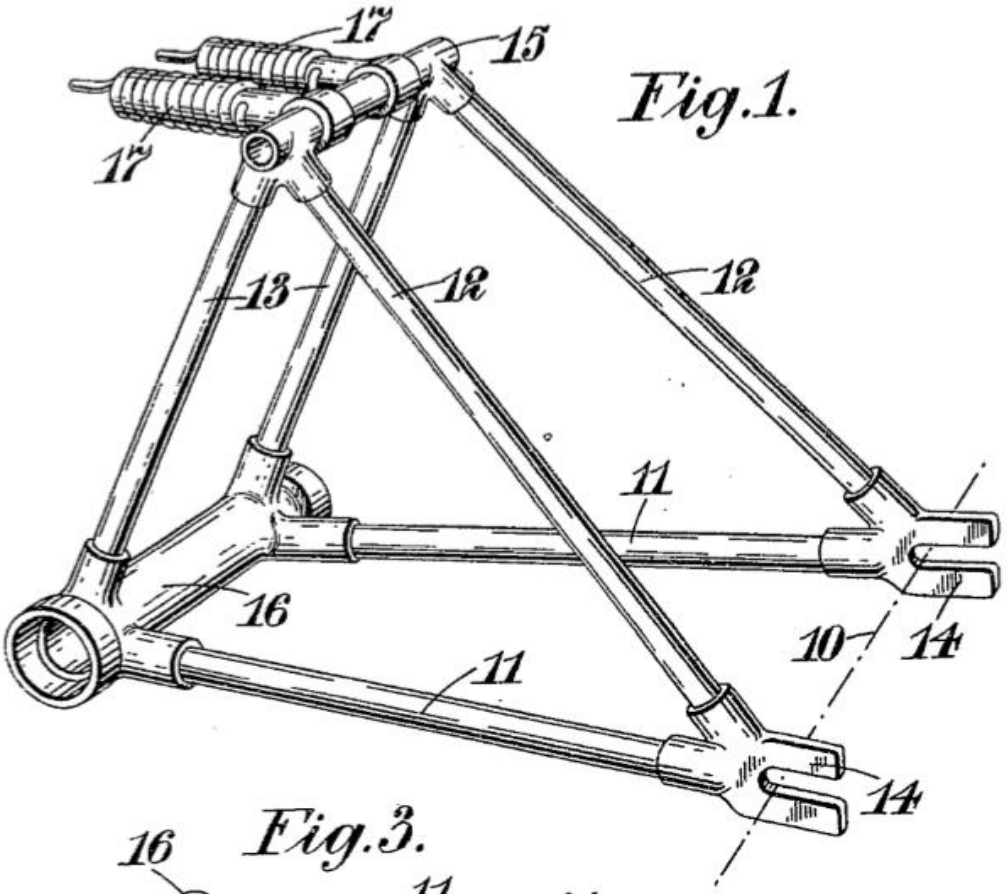


Fig.3.

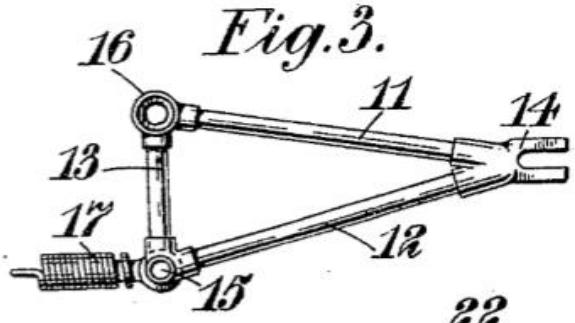
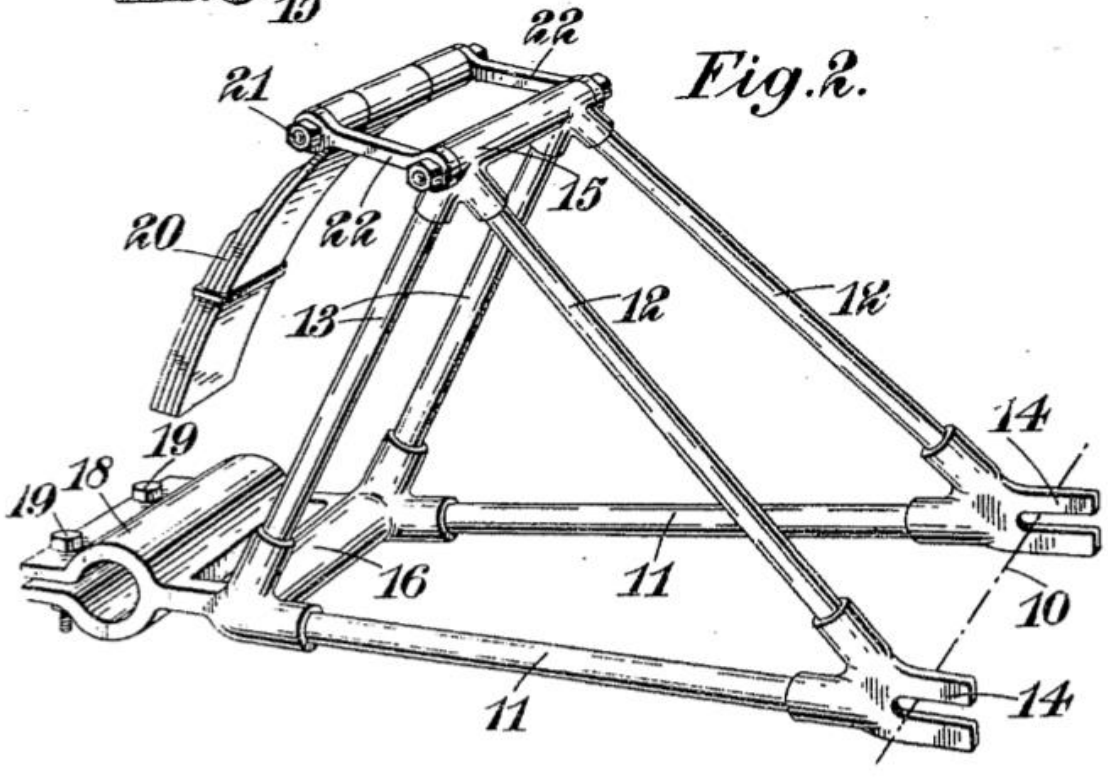
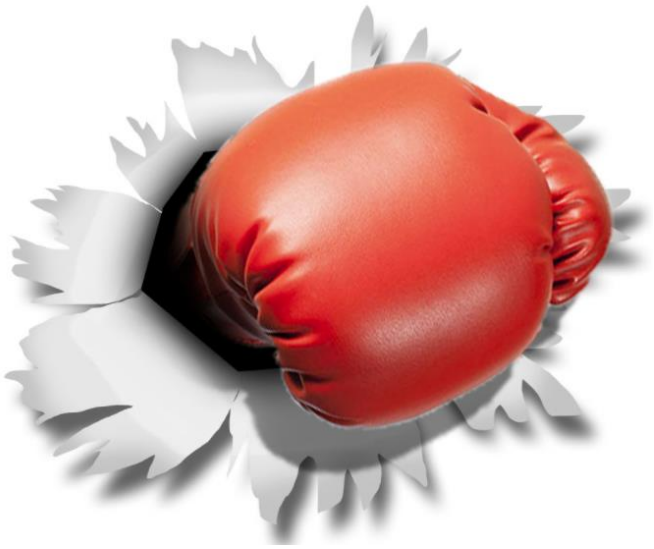


Fig.2.



