ROAD TEST REPORT

The VINCENT "*FIREFLY*"

A New British Unit

UNTIL this year most of the new cyclemotors produced have gone into the hands of new cyclemotorists, but the time has now arrived when the manufacturers have to consider a market with a high content of experience. Riders with a couple of years and perhaps a couple of machines experience behind them now know, to a great extent, just what they want and almost certainly know what they don't want, so there is a field for cyclemotors produced to supply the specific needs of a particular section of the buying public. One of these machines is the Vincent *Firefly*.

The *Firefly* is a high performance unit, beautifully finished, not particularly cheap (although lower priced than several competitors) and is an under-the-bracket job. It is unique in having the blessing of a large capacity tank and this feature sets the seal on our idea that the engine is aimed at the market of the mainly pleasure rider who travels fairly long distances on open roads. The ability of the machine to maintain an *average* of 20 m.p.h. with the throttle only taken over the halfway mark for hillclimbing and acceleration makes it eminently suitable for the serious tourist and the quality of material and workmanship put into it guarantee a long mileage life under such usage.

The power unit itself is a two-stroke of 48 c.c. with the conventional iron barrel and alloy head, secured by three long studs passing right through the barrel walls to the crankcase. The slightly domed piston carries two pegged rings and the power goes by a very sturdy connecting rod through a large roller big end bearing to the ball-carried crankshaft. At this point, however, the design starts getting interesting.

On the drive side of the crankshaft is a pinion which is meshed with another behind it, giving a two to one gear reduction, and this larger pinion is the drum of the A.C. generator and carries the magnets and poles within its periphery. It is mounted on a shaft which passes through the stator coils and is keyed to take the roller which drives on the rear tyre.

The roller itself is also of special interest as it has a flexible cushion bonded between the core and toothed driving ring. This combination of cushion drive, reduction gear and large (82mm.) diameter roller absorbs vibration and provides a large bearing area on the tyre, avoiding slip and improving the life of the tyre. The engagement of the drive is by an ingenious toggle gear mounted below the near side chain stay of the cycle frame, the clutch type lever on the handlebar being pulled in to draw the engine back on its slides and engage the roller with the tyre.

A neat polished aluminium casing covers the driving pinions and the 9 watt generator. The contact breaker is located at the other end of the crankshaft on the offside of the machine and is accessible through a cover plate with the engine *in situ*. The high tension ignition coil is separately mounted in the bottom of the petrol tank, clear of the engine itself. As most readers will know, this engine was first developed by H. Miller & Co., Ltd., of Birmingham and it is not surprising that special attention has been lavished on the electrical side of the design.

The Cycle

Despite the conservative British prejudice in favour of the crossbar in a cycle frame, it is gradually being realised that the so-called "open" frame is the logical and rational thing to use with a cyclemotor. So it was that the *Firefly* tested was mounted on a *Phillips* cycle with a frame of this type. The model has been specially developed for use with cyclemotors and features a sturdy frame, reinforced front forks, wide domed mudguards a *Wright* autocycle saddle and 1⅜in. wheels and tyres. It is commendably solid, comfortable and sits the road perfectly. The only rattle on it during the whole test was from the front number plate working loose. The silver finish with red lining matched the *Firefly* tank and the whole job had a satisfying feel and look of having been built for its purpose.

A special word is needed about the brakes which were of the internal expanding type. They appeared to be identical on either wheel, were accessible and easily adjustable, but whereas the front was smooth, progressive and a powerful stopper the rear was just smooth! We don't know why, but it is a fact that the one would convert the most doubting Thomas to drum brakes while the other would send him scurrying to buy a pair of callipers.

On The Road

The *Firefly* starts on a couple of turns of the pedals, takes a few yards longer to warm up than most machines we have tested, then pulls away hard. There is real acceleration from 10 m.p.h. upwards to a maximum of 28 m.p.h. (Mean speed on flat roads) but there seemed to be no top limit to the ability of the engine to rev and it was still going up smoothly when the maximum limit of safe

control demanded the cutting back of the throttle. It would accelerate without pedal assistance up grades of the order of 1 in 20 and climbed most main road hills well, but low speed pulling is not a characteristic of the unit and it was worth while bringing in the pedals at 10/12 m.p.h. when a real hill loomed up to maintain a comfortable balance between engine and leg work.

For real appreciation, however, the *Firefly* had to be cruised on open roads at about 22 m.p.h. This it did effortlessly on half throttle with ample reserves in hand and an immediate response to a touch of the lever when a grade or traffic conditions demanded. With this performance and the knowledge that the tank held enough for a hundred miles cruising range with unembarrassed refueling if required it was a pleasure to take the road on a fine day and feel that the whole of Britain was there for the taking.

Except for one serious defect, of which more anon, the *Firefly* lent itself equally well to the utility run to the local shop or pub and, except even more for that one serious defect, it was a handy mount for the daily trip to the office and back. In town the natural ability of a cycle to take advantage of every foot of road was backed by the lively acceleration and complete controlability of the unit and gave better average point to point times than any car. The engine has a notable ability to tick over, if four-and-half-stroking at modest constant revs. can be called that, and this enabled stops and restarts to be made with the engaging lever used as a clutch as soon as the pedals had the machine moving. The lever action is a little heavy but quite handy and positive.

