

SEPTEMBER 1954

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MONTHLY 4^D

POWER & PEDAL

The Journal of the Cyclemotor

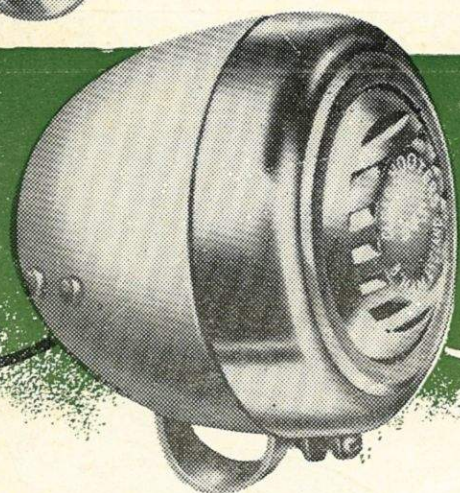


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POWER & PEDAL

SEPTEMBER

1954

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Points about the



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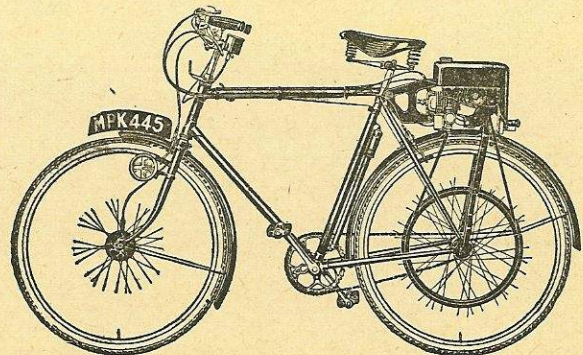
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POWER & PEDAL

THE JOURNAL OF THE CYCLEMOTOR

Editor: FRANK L. FARR

Editorial and Advertising Offices:

197 Temple Chambers, London, E.C.4 Telephone: Central 0048

BRAKES

CYCLEMOTORING, more than most activities, seems to have suffered from the popular press regurgitations of half-digested pieces of information culled from press handouts on various official reports. Not long ago some references in a report from the Road Research laboratory to brake tests on cycles fitted with attachment engines led to such a frothing, and the publication of the new regulations, which come into effect on September 1st, regarding brakes on pedal cycles looks like creating another opportunity for confusion.

A major factor in the problem is the fact that the cyclemotor as a vehicle remains unclassified, sharing the worst of both the cycle and motor cycle worlds in legal status and responsibilities. Sooner or later this state of affairs will have to be remedied and the 50 c.c. machines, whether attachments or autocycles, will become a vehicle class. In the meantime and as long as the clip-on remains a major part of the market, all matters affecting cycles will be of interest to cyclemotorists.

So far as the new regulations on cycle brakes are concerned they have no direct bearing on the laws already covering cyclemotors. In law in this country the cyclemotor is a

motor cycle and must have two independently operated braking systems. But the new regulation that pedal cycles must have two efficient and independent brakes (except in the case of machines with fixed gear) must tend to create standards of efficiency by which compliance with the law can be assessed. We are still awaiting details of the methods of testing used by the Road Research Laboratory and cannot, therefore, comment from that angle, but the figures quoted in their report received unfavourable notice and have planted in the public mind the idea that many, if not most cyclemotors, are dangerously under-braked.

In fact, of course, any comparison of the braking power of two-wheeled vehicles against three or four wheelers is pointless, since wheel-locking brakes on two wheeled vehicles must inevitably create more problems and dangers than they can solve or avert. The same position is found in comparing wet and dry road results of tests, as the cyclist on a wet road is only too anxious that the grip of his brake on the wheel should not exceed that of the grip of his tyre on the road for obvious and potentially painful reasons. The cyclemotorist, however, has the advantage over the unpowered cyclist

in that the engine itself provides an additional brake by merely closing the throttle. The factor of the weight of the engine, sometimes introduced in discussion to fog the issue, is of no importance since the average of 20lbs. or so engine weight is nothing as compared with the wide variations in the weights of riders.

Our own experience over two years of testing on all types of cycles attachments and autocycles shew that good cycle brakes are more than adequate for use with cyclemotors and poor ones are no good with or without engines. We commend this glimpse of the obvious to all who profess to study the subject. In our view it matters little what a test on a new machine will shew in braking figures and the important factor in brake design is efficient life. Brakes that require adjusting frequently will be more often out of adjustment. Proper built-in brakes, caliper or hub, as on the present autocycles last the life of the machine and rarely require attention.

On the whole, however, present brakes are not far off good enough and better than those of some other classes of vehicles. We have yet to hear of an accident caused by an under-braked cyclemotor.

COMMENT

by

Clip-on

THE rapid development of the cyclemotor movement in Britain seems to have been too much for the cycle industry to take on all at once and there are many here who do not know what is happening in the way of new registrations and the demands of riders who have already learned by experience. It is of interest, therefore, that to the ideas of the continental manufacturers the development is not rapid but actually slow.

One such leading maker, whose products sell in their tens of thousands, describes this country as technically backward and takes a pessimistic view of the prospects of the movement here because of this. He bases his judgement on two factors, the low rate of expansion and the fact that Britain, alone of all cyclemotoring countries, is still concentrating on attachment engines which, he says, have been virtually given up everywhere else.

Such a judgement, although worthy of attention, seems to ignore the most important background factors that condition the growth of a new movement. It remains a statistical fact that France, even with a million cyclemotors in use, still has fewer motor vehicles per head of population than Britain. The advent of the light, cheap and efficient cyclemotor there had a huge ready-made market that wanted to motor but had been kept out of it by lack of money. Given motoring at the price they could afford they just lapped it up. Their

"small man" garages took to the new vehicles and gave cheap and comparatively efficient service largely because they had never been divorced from the cycle trade as had happened here.

Then there is the factor that, because of war damage and relatively slow restarting of industry, to say nothing of our own stupidity in the matter of Purchase Tax, French factories were able to move right in with well built and completely equipped autocycles, and that these were easy to sell because the public there was already accustomed to two-inch tyres and open frames on bicycles.

I believe that Britain will get there in the end and when they come our autocycles will be good enough to face the world as boldly as our cycles now do. But there is much to be learned in high places yet and it is up to the users here to keep on demanding what they want and pressing for the best in design and material.

Direct Drives

This term seems to have come into general use with both trade and public to express its exact opposite. The really "direct" drive on a cyclemotor is the un-gear roller bearing on the tyre, but common usage has it that the term should be applied to drives by chains, sprockets and/or gears. Anyway there seems to be a demand for them.