Charles & Read Ltd. Photo Litho.

Packing The Punch

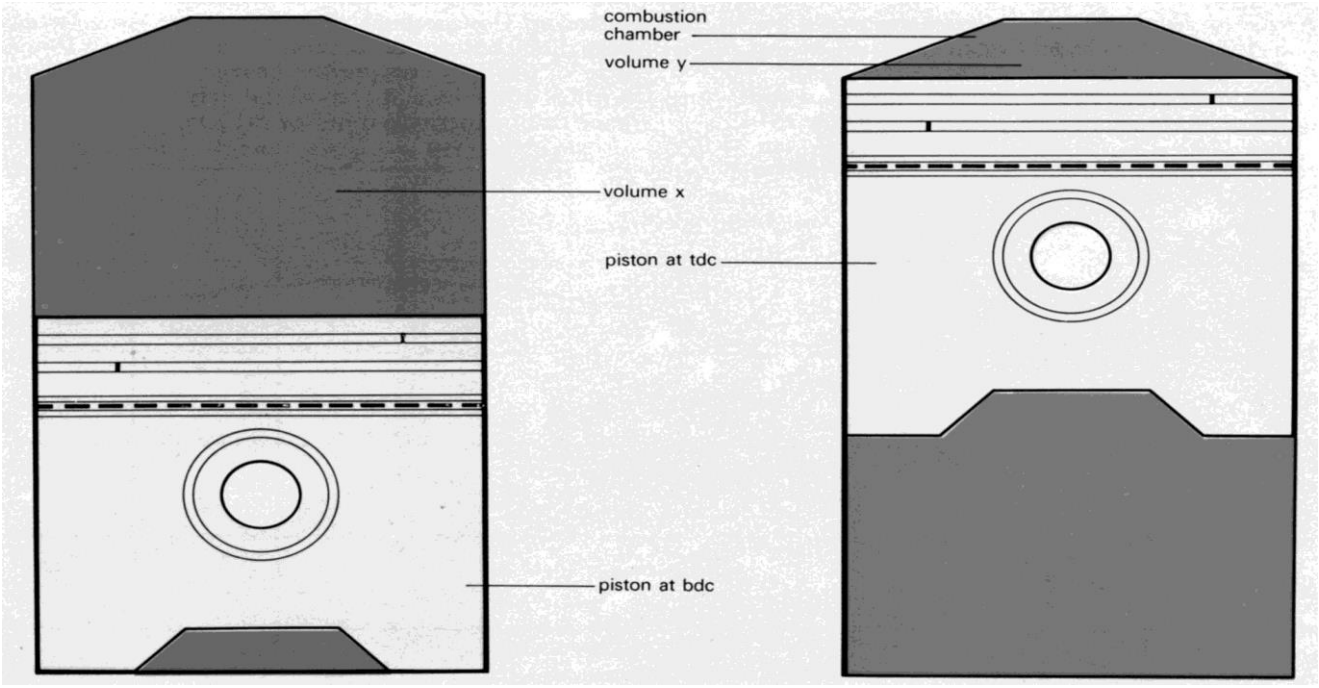


An OVR contribution from LJK Simpson

From top dead centre, after the initiation of combustion, to the moment of effective opening of the exhaust port, is the phase of the petrol engine's operating cycle when the burnt or burning charge inside the cylinder is allowed to expand. In the thermodynamic cycle which governs the operation of the internal combustion engine, this expansion phase is the one in which useful (that is, power productive) work is done. The greater the expansion ratio, the greater the amount of energy that can be extracted from the burning charge. Since the expansion phase begins when the piston is at the top of its stroke, it follows that the smaller the combustion chamber volume remaining above it, the greater the expansion ratio will be.

If the expansion ratio is so important, why do we always talk and think in terms of the compression ratio? The answer is that it is more easily measured, more easily felt, makes its own contribution to (and imposes its own limits on) engine performance, and is usually the same as the expansion ratio anyway. There might be a slight difference introduced by asymmetric valve timing, but otherwise there is none in any motor cycle engine.

Expansion follows compression of the charge to prepare it for combustion. The greater the compression the better, within limits; but knowing where those limits lie is another matter, approached through an appreciation of what the compression ratio is and means.



The relationship between the combustion volume with the piston at bottom dead centre (x) and the volume with the piston at top dead centre (y) can be expressed as the compression ratio x/y

The term Compression Ratio is simply a numerical expression of the extent to which the charge of fuel and air mixture, drawn into an internal combustion engine, is compressed before expansion. In the conventional piston engine, it is the ratio of the volume of the cylinder and its combustion chamber when the piston is at the bottom of its stroke to the volume remaining when the piston is at the top of its stroke. The smaller the remaining combustion space then is, the higher will the compression ratio be.

The higher the compression ratio of a given engine, the greater is the net power that it will then develop — provided that the compression is not so great as to induce the charge to detonate instead of burning smoothly and progressively as it should. Moreover, the improvement in combustion caused by increasing the compression — which heats the charge and improves its homogeneity — allows more efficient utilisation of the heat energy in the fuel during the expansion phase, so for a given power output the high-compression engine will consume less fuel.

Unfortunately, the relationship between compression ratio and thermal efficiency is not governed by any simple law capable of straightforward mathematical statement; but an illustration of the effect can be given from results obtained with a laboratory test engine run at its most economical mixture setting. At a compression ratio of 4:1, its specific fuel consumption was 0.55 pounds of fuel per horsepower per hour (hph) ; at 5:1 the fuel consumption figure dropped to 0.4851b/hph ; at 6 :1 to 0.445; at 7 :1 to 0.4201b/hph.