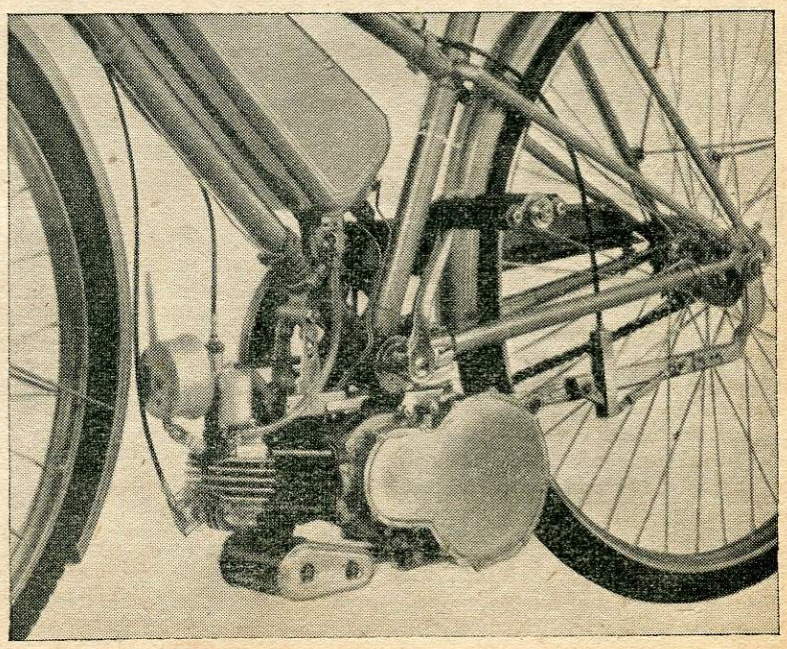
As received for test the Dunlop "*Motorette*" rear tyre held a pressure of 34lbs. which, while no doubt quite nice for the tyre, was not too comfortable for the rider or good for the machine. This was dropped to 24lbs. and later went down to 20lbs., within which range, comfort and performance were well balanced. The *Motorette* is a good tyre made for its job and runs well at reasonable pressures, so the less said about the figure recommended in the instruction book the better.

A Dunlop *Tandem* at 20lbs. per sq. in. shod the front wheel and this with the reinforced but unsprung front fork gave rather a hard ride but with good road-holding and absolute security. This fork is adequate for its work and immensely strong, but with an engine that runs up over the 30 m.p.h. mark on every favourable grade without the rider noticing it we would prefer a spring fork on the machine for perfect comfort and handling.

The good weight distribution of the low-hung, centrally disposed engine and the inclined 5-pint tank offered maximum stability under all road conditions. Power came on exceptionally smoothly even when the engine was four-stroking at low speeds. There was some toe-tickling vibration at the pedals but none at the saddle and hardly any at the handlebars. Response to the handling of the throttle lever was delightfully positive and "clean" feeling.

On the wrong side of the account we must regretfully state the serious defect previously mentioned—It was noise. The *Firefly* is the second noisiest unit we have yet tested and the sight of pedestrians a hundred yards in front turning their heads to see what was coming up behind shewed that it was not only the rider who heard the howl. Why the Vincent Company should turn out a 50 c.c. cyclemotor that makes more row that their *Black Shadow* of twenty times the capacity we do not know. When we visited the Works they talked of "Two-

The "Firefly" is neat, compact and firmly attached



Stroke Crackle" and seemed to think that it was laid on by the angels as an inevitable two-stroke sin!

As usual, the silencer was placed under the engine so that this fairly cheap and easily replaceable unit took any bangs on kerbs and steps that the low-hung engine might suffer. All engine positions have their advantages and disadvantages and the compactness of the *Firefly* kept it much more out of the way than most under-the-bracket units. The only other criticism is that the pull bar and its guide unit that carry the engaging gear are too flimsy and easily kinked, a minor point easily modified.

Summary

This high-performance British cyclemotor allied to the correctly designed cycle in which it was tested form an autocycle that can, under free market conditions, stand with the best. Various minor modifications will no doubt be made in the light of experience particularly, we hope, in the silencing system, and we confidently predict a long and successful future for this excellently designed and built unit. For the rider who wants to get there *and back* with ease, comfort, confidence and at a lively average speed the Vincent *Firefly* is definitely a Good Buy.

Specification

VINCENT "FIREFLY". 38 mm. bore x 42 mm. stroke, capacity 47.6 c.c., 1 b.h.p. at 4,200 r.p.m. Weight 24 lbs. including 5-pint petroil tank. Iron cylinder barrel, alloy head, roller big-end and ballrace main bearings. Geared drive to steel roller incorporating built-in shock absorber. 2: 1 reduction. A. C. generator, 9 watts output, mounted on countershaft inside unit. High tension coil in tank base. Lighting current direct. Petrol consumption 163.5 mp.g.,. fast cruising mixed town and country. Price £25. 0s. 0d.

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and engine vibration at the handle-bar[illegible]. This model is also equipped [illegible]kes f[illegible] claim a positive drive that is free from slip in any weather and a lower rat[illegible]

to tra[illegible] would certainly like to see the *CycleStar* here.

"FIREFLY" ROAD TEST

The illustration featured in the road test report of the *Vincent* "Firefly" in our September issue was of that unit mounted in the *Sun* "*Motorette*" cycle specially designed for use with that engine. It should be noted, nowevert, hat the actual model tested was a *Phillips* cycle.

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