Many correspondents write in to ask how they can satisfy their

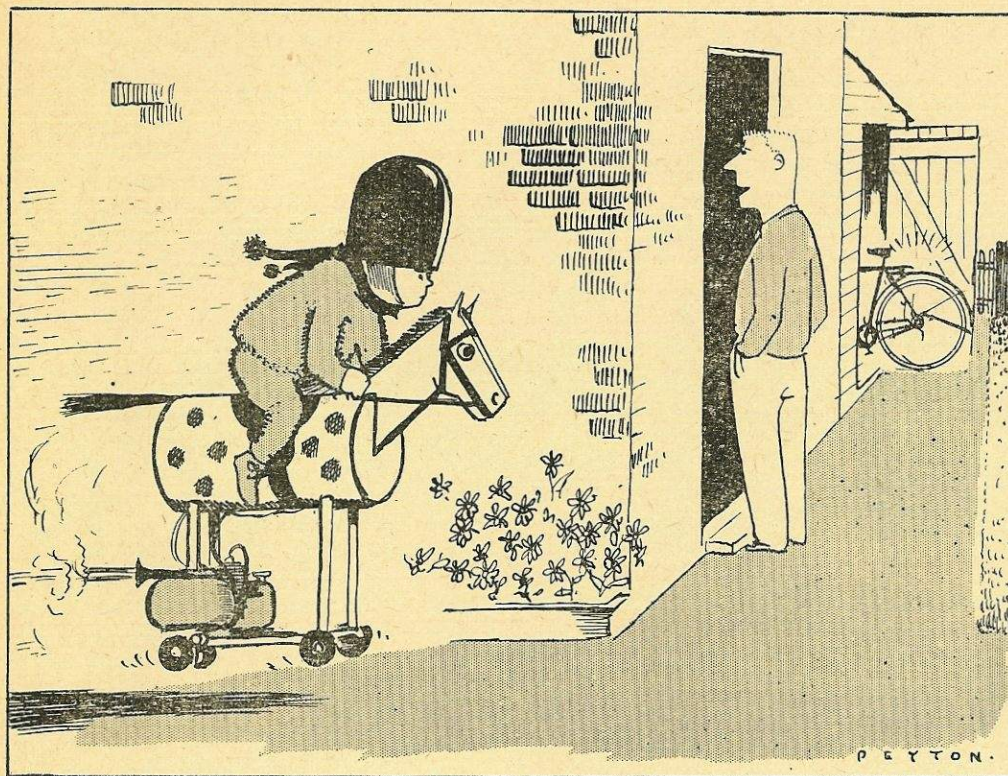
needs for such units that can be used with the existing three or four speed hub gears. Only one British unit exists for this market and that, by virtue of its own low gearing has little need for the pedals and pedalling gears at all. One experienced type, however writes in praise of the French V.A.P., a famous engine that is fitted to a number of French autocycles as well as existing as an attachment. It is mounted on the nearside of the rear wheel and drives by its own chain independently of the pedalling gear

Our correspondent praises the unit for long and trouble-free mileages, 190 m.p.g., mostly in town, ease of maintenance and effortless maintained 22 m.p.h. cruising speed. Any engine that provides that performance, plus the hub gears for pedalling, would have a welcome here.

H.P. Terms

A dealer friend sends the suggestion that we should run an article to explain how the extra cost of buying a machine on hire purchase is arrived at and who gets the money. He complains that some customers get a shock when comparing the cash price with the hire purchase price and "think that the dealer is fleecing them".

Space will not permit an article on the subject but I am glad to give it some publicity here as it is hard enough to find dealers who are keen to give us service and I like to encourage those who do. The explanation is that few dealers



"You haven't moved my Cyclemotor, have you dear?"

can afford to run their own hire purchase accounts as, apart from risks, they would call for a lot of clerical labour in record keeping and chasing up of payments and also it would mean tying up a lot of capital as the dealer has to pay for his stocks in cash. This means that the actual hire purchase terms are laid down by the big finance companies who themselves operate a "closed shop" agreement to keep the business safe and lucrative.

In fairness it must be admitted that, unlike house furniture, etc., the buying of a cyclemotor makes the customer more mobile and, if he treats it badly, the recovery value of the unit can be almost nil in a very short time, and even finance companies appear to think they have a right to live!

It does seem to me that those makers who offer comprehensive overhaul service at fixed charges, which gets over the heavy depreciation problem, might do well to

encourage dealers to operate self financed terms by supplying the dealers themselves on deferred payments, or is there a trade agreement against this?

Cyclemotor Life

The problem of depreciation is also raised from another angle by a reader who asks what mileage can be expected from a cyclemotor before it is scrapped or, as one other reader has done, used on a lawn mower. He also asks if I would be prepared to adjudicate on maker's claims.

The answer to that one is "No." There are far too many factors involved in the length of life of any piece of machinery for me to be bold. The idea of assessing long life, however, is sound but complex.

First and foremost is the factor of quality of material but this must also be taken into consideration with output. An engine which

turns out 50 per cent more power than another will need better material to give the same mileage life if all the power is constantly used. Then comes workmanship and here the situation is more complicated than ever, because high grade fitting to very fine limits will improve performance but make the engine *less* able to withstand misuse and neglect. Again, high speed engines wear more quickly than low speed ones if all the other design factors are equal—but they rarely are. A short stroke engine can rev. very fast without the piston speeds getting hectic and in any case a machine designed for high revs will probably have bearings adequate for its loads that will last for years.

So you see there can be no figures and few useful comparisons. In cyclemotors as in everything else it pays to get the best for your own purposes and let other people's advantages go by.

Correspondence

The Editor is not responsible for the views expressed by his correspondents. Letters should be typed or written on one side of the paper only and may be signed under a nom de plume for publication, but must be accompanied by the sender's name and address.

No Dreadnoughts

Thanks for a timely article on frames. Surely there is no demand by cyclemotorists for these "dreadnoughts" which are being offered to us. They are a retrograde tendency, the cycle trade having long attained a very high standard in frame design, both from the viewpoint of good looks and efficiency. Most of us would, I am sure, like to retain both of these qualities, nor do we want a lot of unnecessary weight.

Thanks also to FMX 809 of Wembley, for calling attention to the high price of many spares. A. Randall of Farnborough is optimistic when he says that his hub protectors could be produced for "a bob or so". Has he seen the free-wheel protector offered by one maker, for which 5/- is charged?

Finally, I would like to thank F. V. Chambers for replying to my letter of June. I agree with all he says about the *Cyclaid*, and I am rather partial to this make. However I like to pedal occasionally, and always to disengage the engine on long down hill stretches, and I look on some means of doing this as being essential.

E. NORTON

Brentford.

1½ in. Tyres

Having noticed the article by H. Kirkland in the February issue of *Power and Pedal*, I have no hesitation in offering my experience. I have had a *Mini-motor* for about two years now and have never had trouble to buy a 26 x 1½ in. power-drive tyre. I have (in turn) bought a *Firestone* de-luxe Powerdrive, a *Dunlop* Tandem, a *John Bull* Powerdrive and at the moment I am using a *Dunlop* "Motorette" 26in.

x 1½ in. which has done nearly 3,600 miles (by the speedo) and looks like doing another 3,000 miles by the look of the tread. The *Dunlop* "Motorette" is the Tyre as far as I can see

H. BOWERMAN,

Morden.