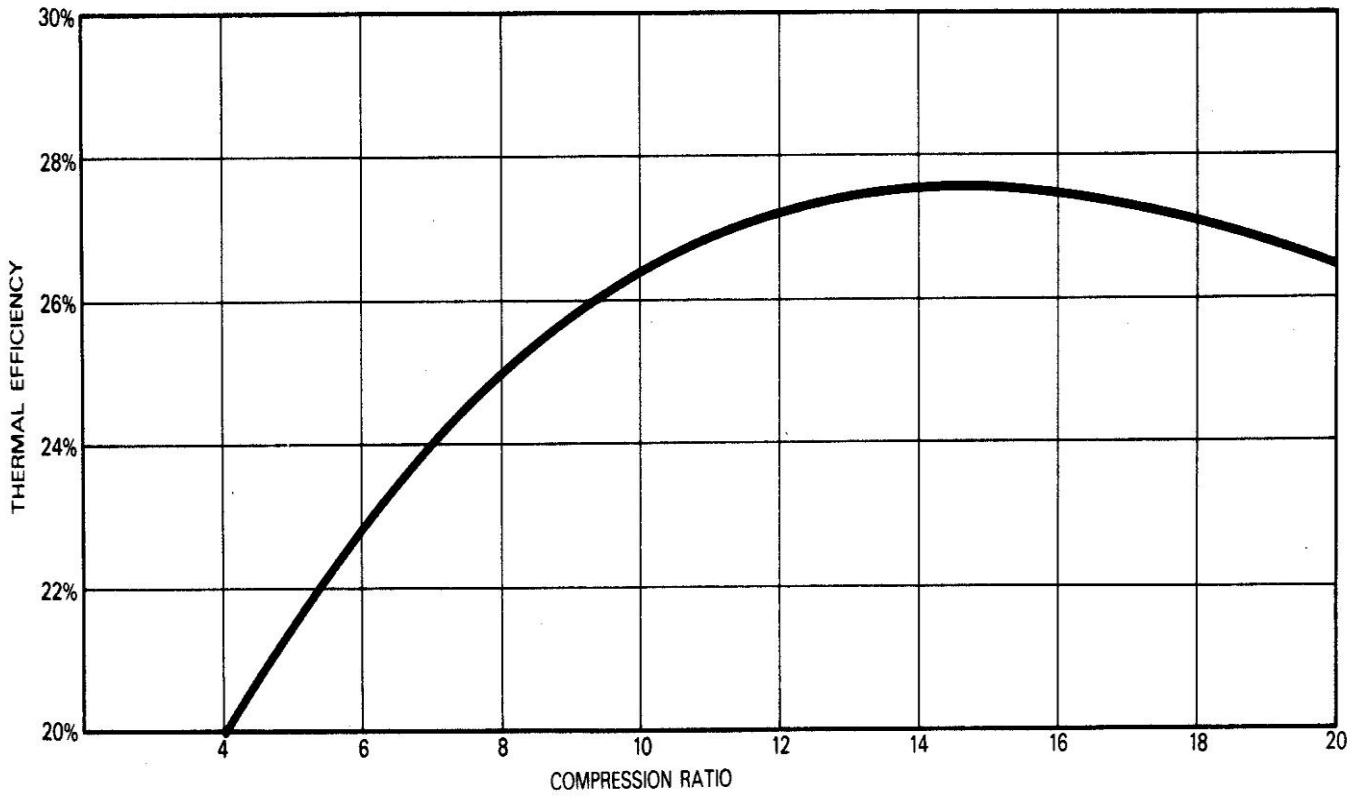
Such figures might represent the limit for one engine, or only the beginning for another. In a given engine, the limit to compression is imposed by the tendency of the fuel to detonate: the use of a fuel having higher anti-knock or non-detonating properties (that is, in popular language, a higher octane value) will allow the compression ratio to be raised further. A typical engine might be limited by 70-octane petrol to a compression ratio of 5.5:1, but feed it with 90-octane fuel and its compression ratio could be raised to 7: 1, or to 9:1 with 98-octane fuel.

There is nothing to be gained by using high-octane fuel if the compression ratio is not high enough to exploit it: there is no point whatever in feeding premium petrol to a new machine designed to run on regular petrol. When that engine has seen considerable service, then its octane requirement may rise, due to deposits formed within the cylinder head - not because of their effect on the compression ratio, which will be negligible, but because they can incandesce or otherwise promote detonation or pre-ignition. On the other hand, if the compression ratio he raised appropriately to complement a higher-grade fuel, then the greater thermal efficiency derived from the higher compression and expansion ratios will he revealed not only in lower specific fuel consumption but also in greater power output. By raising the compression to exploit 90-octane fuel instead of 70, the power will be augmented by about 20 per cent: raise it to perhaps 9.25:1 to justify 100-octane fuel, and the power will be about 40 per cent higher than on 70-octane; on fuel equivalent to 110-octane, a ratio somewhat in excess of 12:1 might yield power 90 per cent higher than on 70-octane at 5.5: 1.

Apart from the properties of the fuel, there are many other factors serving to limit compression ratio. One is the greater mechanical loads imposed on pistons, connecting rods, big-end and main bearings, and other stressed parts, by the higher peak pressures realised during combustion. More difficult to overcome are the problems of combining a combustion chamber of good shape and small enough size with valves large enough to pass the required amounts of charge and exhaust gas. It is necessary for good and efficient combustion that the shape of the space in which it takes place - the volume above the piston at the top of its stroke -- should have the greatest possible ratio of volume to surface area, and in modern engines it has usually been this, rather than fuel qualities, that has governed the maximum compression ratio.

The introduction of legislation concerned with exhaust emissions has changed the situation somewhat. It is a combination of high pressure and high temperature that encourages the formation, during combustion, of the oxides of nitrogen that the new laws have sought to reduce, and those conditions are produced in high-compression engines. Accordingly, there has been a move to lower compression ratios, further encouraged by popular misgivings about the lead compounds added as knock-inhibitors to high-octane fuels: low-lead petrol requires a low compression ratio because it is usually of relatively low octane rating. At the other extreme, alcohol fuels permit exceptionally high compression ratios, because they are slow to burn, have a high octane rating, and they need no lead compounds.

An alternative means of increasing the compression is to compress the charge before it is delivered to the cylinder, and this can be done with some form of supercharging pump. The effect on the engine's character and performance is quite different, because the expansion ratio remains unaffected. Further expansion of the exhaust gases into a turbine may allow more energy to be harnessed: the turbocharger is widely acclaimed as a good means of achieving this. However, since forced induction is at present hardly suitable for road going motor cycles, and since supercharging has been prohibited in racing since the late 1940s, the sole application of these techniques is currently limited to sprinting competition.



There is a relationship between the compression ratio and the thermal efficiency of an engine. In theory the maximum efficiency would be obtained with a compression ratio of around 15:1 but with readily available petrol the onset of detonation limits the usable ration to well below that.

Vincets racing at Barber Vintage festival this past October, 2019

First 2 pics are Alex McClean OHC. Norton Manx , & Dave Roper Vincent Grey Flash Replica Saturday race. Roper won on the Vincent . Last pick David Tompkins in practice. *Photos to OVR from Carleton Palmer II, USA.*

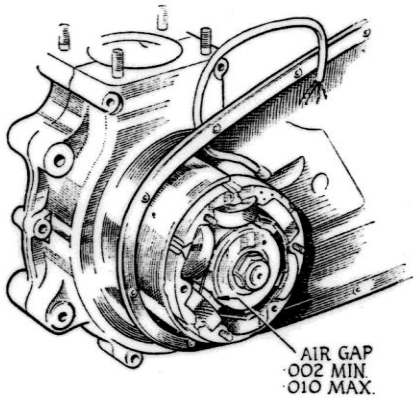
"DO-IT-YOURSELF" SERIES No. 16 - - - by BERNAL OSBORNE

The 197 c.c. o.h.v. Single-cylinder

ARIEL "COLT"

Maintaining the Smallest-of-Range Model made at Selly Oak

CARRYING a model name long associated with the Ariel range, the current "Colt" is a lightweight designed for "utility" riding; consequently, the general layout of the machine is simple. With toolkit equipment, plus devices to facilitate dismantling the front forks and the withdrawal of the contact-breaker mechanism (both illustrated)—and, of course, access to, if not the possession of, reamers and similar general workshop kit—a private owner may confidently start work on a comprehensive overhaul. The only apparently complicated item is the wiring loom in which, certainly, leads and connections are a little more numerous than usual; this is occasioned to some extent by the inclusion since 1956 of two switches, instead of one, controlling the separate ignition and lighting circuits. Although, as a result, the wiring appears to be more involved, this is a better arrangement when it comes to tracing a fault.



The stator assembly; adjustment must result in an equal air gap (.002-.010in.) at all pole pieces.

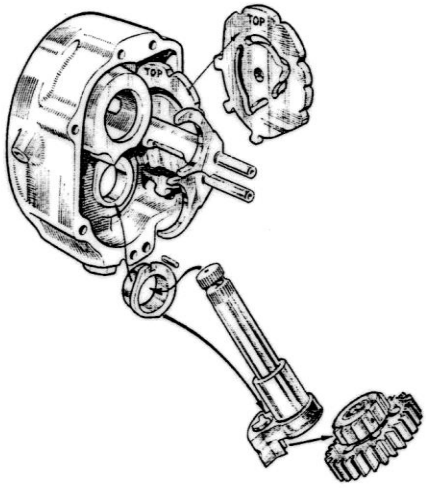
Dismantling Procedure

The little power unit is conventional in design. With the fuel tank, control cables and carburetter removed and the oil pipes disconnected, stripping can proceed by starting at the top on the tappet cover and working down to the cylinder head, which carries the o.h.v. rocker mechanism. There is a steady-stay, and gaskets will be found between the rocker cover and head and the head and cylinder. The head is attached by seven studs and nuts. Withdraw the crossed push-rods and slacken the six cylinder base nuts which hold the flanged section to the crankcase mouth.

Wire-type circlips locate the piston and gudgeon pin. It is usually necessary to remove only one circlip in order to drive out the pin, and that circlip should not be used a second time. Two compression rings and a scraper are fitted. The position of the piston, with the slot in the skirt facing forward, should be noted. The slot is on the thrust side, and to assemble the piston the wrong way round is to lose the benefit of quiet, efficient running derived from the slot arrangement.

When the primary drive parts have been dismantled, the bottom half of the unit may be taken out of the frame preparatory to splitting the crankcase. Preliminary work here involves taking off the central rotor of the generator, which is secured to the parallel driving shaft on this side by a nut and tab washer and a Woodruff key. The stator, comprising a holder for the six coils of the generator, is secured by three nuts. When these are slackened, it will be noted that the location of the stator is not absolutely rigid; it can be moved relative to the rotor. The final adjustment at this point is a critical one during reassembly operations, when a feeler gauge is used to determine the correct .002/.010 in. air gap which must be equal all round. The sprocket for the primary drive is situated behind the rotor.

On the other side, the automatic advance mechanism and contact-breaker are mounted in a special housing where they operate at half engine speed. The end of the camshaft is tapered to accept the automatic unit, which is keyed. Extractor details are illustrated; it should be noted that the rod section is $3\frac{1}{4}$ in. long by $\frac{3}{16}$ in. diameter, and the bolt $\frac{5}{16}$ in. diameter threaded B.S.C. 26 T.P.I.

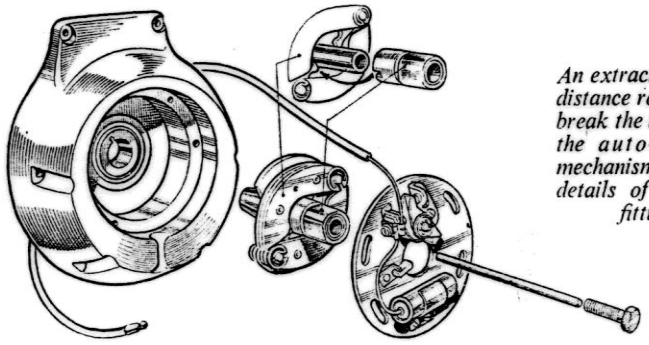


Selector assembly arrangement should be noted; this "exploded" view shows the selector forks, cam-plate and kick-starter ratchet mechanism.

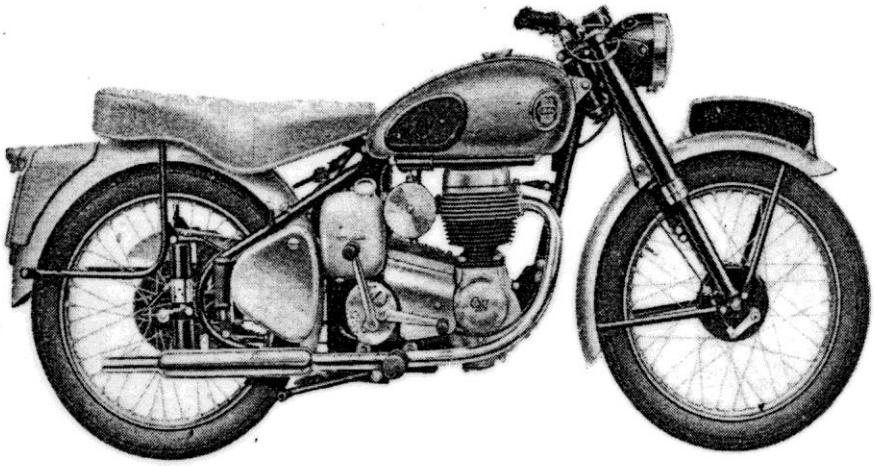
The camshaft wheel is carried in bushes in the crankcase and timing housing, and the two cam followers are located by a circlip. Note the timing marks on the two pinions before pulling down the timing gear assembly. A claw-type puller may be needed to draw off the engine-shaft pinion; this incorporates a worm-type gear meshing with a spindle which extends downwards to drive the double-gear pump housed in the crankcase sump on this side. Through-studs and nuts clamp the crankcase halves.