Hub Units

Replying to PYD.386 (May issue *Power and Pedal*) I suggest that he gets off his high horse in regard to his *Cyclemaster*. I have nothing to say against the *Cyclemaster*, they are good little jobs as far as cycle-motors go, but I do feel that their price of £27. 10s. 0d. is too high against the *Winged Wheel* at £25. The latter also includes a special *Dunlop* tyre, lighting coil and last, but not least, a much better brake than the coaster hub affair.

In my opinion it will not be long before there are 100,000 *Winged Wheels* on the road—provided B.S.A. turn them out fast enough.

SHW 313

Bristol, 7

The 98 c.c. autocycle

Whether or not one is in agreement that the 98 c.c. autocycle is a dying type, I suggest that this type of machine need not be catered for in *Power and Pedal* for one main reason: the user of a 98 c.c. does not have the same problems in connection with the running of his machine as the user of a motor-assisted cycle. I am not implying that motor-assisted cycles are troublesome or less satisfactory than the other type, but the fact remains that the 98 c.c. never was a motor attachment, and its development has been different.

I believe it is correct to say that all the 98 c.c. machines were placed on the market as complete machines

and so they have remained, although of course one well-known make of engine has been used by several different makers.

The 98 c.c. motor has much more in common with its larger two-stroke brothers than with cycle-motors, from the point of view of lubrication and maintenance, and the frame, brakes, tyres, etc., of a modern autocycle have become very different from the average pedal cycle. About the only thing in common is that the autocycle also is essentially a utility, get-you-to-work mount.

After all, where can *Power and Pedal* draw the line? By catering for 98 c.c. machines with pedals, Mr. Editor might as well bring in the light-weight motorcycles of the same engine size (one make of which has telescopic forks and rear springing), also *Corgis*, and the time may not be far distant when scooters of under 100 c.c. are available on the British market. No, I hope *Power and Pedal* will continue to devote itself to the interests of the cyclemotor, whether built for the job or clip-on, and after all the question of expense alone will prevent the kind of elaboration Mr. Holroyd seems to expect in his letter.

"49 c.c."

Gt. Yarmouth

The "Harding" Tricycle

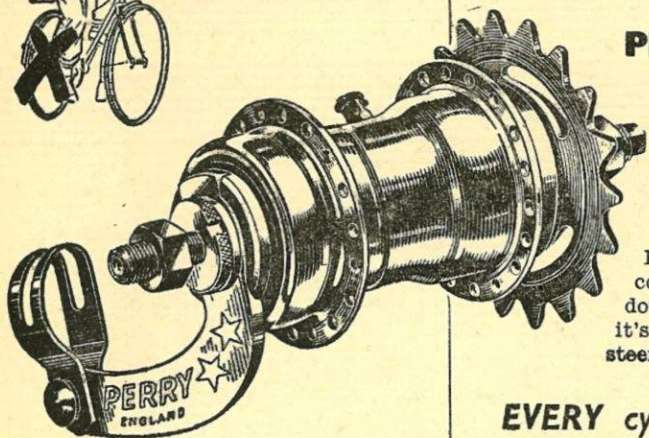
It seems to me that such a machine, fitted with, say, a *Cyclaid* attachment, would be very nearly ideal. A refinement would be to fit a hub brake in each front wheel, operated by roller levers *coupled together*, so that the brakes could be applied by either hand. One continuous cable, compensated in the manner of the old *Austin* Seven, would give even retardation. And other refinement would be a *separate* six-volt parking battery, giving long life and freedom from corrosion in the lamp, from which I have suffered.

I am 63 years of age and quite fit, but would feel a lot happier in slow moving traffic on such a



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Ask your dealer for a demonstration,
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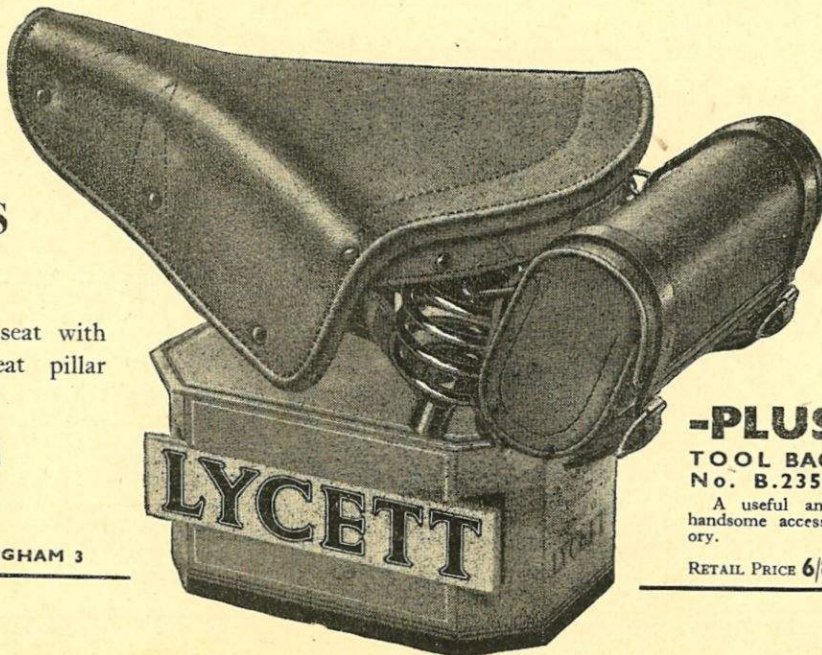
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machine, with the addition of being able to carry parcels in comfort.

Apart from motor cycles, my first clip-on was a *Young* 1 $\frac{3}{4}$ -h.p. two-stroke in 1920. It was chain driven and had a clutch. Mounted over the back wheel, the chain wheel was attached to the end of the hub by means of a threaded tapered ring. The machine functioned quite well, apart from carburettor trouble on bumpy roads. Eventually, however, the chain wheel pulled off the end of the hub!

Next I had a French 4-stroke roller driven on the front wheel. It was mounted on telescopic tubes, and had a handle for "Screwing" on or off! Carburettor was very primitive.

Number three was a *Johnson* motor-wheel. It was a twin cylinder two-stroke with a massive wheel and stand and a hub brake, also electric lighting. The tank was mounted on the top tube of the

drive, it was very fast, but had no clutch and was awkward in traffic.

My present mount is a *Velo-Solex*.

DOUGLAS LANE

Herne Hill.

Tandem Problems

After several enquiries as to the most suitable motorised unit for my tandem I decided on the *B.S.A. Winged Wheel*. I am pleased to report it has given me every satisfaction and the outstanding points are:

1. The snappy little engine.
2. The easy method of de-carbonising.
3. The 9in. diameter brake which is ideal for extra weight carried on a Tandem.

To overcome the stand problem, I have fitted a *Esway* motor-cycle prop. stand, which I find very useful.

W. H. MARSHALL

Technical Articles Wanted

The August issue of *Power and Pedal* is only my fourth, it has good prospects, but may I suggest you have a few articles on the working of and repair of "clip-ons" and more exploded drawings. I am sure that this would improve and bring up the standard to that of other motorcycling books.