Complete stripping-down of this type is called for chiefly in cases where the big-end or main bearings require attention. Of a conventional built-up type, the big-end roller bearing is located around a crankpin tapered on each side to fit the flywheels, where it is keyed and secured by nuts and locking screws. Keying is essential to secure accurate lining-up of oilways. The manufacturers supply selectively assembled replacement parts, but renovation work is not beyond the skill of the knowledgeable amateur able to measure the crankpin and rollers with a micrometer and to fit new parts.

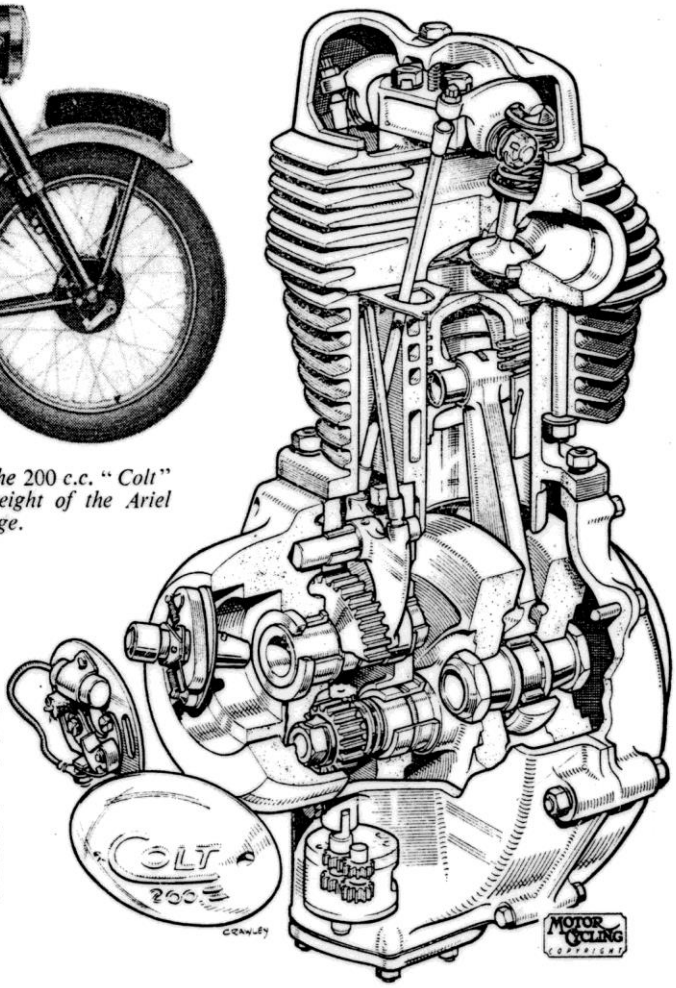
Replacement of the main bearings is slightly less straightforward because, on the timing side, crankshaft support is by means of a plain bush which is also an oil distributor. The bore must be reamed to a .001 in. tolerance after fitting (see Reference Data for details) and a line reamer tool must be used so that the assembled shaft will accept, and work in, the drive-side bearing, which is a proprietary ball-journal component pressed in position and retained by a circlip. Removal of the circlip and the heating of the surrounding metal of the crankcase suffices to free the ball-journal



An extractor nut and distance rod serve to break the taper fit of the auto-advance mechanism. Inset are details of the cam fitting.



Simple and sturdy, the 200 c.c. "Colt" is the utility lightweight of the Ariel range.



A "Motor Cycling" artist's drawing of the "Colt" power unit. It has a cast-iron cylinder barrel, providing full push-rod enclosure, and an alloy head. Fitted in the chaincase is a high-output Wipac A.C. generator.

bearing on this side. Note the use of a collar-type distance piece and washer adjacent to the drive-side flywheel.

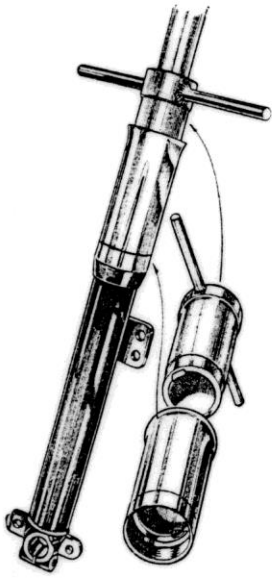
While the crankcase is dismantled, the oil pump, housed in the base and protected by a sump cover, can be inspected. It is unlikely to need attention, but if wear on the faces of the gears is apparent this can be rectified by rubbing-down in the usual way. Fine emery cloth on a steel plate or thick sheet of glass can be used as a basis for this operation.

Assembly

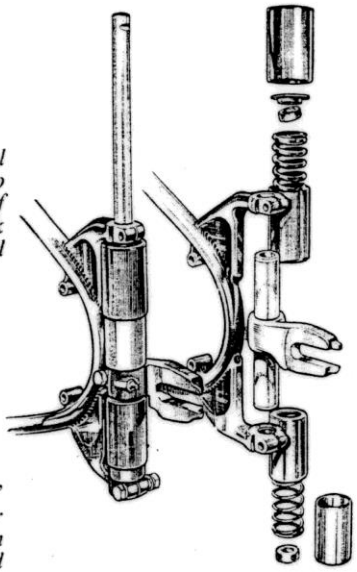
Assembly is best tackled by inserting the built-up shafts of the flywheels into the drive-side crankcase and offering up the timing-side half. Bolt up lightly and test for shaft alignment and end-play. Putting back the contents of the timing case is a reversal of dismantling routine and, if the plain bearing on this side has been properly fitted, no snags should be encountered. The piston, cylinder and cylinder head complete the building-up sequence and the work here is similarly snag-free.

Transmission

Designed and manufactured specially for the "Colt," the gearbox is an easy-to-maintain component, provided that note is made of the selector assembly arrangement before taking these parts to pieces. If he pre-heats the surrounding metal, the owner-mechanic will find no difficulty in jarring out the Hoffmann and SKF metric-size bearings which carry the mainshaft assembly at the drive and kick-starter sides respectively. Burman numbers identify the layshaft supporting bushes and these, together with finished reamed sizes, are indicated in the Reference Data on page 756.



(Left) How a special tool is employed to facilitate removal of the upper fork shrouds for renewal of the oil seals.



(Right) The "Colt's" plunger-type rear suspension, shown with the right-hand unit dismantled.

The clutch is operated by a quick-thread nut and bolt arrangement with a hardened-steel plate transmitting the thrust. This small part can easily drop out and be lost at the dismantling stage and it is important, therefore, to keep a look-out for the little plate when unhooking the clutch-operating cable and withdrawing the threaded thrust member. Note that the three clutch spring nuts are not used as a means of variable pressure adjustment and, therefore, they should be locked up tightly—otherwise there may be clutch slip and/or an uneven take-up of the drive. A manufacturing expedient is the use of a secondary chain of smaller dimensions than that employed for the primary drive. This arrangement, although unusual, is quite effective and is not, as might be thought by a new owner, the outcome of some error or economy on the part of a previous user!

Suspension

Excessive movement in the front forks is usually evidence of need for replenishment of the damper fluid. The recommended quarter-pint of S.A.E. 20 oil should be carefully measured: slight excess is not likely to be harmful, but serious over-filling will impair the suspension qualities of the fork assembly.

Normal maintenance is concerned chiefly with steering-head adjustment, which is carried out by means of the adjusting sleeve,

(*Continued on page* 757)

REFERENCE DATA

CYLINDER-PISTON GROUP

Bore: 60 mm.
Stroke: 70 mm.
Swept volume: 197 c.c.
Compression ratio: 7.5 : 1
Rebore to +.020 in. O.S.

Piston diameters:
At top land: 2.334/2.346 in.
At intermediate lands: 2.346/2.348 in
At bottom land: 2.311/2.326 in.
At skirt (top): 2.3588/2.3599 in.
(bottom): 2.3599/2.3690 in.

Piston ring gap: .008/.012 in.

Piston ring depth:
Oil control ring, 60 mm. by $\frac{1}{8}$ in. (1 off).
Compression ring 60 mm. by $\frac{1}{16}$ in. (2 off)

Permissible vertical play: .004 in.

Gudgeon pin diameters: .6247/.6249 in.

Small-end bush diameters: .625/.6255 in.

VALVES AND VALVE GEAR

Valve stem diameter: Inlet, .309/.310 in.
Exhaust, .309/.310 in

Bore of valve guides: .3115/.3125 in.

Seat angle: 45°.

Free valve-spring length: Inner 1 $\frac{17}{32}$ in.
Outer 2 in.

Rocker spindle diameter: .685/.686 in.

Rocker bush bore: .687/.688 in.

Camshaft bush bore:
Crankcase: .667/.688 in.
Timing cover: .9995/1.0005 in.

Valve timing (with tappets set at .015 in. clearance):
Inlet opens before T.D.C. .. 34°.
Inlet closes after B.D.C. .. 78°.
Exhaust opens before B.D.C. 74°.
Exhaust closes after T.D.C. .. 38°.

Normal tappet clearances (engine cold): Inlet, .010 in.; exhaust, .012 in.

CRANKSHAFT GROUP

Crankpin track diameter: .9679/.9681 in.

Con-rod big-end eye diameter: 1.4679/1.4681 in.

Permissible side play: .009/.013 in.

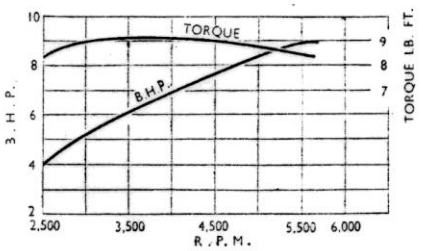
Type of big-end bearing: Crankpin and steel rollers, $\frac{1}{2}$ in. by $\frac{1}{4}$ in. (15 off).

Main bearings: Drive side, ball journal SKF 6305, Hoffman 325, R. & M. MJ25, 25 mm. bore by 62 mm. O/D by 17 mm.

Timing side: plain bush, .982/.983 in. bore by 1.251/1.252 in. O/D.

Left-hand threads of engine components: Nil.

Location of contact breaker: Within off-side crankcase housing.



Manufacturer's b.h.p./torque curves for the 197 c.c. "Colt" engine. Figures obtained on premium fuel, engine fitted with standard Burgess silencer and air cleaner. Barometer reading, 29.89 in. Air temperature at carburetter, 81°.

GEARBOX

Bearings, type and size:
Driving-gear bearing: Hoffmann 5856 U2, 30 mm. bore by 57 mm. O/D by 10 mm.
Mainshaft at clutch end: Two plain bushes. Burman 19–8–28, .8135/.8125 in. bore by .9390/.9395 in. O/D.
Mainshaft at K/S end: SKF 6202 ball journal, 15 mm. bore by 35 mm. O/D by 11 mm.

Layshaft supported by Burman 19–6–1 plain bush at clutch end, .468/.469 in. bore by .6275/.6270 in. O/D; Burman 20–6–1 at K/S end, .4695 in. bore ±.0005 in. by .6275 in. O/D.

Internal reductions: 1.1, 1.215, 1.66 and 2.5 : 1.

Left-hand thread on gearbox: Clutch centre lock nut.

TRANSMISSION

Sprocket sizes:
Engine: 17t.
Clutch: 43t.
Final drive: 17t.
Rear wheel: 47t.

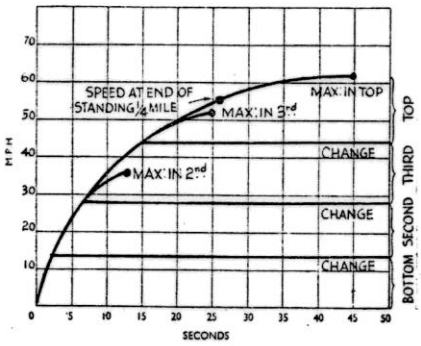
Gear ratios: 7.0, 8.5, 11.6, and 17.5 : 1.

Primary chain: Renold 110046, $\frac{1}{2}$ in. by .305 in. by .335 in. (70 pitches).

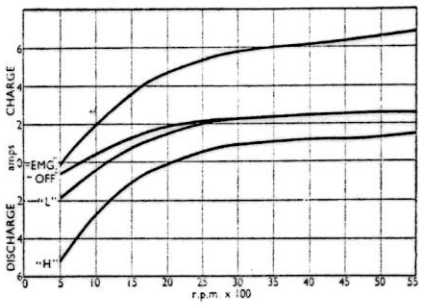
Secondary chain: Renold 110044, $\frac{1}{2}$ in. by .205 in. by .335 in. (109 pitches).

WHEELS

Front: WM 1–19.
Brake diameter: 5$\frac{1}{2}$ in.
Spokes: plain side, 10G (20 off).
Brake side, 10G (20 off).
Hub bearings: Adjustable, cup-and-cone type, comprising assembly of 11 steel balls $\frac{5}{16}$ in. dia. each side.



"Motor Cycling" road test graph for the Ariel "Colt" (published April 21, 1955).



Performance curves for the Wipac A.C. Mk. II generator, corresponding to four switch positions.

Rear: WM 1–19.
Brake diameter: 5 in.
Spokes: plain side, 10G by 8 $\frac{9}{16}$ in. (18 off); brake side, 10G by 5 $\frac{9}{16}$ in. (18 off).
Hub bearings: Hoffmann 115 ball journal bearing, 15 mm. bore by 35 mm. O/D by 11 mm. (two off).

FRONT SUSPENSION

Telescopic fork assembly carried on cup-and-cone head bearings comprising 48 $\frac{5}{16}$ in. balls

Compression spring 25 lb. rate solo.

Head angle: 27°.

Damper fluid content: $\frac{1}{4}$ pint S.A.E. 20 oil.

Slider bush dimensions:
Bottom bush: 1.2485/1.2495 in. bore by 1.473/1.474 in. O/D by 1$\frac{1}{4}$ in. long.
Top bush: 1.250/1.251 in. bore by 1.475/1.4755 in. O/D by 1.530/1.525 in. long.