HHM 755

E.12.

The "Teagle"

After carefully considering all the various cyclemotor engines (and their prices) on the market I recently fitted one of the new *Teagles* to my bicycle.

This is my first experience with a unit of this type, although I have had three motor-cycles.

I am very pleased with it indeed. The power and performance are simply amazing especially as I weigh nearly 15 stone.

The compact, but accessible

100,000

Cyclmaster is the original and best motor-wheel, tried and tested by more than 100,000 users in this country alone—and by many others overseas. We receive many such letters as "My Cyclmaster has travelled over 30,000 miles and is still giving excellent service."

Cyclmaster is completely self-contained and it fits any bicycle or tandem. The drive is by enclosed chains so that there is no risk of power slip and no roller to wear the tyres. A clutch enables you to keep the engine running in traffic, and a powerful back-peddalling brake and lighting dynamo are included in price.

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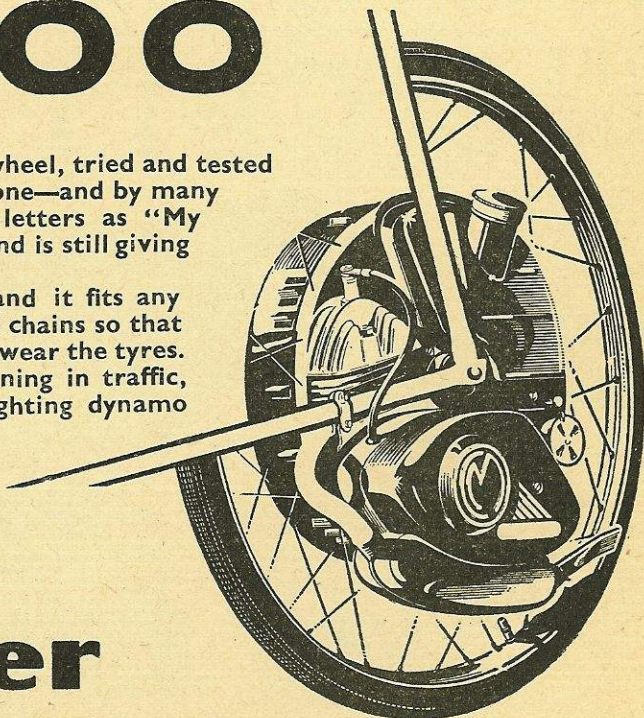
230 M.P.G.

20 M.P.H.

Cyclmaster

CYCLEMASTER LIMITED (Dept.T.16)

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This photograph of the beautiful North Downs village of Abinger Hammer was sent in by reader John Blaxland

engine is very well finished.

Perhaps most important of all—when I was unfortunate enough to have some trouble (not with the engine but with one of the component parts—the carburettor) the *Teagle* Company's prompt and courteous after-sales service was easily the best I have ever experienced in any branch of trade, including pre-war.

I am sure this new *Teagle* engine will have the success it undoubtedly deserves.

NORMAN E. LEWIS
Birkenhead.

For Cornish Hills

With reference to the letter by your reader Frank Stockham of Truro in the July issue of *Power and Pedal* it appears that all his requirements for an ideal cycle motor are to be found in the *Cucciolo* fitted to a *Britax* Cycle.

This has the two gears which he requires, bottom gear being low enough to climb gradients of 1 in 5

without assistance, and by selecting neutral gear, he is able to coast down hills at any speed he requires. The engine capacity is the 48 c.c. which is the smallest capacity from which a reasonable performance can be expected. Direct chain drive is employed and as the engine is fitted to the bottom bracket, the lowest centre of gravity possible is achieved.

Its overall weight of 72 lbs. proves to be one of the lightest machines on the road, and petrol consumption of 300 miles to the gallon is almost unbeatable.

Its performance need not be emphasized here as this was admirably reported in your recent road test.

BRITAX (LONDON) LTD.

Accessories—And Tests

Four months ago I ordered *Power and Pedal* to be sent to me regularly. Each number shows an advance in interest appeal. I am gaining much from it that helps

advance my pleasure from a *Clip-on*. The advertising has been specially helpful. On account of it I bought a *Webb's* spring fork, which makes my steering much easier and more pleasant as well as giving relief from jar. And I tried *Two-Stroke* Oil, liked it and now use it regularly. I also was caused to buy a *Wright* saddle for cyclemotors. This saddle has eliminated a source of discomfort, and I bought a *Smith's* speedometer. I find it pleasanter and safer to know how fast I am travelling. But for *Power and Pedal* advertising I should not now be enjoying these advantages.

With regard to suggestion that *Clip-on* riders should be excused from test; I recently took a test at Southend and failed to pass. The examiner was courteous and reasonable. I swung out too much at corners. I often see cyclists doing this but that does not make it safe. Tests organized for children on bicycles, it has been demonstrated, have helped. No cyclist will be harmed by training to pass a test. A special class for *Clip-ons* may be desirable, but to abolish the test entirely would in my view be contrary to the interest of the public, the trade and the riders.

P. H. POOLE

Rayleigh.

Points from Letters

Tandem Riding

"...we find the *Cyclemaster* just the job. Our machine is very heavy, d.g., and our combined weight over 25 stone. We can travel at 30 m.p.h. but our usual speed is 15 m.p.h. for safety and comfort and we find most hills reasonably easy, with pedal assistance, of course. Our m.p.g. average is 140."

D. V. SQUIRES,
Christchurch.

The Female of the Species . . .



M. PEYTON

IN 1947 pedal cycling against the prevailing wind was becoming more like hard work than pleasure and, when the doctor forbade my friend further cycling, we decided to solve the problem of transport to and from work by buying some kind of motor propelled vehicle. Neither of us had driven before and, indeed, my only experience in this field had been pushing my elder brother's ancient motorcycle up and down the street in an attempt to start it.

Nothing daunted, however, we went to see the local dealers and inspected several models. My own fancy was caught by a small model of 125 c.c. (not that I knew what that meant but the shape and colour were so much nicer than that of anything else) my friend, however, was more cautious, and felt that the smallest possible machine, preferably with pedals, would be more suitable. After inspecting

the various types of machines for some time we asked if the engines were likely to go wrong and were assured with a perfectly straight face that the engines were so simple there was absolutely nothing to go wrong, but that the plug needed occasional cleaning. The thought of cleaning a plug frightened us so much that we beat a hasty retreat and didn't return to the fray for three weeks.

We probably would not have returned yet if the men in my family hadn't made so many jokes about it that we were forced to save our faces. In all it took us about four visits to our local dealer before we finally plucked up enough courage to complete the deal and choose two second-hand auto-cycles of different makes. Small motorised cycles which would have suited us admirably were, of course, virtually unknown in 1947.

... TRY THEIR LUCK

Part One tells how the adventurers set forth to buy machines and what befell them at the dealers.

"Thus a new menace was released on the British Roads"

Thus came the great moment when we were first owner-drivers.