REAR SUSPENSION

Plunger columns: .744/.755 in dia. (2 off).
Plunger bushes: .746/.747 in. bore (4 off).

CARBURATION

Amal Monobloc type 375/3$\frac{1}{2}$; $\frac{15}{16}$ in. choke; 110 main jet; No. 3$\frac{1}{2}$ throttle slide; centre notch needle position; 376/072 needle jet.

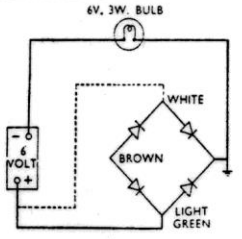
LUBRICATION: See text.

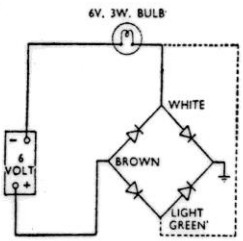
ELECTRICAL EQUIPMENT

Wipac A.C. 48 w. Mk. II generator. A.C. output rectified D.C. through Westinghouse rectifier to 6 v. 9 a.h. Exide type 3LFT2 battery: double switch control for ignition and lighting circuits.

Bulb ratings:
Headlamp: 6v. 30/24 w. double filament.
Pilot: 6v. 2w.
Tail: 6v. 3w. S.C.C. with double stop-lamps, each 6v. 3w. M.E.S.

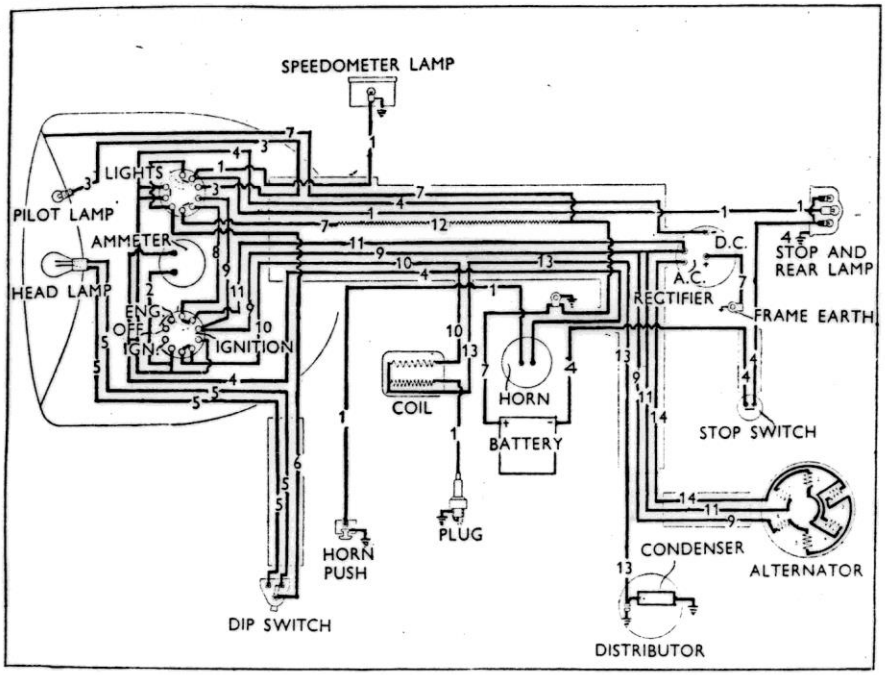
TESTING THE RECTIFIER





Battery Connections	Bulb Connections	Conclusions
Upper Diagram		
Positive/Light-green Positive/White	Earthed Earthed	Bulb lights Rectifier O.K.
Positive/Brown Positive/Brown	Green White	Bulb does not light Rectifier faulty
Lower Diagram		
Negative/Light-green Negative/White	Earthed Earthed	Bulb does not light Rectifier O.K.
Negative/Brown Negative/Brown	Green White	Bulb lights Rectifier faulty

"DO-IT-YOURSELF" SERIES - - - - - - - - Continued from page 755



Wiring diagram of the "Colt." Key to colour code: 1, black; 2, dark blue; 3, light blue; 4, brown; 5, dark red; 6, light red; 7, translucent; 8, yellow; 9, orange; 10, dark green; 11, light green; 12, resistance wire; 13, maroon; 14, white.

a form of castellated nut concealed by a hexagon-headed cap at the head of the steering column. It is important, before trying to vary head-race adjustment, to release the pinch-bolt clamping the fork crown to the steering column, and also the two fork-yoke pinch bolts acting as clamps with the main fork stanchions.

The forks can be taken out complete by slackening-off completely the castellated head adjusting nut, the steering column stem pinch bolt and the two hexagon nuts at the head of each "leg." This freedom permits the forks, complete with the lower yoke, to be withdrawn downwards through the frame lug.

The layout of the straightforward plunger-type rear suspension is illustrated and renovation work can be carried out with ordinary tools; rebushing the sliders is the most likely job. See Reference Data for dimensions.

Lubrication

The feed from the tank is by gravity through a built-in gauze filter to the delivery side of the gear pump. From the pump, lubricant is delivered under medium pressure to a non-return ball valve and onwards through crankcase drillways to the timing-side mainshaft bearing which, being of the plain type, is drilled to provide a lubrication path to the timing side shaft, flywheel web and crankpin. Cylinder-wall lubrication is by splash and oil-mist and there is an auxiliary feed from the return line to the rocker assembly. The non-return ball valve prevents oil flooding through the pump assembly and filling the crankcase. If trouble of that kind is encountered, the valve should be inspected by taking out the hexagon-headed plug and spring located beneath the timing cover. This valve acts also as an oil-pressure control.

Used oil drains into the sump, where it is gauze-filtered and picked up through a second ball-type valve. Access to this assembly is via the base cover plate.

Electrical Equipment

The Wico-Pacy system provides for what is basically coil ignition with the H.T. coil remote from the generator; the coil is hung at the rear of the top frame tube beneath the fuel tank.

Each of the six stator poles carries a coil. These coils are connected in series; they are also wired-up in parallel in two groups of three. With the ignition switch in the "IGN" position and the light switch at either "OFF" or "LOW," the output of only three coils goes to the rectifier; under heavier loads, including emergency starting, all six coils are brought into play (see wiring diagram).

For emergency purposes, a special "EMG" switch position results in a six-coil boost output to the battery; this is sufficient to start the engine even if the battery is flat. The rectifier is a non-moving electrical component in which failure is rare; but it may be tested, if the need arises, by connecting a 6v. battery in series with a 6v. 3w. bulb across the rectifier terminals. Tests to carry out, together with conclusions likely to be reached as a result, are tabulated under Reference Data When working on the rectifier or battery, remember that in both cases the positives are earthed.

SPORTS GOSSIP - - - - - - - - - Continued from page 749

MORE MOTO-BALL

CONTINUING their drive to re-popularize moto-ball, the Border club lads have arranged a "knock-out" competition for April 27 at the Co-operative Ground, Addlestone, Weybridge. Jimmie James wrote to tell us that they anticipate a very full afternoon's sport, continuing up to 5.20 p.m., with the competition following a demonstration game.

WANTED: A 500T

ANYONE got a trials Norton for sale—a 500T? Ex-Ariel "works" rider Phil Mellers is on the look-out for one of 1952-4 vintage, home-brewed rear-suspension not objected to. We shall be glad to forward any letters.

PASSENGER DEPT.

ANOTHER applicant for the passenger class . . . a Bristol University engineering student whose qualifications include (besides a mechanical bent, of course) the ability to use a smattering of French, German and Dutch seeks a Continental Circus post this summer. Letters, care of *Motor Cycling*, please.

WANTING A RIDE

SEEKING a sponsor is Ian Paskin, who is particularly keen to have a crack in the lightweight classes. Letters will be forwarded.

AND MORE AT MALLORY

THERE will be an excellent turn-out of road racers at the Nottingham Tornado M.C.'s event at Kirkby Mallory on April 14. Solo entries include Bob Anderson, Bernard Codd, George Catlin, John Eckart, Peter Ferbrache, Alastair King, Peter Murphy, Brian and Fron Purslow, Terry Shepherd, George Salt, Alan Trow, Fred Wallace and Ernie Washer. Sidecar stars Bill Boddice and Cyril Smith will also be there. The first three heats in the "350" class will be run as one-make races for B.S.A.s, Nortons and "Ajays." Practising starts at 9.15 a.m. and the first race at 11.30.

HELP WANTED?

ANY Continental "circus" rider looking for a mechanic this season? If so, Mr. A. M. Wilson, of Middlesex, may be the man he wants. Letters addressed to him, care of this office, will be forwarded.

R.A.C. MOTOR SPORT YEAR BOOK

ENLARGED for 1957, the R.A.C. Motor Sport Year Book is now available at 2s. 6d. a copy (postage 4d.). Though most of the material is of interest primarily to car drivers, such sections as that devoted to details and maps of major racing circuits and the R.A.C. Calendar are of value to all motoring enthusiasts. The book is available from the R.A.C., Pall Mall, London, S.W.1.

C.S.M.A. HANDBOOK

ANOTHER useful booklet on my desk is the C.S.M.A. Handbook for 1957, issued by the C.S.M.A., 4 Norris Street, Haymarket, London, S.W.1. Besides containing full details of the club, the handbook lists foreign touring data, steep hills, tolls, ferries, registration marks and so forth. There is also a useful digest of motoring laws which will intrigue barrack-room-lawyer types!

B31

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. Items will be listed in 2 consecutive editions of OVR.

For Sale: I have four Vincents for sale, all located in the USA. If you know anyone who might be interested, feel free to call me or e-mail. Can e-mail pictures.

[Bike 1] 1948 Rapide: Not complete yet but almost. (No title); [Bike 2] 1952 Rapide: Completely restored three years ago. Ridden less than 1000 miles since. Upgraded to Shadow specs.; [Bike 3] 1952 Comet: Runs and looks good. Owned by Lynn Brahier.; [Bike 4] 1955 Rapide: Restored original. Less than 10,000 miles From new. Spent most of its life in the AMA museum at Worthington Ohio. Original Birma-bright fenders.

Contact Tom Nelson, New Richmond, Ohio USA Phone: 513-553-2162; E-mail: jeton@fuse.net

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For Sale: Amal Mk1 Concentric Carburettor Shim Kits, provides for twelve 0.016" incremental needle adjustments to allow precise tuning in the critical mid-range. Also suitable for Wassell carbs. A$15 per kit including postage world-wide. Additional kits just A$10 each. See OVR December 2019 for more information

Email ozvinreview@gmail.com

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For Sale: Rare early Touring model 1951 Series C Vincent Black Shadow. F10AB/1B/7388 & RC9288B/E is a series C Black Shadow despatched in rare Touring Trim. See article in OVR Edition 67 "The Beastly Black Beauty"; Excellent provenance and condition. Australian $175,000 (that's approx. US$119K)

Contact. Stuart Archibald: stuart.archibald@hotmail.com or +61448767476

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@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.

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

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

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

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

François Grosset, France: Electric starter for Vincent Twin AND Singles. Electronic ignitions for Vincent Single and Twin supplied complete with drive gear. Email pontricoul@gmail.com for more info.

Cometic Gaskets: Modern, reusable gasket sets for Vincent twins and singles. If you actually USE your Vincent you are mad not to have these. Contact Paul Holdsworth of the VOC Chicago section c/o phpeh@hotmail.com Located in Chicago IL USA.

Nuts n Bolts:

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

Precision Shims Australia: All types of shims made to your requirements, ships worldwide. More info at their web site www.precisionshims.com.au

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

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

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

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

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

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

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

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

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

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

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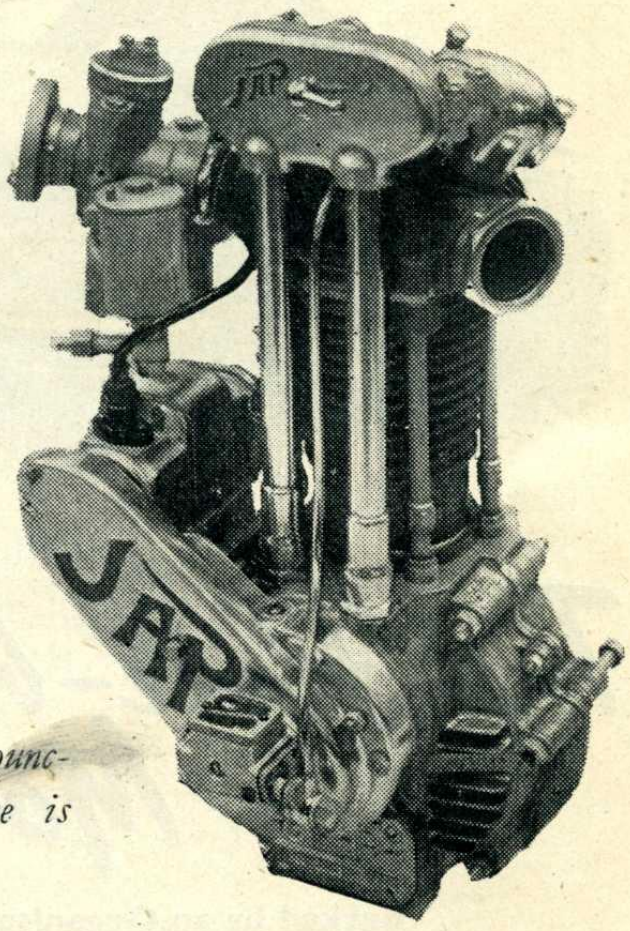

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