The dealer had obligingly taxed and insured our bikes for us and also obtained our driving licences; all was ready to drive away. He explained that this was the clutch, this the brake, this the release valve, this the tickler, this the butterfly and so on and so forth. I didn't like to point out that the only word I understood was "brake" so, with the engine ticking over I got on the bike (I had previously proved totally incapable of starting her by myself and had managed to stall her everytime anyone else had done so). Once on the bike I was pushed off with the mechanic running beside me. He let out the clutch and away I went at a steady 5 miles per hour. How lovely to be sitting there in effortless ease—I was thrilled—until I discovered I was on my own and the mechanic far behind. With great promptitude I shut my eyes and pulled every lever that came to hand—the expected happened—with noises never heard before or since I jerked to a standstill, got off the bike and pushed her back to the garage with wobbly knees. My friend fared little better and so, shattered and shaken, we pushed the bikes despondently home. Never were we nearer defeat.

At home, however, my brother and brother-in-law, thinking this was a new amusement, were waiting to welcome us and kindly spent an intensive Saturday afternoon coaching us. The street chosen for our lesson would make a good tank testing course, finishing as it does in a field, in which, incidentally, I frequently found myself, not yet being conversant with the use of the clutch and back pedalling brake. My friend however was quicker in learning to handle her machine and was able to go home alone on hers after only two hours.

Thus a new menace was released on the British Roads.

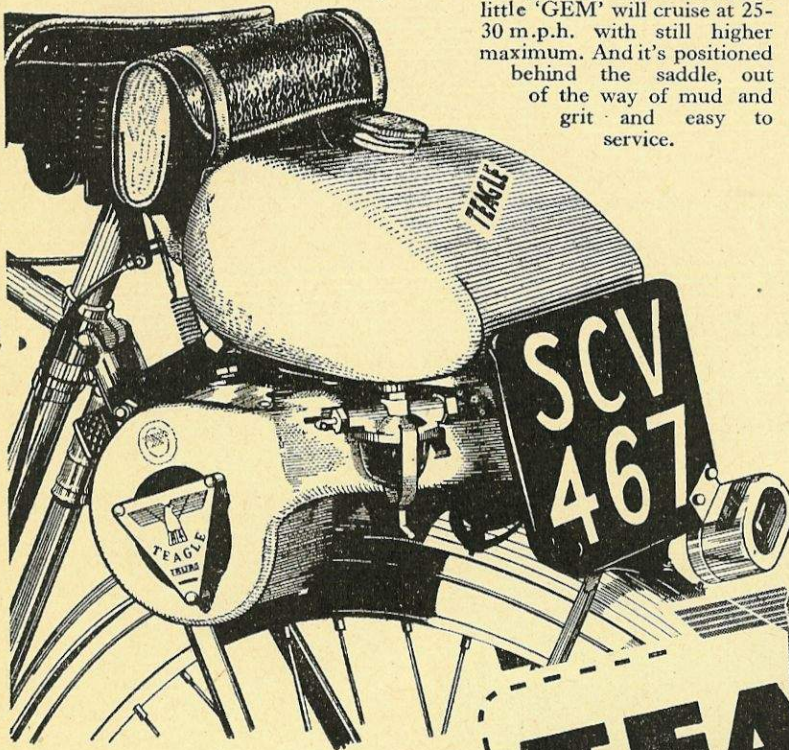
to be continued.

The **GEM** of cyclemotors

THE MOST ADVANCED AND SIMPLEST TWO-STROKE MADE

Make way for a TEAGLE! There's **NOTHING** on the road to-day to compare for Power Performance—or price. Superbly manufactured in the Teagle tradition of fine craftsmanship—tough, simple and thoroughly reliable.

Yet if it's speed you want, this little 'GEM' will cruise at 25-30 m.p.h. with still higher maximum. And it's positioned behind the saddle, out of the way of mud and grit and easy to service.



- ★ *Very powerful 49 c.c. engine, blower cooled—preventing overheating in all weathers.*
- ★ *Very economical in relation to power output—160-220 m.p.g. according to conditions. $\frac{3}{4}$ gallon tank.*
- ★ *Vibrationless. Entire unit insulated from the cycle by rubber mountings.*
- ★ *Mono-block casting of Cylinder, Crankcase and Outrigger Bearing Bracket ensures exceptional Strength*
- ★ *Service Exchange Engines available through the post, by return. Only £4 (When not covered by Guarantee)*

£17 With Blower Cooling, Tools, Number Plates, Licence Holder. With Dynamo Lighting Coils, 10/- extra

See your Cycle or Motor Agent—or write to manufacturers for full details.

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TEAGLE
cyclemotor

**LEADS THE WORLD IN
LIGHTWEIGHT POWER**

BEFORE the days of universal radio it was commonplace to hear motorcyclists and motorists who claimed to be good amateur, or even professional, mechanics say quite bluntly that they knew nothing about the ignition systems of their machines. The verdict "Your mag's gone" from the man in the garage was accepted in blind, if depressed, faith when any minor electrical fault arose and most drivers just paid the bill and left it at that.

Now that every schoolboy can make his own wireless set and every modern housewife fixes her own fuses, electricity is not the hidden mystery that it used to be and the effects on the motoring world are that we spend less money on repairs than we did, when the occasion arises, and also that we get less reliability from our electrical equipment. That rosy glow of memory that comes from recollections of our lost youth always takes the line that the magnetos and their ancillary equipment of olden days ran for years and years without trouble and so they did. But one of the reasons for it was that they were not messed around so much as ours are now.

ON SPARKS

or *The Myst*

It is a fact that the principle of letting well alone does work well in practice with electrical equipment. But it can be carried to illogical conclusions very easily and it is ridiculous but true that, according to A.A. and R.A.C. statistics, most of the troubles that bring motorists to standstills on the roads are electrical and that in most of those cases the defect is a minor one that can be put right on the spot by the man who knows how. What

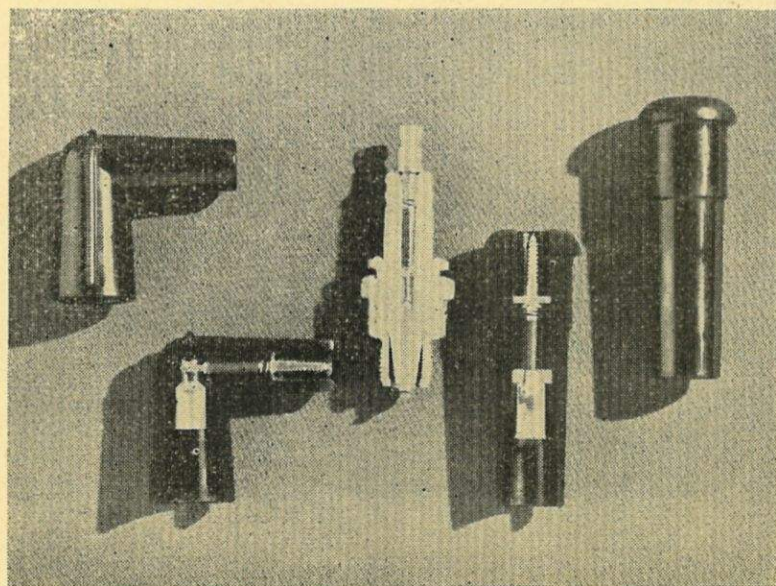
is needed as a line of guidance for good maintenance and satisfactory performance from these vital pieces of equipment is a scale of enough knowledge to diagnose trouble plus enough well inculcated fear to avoid creating more. For cycle-motorists this should not be too difficult. Let us see what is required.

Flywheel Magnetos

Most of our modern cyclemotors derive their ignition and lighting current from flywheel magnetos which are simply small alternating current generators with separate coils built in for the provision of high tension current for the sparking plugs and controlled low tension current for the lighting circuits. These instruments are marvels of compact design and have the great advantage of being mounted direct on the crankshaft of the engine so that there are no chains or gears needed to drive them.

The rotating part, the flywheel itself, contains the magnets, while the stator, coils, condenser and contact breaker are fixed to the stationary back plate. Except for contact-breaker points themselves there is nothing to wear out and consequently nothing to adjust. When a flywheel magneto runs into trouble it is usually a slow falling off in performance due to weakening of a specific component. Reluctance to start the engine, poor revs. and uneven firing will make themselves felt as warnings of attention needed long before the point of complete breakdown occurs. So if your machine stops suddenly on the road it is unlikely

★ ————— ★
Suppressors — Right angle on the left, Straight on the right and in the centre a K.L.G. plug with suppressor built in.



AND LIGHTS

tery of the missing Current

that "the mag's gone". More probably it is some easily remedied detail in the ignition system that can be found by a simple drill of investigation.

This is also true of the lighting part of the circuit. If the engine continues to run, the instrument is continuing to generate current and a sudden failure of lights most probably means a wire lead has come adrift or a bulb blown.

One British engine has only the generator in its simplest form as its primary unit, the coil and contact breaker being mounted separately. This has the advantage of making the original unit more compact still and leaving the coil and contact breaker in more accessible positions. Electrically speaking there is no difference in this system, and the principles of trouble diagnosis and rectification remain the same as with the flywheel magneto in its more usual form.

Apart from the magneto, the ignition system consists of a sparking plug and a high tension lead. It is now a legal requirement that an interference suppressor must be incorporated in this high tension system so that your neighbours can see their television pictures without a lot of horizontal streaks of lightning indicating the passing of your machine. Because the average sparking plug looks such a simple and inanimate object it is apt either to be taken for granted or else rather roughly handled, according to the temperament of the user, but actually the plug is quite a cleverly constructed electrical device that pays for proper handling and the right kind of attention.

So far as the lighting side is

concerned it need only be said that several well-known makers manufacture, and advertise, lighting equipment specially for cyclemotorists' needs and that the responsibility of the rider is limited to keeping things clean, using the right bulbs for the job, and seeing that exposed wires do not kink or chafe.

Looking for Trouble

The drill for diagnosis of electrical troubles, either on the road or in the garage, is simply to check *one thing at a time* and test after each action, while the golden rule, neglect of which has made many clever people look very silly, is NEVER NEGLECT THE OBVIOUS.

For instance, if your engine suddenly stops dead on the road, first make sure that there is petrol in the tank and that the tap is turned on. Then, when it comes to the electrical equipment, see that the high tension lead has not just fallen off the plug terminal or pulled out of the suppressor. It is amazing how much time can be wasted by forgetting the slogan, NEVER FORGET THE OBVIOUS.

Given that externally everything appears to be in its proper place, the first thing to check is the plug itself. Take it out and look at it. If there is a small piece of carbon bridging the gap between the points that is the cause of the stoppage and nothing else need be touched. Remove the carbon gently, replace the plug, and pedal away. If instead of the lump of carbon you see a lot of little "whiskers" apparently growing out of the

electrode, the plug should be changed and the whiskered one taken to a garage for sandblasting. If no spare is available you can scrape off the whiskers and probably restart but the plug really needs a blitz in sand to clean it properly. If you find wet petrol or oil on the plug points it has to be cleaned off thoroughly, but it probably means that the plug was not to blame for the stoppage and the wetness is the result of your pedalling on after the sparks had ceased. The simplest thing in any case of stoppage is simply to change the plug for a clean one properly adjusted—if you have it with you.

If the plug is clean and in good order and the high tension lead undamaged and connected properly, the magneto must now be tested for life. With the plug on its lead and resting on the cylinder or any other part of the unit and the terminal clear of the metal itself, turn the magneto over smartly and watch to see if there is a spark at plug points. The easiest way to do this on most machines is to remove the tin cover over the flywheel and turn the magneto by hand *in its normal direction of rotation*. The flywheel will appear to turn in jerks under your hand and it will take a sharp movement to produce a full-turn spin. If, as often happens, the plug persists in falling off wherever you put it, or the points cannot be got into a visible position, you may dispense with the plug and hold the high tension lead itself by the rubber part so that the metal terminal is about $\frac{1}{8}$ -in. away from the edge of the backplate of the flywheel. Watch for the spark to jump there.

Do not be afraid of it. If you touch the terminal you will feel a shock that may make you jump but it won't really hurt you and you will at least jump to the conclusion that the magneto *is* sparking alright.

Always repeat this turning test two or three times as the magneto may be sparking sometimes and not at others. If this is the case the

trouble is almost certainly due to the contact-breaker points sticking.

On most machines the only way to get at the points is by assuming an incredibly uncomfortable position and peering through one of the three gaps in the face of the flywheel whilst wearing a miniature miner's lamp attached to the forehead. After some practice, however, it becomes possible to see the movement of the points by rocking the flywheel back and forth and it can be taken that if the points are not visibly fouled or wet and are clearly opening and shutting as you rock the flywheel then they are not the cause of your troubles.

If they are not opening and shutting, the gap must be adjusted by slacking off the locking screw on the back of the contact-breaker and moving the setting screw very gently until the gap is correct. For most cyclemotors this is about .018 (eighteen thou.) but they are not so fussy that a gauge is necessary to get you home.

The ordinary rider should not try to go beyond this point. If the magneto is dry, the points opening correctly, the H.T. lead sound and the plug clean and there is still no spark, then all you can do is chuck it in and be thankful that cyclemotors also have pedals. A further consolation is that parts and service are quite reasonably cheap even in these days.

Lighting

Perhaps the only way to avoid lighting troubles is to make a practice of testing the lamps in daylight every day as there is nothing hard about discovering the cause of any probable trouble in daylight and nothing easy about it in the dark. Here again the rule is NEVER NEGLECT THE OBVIOUS and it is the simple, silly little things that give most trouble.

Naturally the first things to be checked are the bulbs. If by any chance your auxiliary battery is not dead flat the parking light

will act as a check on the circuit, but by far the most common cause of failure in cyclemotor lighting systems is the earth return system and this is best cured by prevention: proper maintenance.

The earth return system is simply the use of the frame of the machine to act as one side of the circuits and so save the need for twin wires and double contacts at each terminal point. On a bicycle with an attachment engine this means that the earth circuit has to include the mounting of the lamps to the cycle, the rear mudguard to the frame and the rear number plate to the mudguard, this in addition to the mounting of the engine on the cycle which may be through shock-absorbing rubber pads or bushes.

Each of these points must be clean, bright and dry when assembled and should be maintained so by the application of a protective coating *after* assembly. Many experienced people prefer to cut out

Continued on page 243

This is the Club for the Motor-Assisted Cyclist



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LIGHTING

A TIMELY REMINDER

Because of the higher output generated by a cycle dynamo set when used with a cyclemotor, ordinary bulbs quickly burn out. Special bulbs must therefore be fitted.

Unless this has been done to your set you should make sure that the right bulbs for your particular type of cyclemotor are fitted before winter sets in.

Special Vitality Bulbs are made for use with all types and your dealer is the best person to advise you as to which Vitality Bulbs you need. Ask specially for Vitality—remember the same set of Vitality Bulbs lasted from start to finish of Peter Lee-Warner's seven months ride round the world.

Note Vitality bulbs are unique and guaranteed. If your dealer does not keep the Vitality cyclemotor range, write us for the name of the nearest stockist—Vitality Bulbs Ltd., 2 Neville Place, London, N.22.

READERS EXPERIENCE

"WINGED WHEEL"

I notice that very little has been written to date on the subject of the *Winged Wheel* by B.S.A.—possibly because they have not yet been retailed in any quantity. So perhaps a few words on this model would not be amiss.

I should state that I'm not a newcomer to the road, in fact I've progressed from considerably more than four wheels up to two—with a peppercot engine. When the time came for my choice I contacted *Power and Pedal* by phone, explained my interest in the B.S.A. and asked for comment. With their usual friendly interest the publishers dispatched a back number at no cost which gave me the road test of the *Winged Wheel*. Obviously they were not impressed with this unit. So I bought one.

Well now, starting with the disadvantages, here are my findings after six months' running.

I purchased the unit and fitted it myself. Before running I found—The petrol float had been inserted upside down in the chamber, the contact breaker gap measured approx. $\frac{1}{2}$ -in. The feed lead from the lighting coil had not been soldered to the terminal and that the inlet nipple of the carburettor petrol feed was incapable of adequately taking the flexible pipe—petrol fairly gushed out.

After running I found that the free wheel assembly had been mal-adjusted before leaving the works, had seized and blown up. Guarantee claim after one days' use! A most impressive start, indicative I think of very loose inspection at the sub and main assembly stages of production.

Life settled down after this and my other complaints are directed mainly at the designers. Firstly,

the normal engine noise is terrible. Whilst the silencing as such is fairly effective the carburettor bark is most distracting. I proved this by "boxing" the carb. and the noise reduction was most surprising. The alloy transmission-casing, too, actually seems to develop noise instead of reducing it. This noise problem has me quite worried and I'm solidly behind *Power and Pedal* in their campaign against it.

Secondly my unit has a decided tendency towards four-stroking no matter how I tinker or vary the brand of fuel. I suspect the *Wipac* Ignition Unit here—it occurs to me that it may not be capable of delivering a quality spark as quickly as demanded by an engine reaching peak revs. of 6,000—higher than most other units fitted with identical ignition units. I notice that the latest units out of Waverley Works are now fitted with a British *Miller* ignition unit. I wonder if B.S.A.'s have found the same trouble?

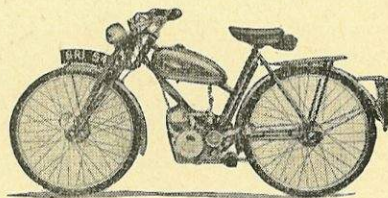
On the point of accessibility I'll say no more than that I don't think this model any more accessible for maintenance than the average, possibly less—unless one has tools of the weirdest type and shape.

After this long groan one would not think there were anything left to praise. But there is. Being modest I won't go into diatribes over them. Shortly but sweetly they are:—Ease of fitting—surely the quickest unit to fit. Petrol consumption—a genuine 200 per. Transmission—solid and sweet, no chains and completely enclosed. Clutch—no acrobatics to disengage and no effort to ride dead. (I frequently do so being rather forgetful in matter of petrol). Rear brake—wonderfully smooth and sure, I never use my front brake.

Choke—fitted to handlebar. No acrobatics here either. Power—quickly developed and of the non-fade variety. Decoking—does a very real 2400 (as claimed). None of this every 600 miles skylark. Service—the very best of all—courteous, prompt, efficient and cheap.

Summing up, I should suggest that whilst B.S.A.'s may not have put all the knowhow and experience that they undoubtedly have at their command into this job, they certainly have turned out a very attractive, reliable and soundly engineered unit at a reasonable price. The *Winged Wheel* may not outshine all the other makes on the market, but I contend that it is equally as good—good enough to hold it's own against all, including it's type competitor. After all, has any model yet reached the perfection demanded by the average rider?

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NEWS FROM HOLLAND

Amsterdam Figures

I mentioned in previous reports that at present there are in Holland (pop. 10,000,000) 310,000 cyclemotors on the roads, and that this figure is expected to rise to 1 million by the year 1960. As a cyclemotorist in Holland you need pass no exam, you need not register your vehicle, you need not even take out a third-party insurance—all you do is get a tax-form and pay about £1:8:0 road tax.

This may seem an ideal state of things to many readers but before carrying comparisons any further let us get an objective picture of the traffic situation here in special relation to cyclemotors.

Inspector A. N. Koppejan, head of the Education and Information Division of the Amsterdam Police, told me that of the 14,556 traffic accidents in Amsterdam during 1953 at least 90% were due to some road user infringing traffic regulations. 499 accidents were caused by mistakes made by cyclemotorists and 4,449 by motorists. But in 1952 cyclemotorists caused only 342 accidents. If we consider that 24,119 Amsterdammers now own cyclemotors whereas in 1952 this figure was 6000 less, the rise does not seem too great. Cars in Amsterdam total 21,844—the proportion of car drivers causing accidents

Throughout the town are flags showing the "danger triangle."

These are lowered to half-mast for the day when a fatal accident occurs in Amsterdam.



seems therefore very high indeed. Incidentally, all these figures come from the Municipal Bureau of Statistics.

This Bureau also details the mistakes made by road users—there are ten pages of closely printed figures so let me select only a few more. Amongst the 499 cyclemotorists causing accidents, 275 were at fault

through not giving priority where Dutch traffic regulations require it. To understand this one must know that in Holland all traffic is divided into slow and fast traffic, and that cyclemotors are classed as "slow". All slow traffic has to give priority to fast traffic except in certain special cases. Therefore, if I travel by car, I have to give priority at a corner

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but we don't know of any other that has ALL these advantages

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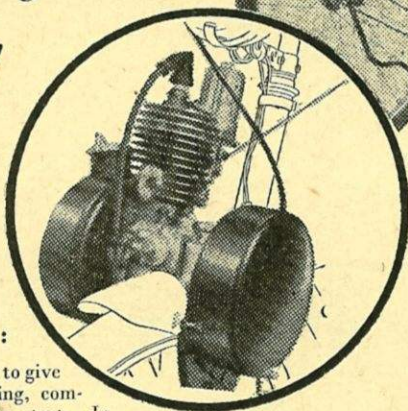
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— and here's why:

It takes a *complete machine* to give you proper shock absorbing, comfort and balance from the start. In addition to this, the VeloSolex engine has a *matched roller drive* — designed, built and matched with the cycle to cut out loss of power or undue tyre wear. And roller drive, being so utterly simple and free from chains, sprockets, pinions or gears to go out of adjustment or wear out, ensures for your VeloSolex the highest standard of reliability and the greatest possible length of life.

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name of nearest stockist. 6

to all cars and motor-cycles coming from the right whereas a cycle-motorist will have to let me pass first, never mind what his speed may be.

Many more accidents are caused by cyclemotorists turning off suddenly without looking to their rear and/or giving proper warning. In the Inspector's words: "These people sail along oblivious of their speed and often, due to the noise of their engine, forget about vehicles coming up behind them. Also they corner too fast and we often have people who may not have handled a bicycle for years, mounting a cycle-motor and dashing into traffic without knowledge and ability required to control the machine".

The most important point stressed by Mr. Koppejan is that cycle-motors are not to be distinguished at a distance from cyclists. He feels they should be given a distinctive colour for their machine or something that makes them immediately stand out from other traffic. "You think it is a cyclist and suddenly it comes at you at about 45 k.p.h." is the not unjustified complaint most heard from other road users.

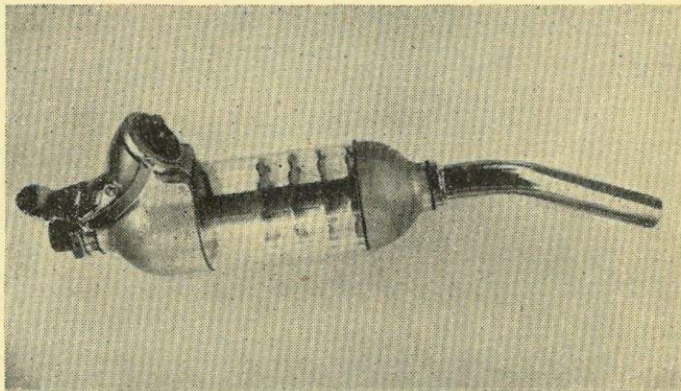
All this is interesting since Amsterdam has the highest accident rate in Holland and perhaps Western Europe, though fatal and serious accidents are fewer than at Rotterdam and The Hague.

STOP: when you see this

FIRST practical intimation that there is recognition of the ever increasing demand for the serving of a mixture of motor oil and fuel for use in two-stroke engines came to us in the shape of an invitation from the Esso Petroleum Company to attend a demonstration of a new petrol/oil mixing device at a west London filling station recently.

and the required quantity of oil is poured into the chamber at the supply end of the cylinder. The lid snaps down and the petrol is then fed through in the normal manner taking up and thoroughly mixing the oil on the way.

The device will fit *Avery Hardoll*, *Wayne, Beck* and *Gilbarco* pumps without modification and is fully



C.P.D. Petrol mixer pump attachment.

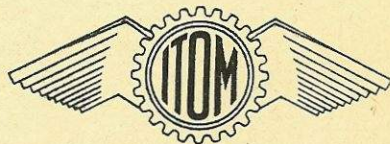
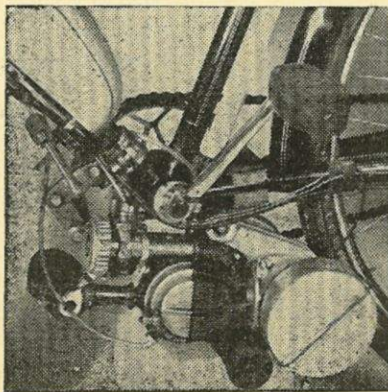
Called the CPD Petrol and oil mixer, the instrument is designed to be attached to existing standard pump hoses, and consists of a transparent cylinder containing baffles fitted round a slotted feed pipe. To serve the mixture the quick action lid is opened with the assembly still on its bracket on the pump

guaranteed by the makers, Birshall, Ltd.

CROW'S NEST WORKS,
ACKWORTH ROAD,
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Its price is £5. 12s. 6d. and should soon pay for itself in the custom of two-stroke owners.

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EITHER on the road or in the shopwindow of a discriminating agent. Its great performance, neat appearance, light weight and clever design must impress you.

48 c.c. bracket fitting with foot-operated engaging gear, the ITOM "TOURIST" costs only

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CLUB NEWS

NOTTINGHAM V.C.A.

Sec. R. H. PRATLEY,
62 FLAMSTEAD ROAD,
STRELLEY,
NOTTINGHAM.

New Runs Captain and Vice-Captain just elected, R. Richardson and L. Legrand.

In view of the M.O.T. implied suggestions as to cyclemotors being dangerous, one of the duties of the Captain will be to keep a record of members' aggregate mileage. This is the Club's contribution to statistical proof that the machines are safe.

The MIDSUMMER TRIAL was run in pouring rain over a 90 mile course and only one competitor managed it without being 20 minutes or more late at any check. It is remarkable that 10 out of 12 riders completed the course.

RUNS PROGRAMME

- 3rd. Sept. Monthly Meeting
8.0 pm..
- 5th Sept. Trent Bridge 10 a.m.
- 12th Sept. Daybrook Square
10.0 a.m.
- 19th Sept. P.D.S.A. Dun-
kirk 10.0 a.m.
- 26th Sept. Bobbers Mill
Bridge 10.0 a.m.

THE HALF-HUNDRED CLUB

A new club has been formed at present in the London area but with ideas of expansion later. It is proposed that activities shall go on all the year round and the plans are for a club run every week and a sporting and/or social event every month. Communications should be addressed to the Captain.

MR DEREK SPRIGGS,
50 ADELAIDE ROAD, N.W.3

Owing to the consistent "aquatic" climate we are being subjected to, members failed to invade the 573 mile Lancashire *via* Peaks tour over the August Holidays.

Friday night found but three volunteers, and they would have fared better had they turned up with out-

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board motors! Sunday, 1st Aug., however, brought forth a little compensation when a miniature Isle of Man T.T. course was discovered. It has everything and although it is in the heart of Lancashire it is being kept well in mind. The Half-Hundred "Club 50" takes place on Aug. 29th on an enclosed 3 mile circuit. As silencers are optional I doubt very much if they will be worn! Let you know next month.

PROGRAMME FOR SEPTEMBER

- 5th Littlehampton
- 12th Hastings
- 19th Cambridge
- 26th Petersfield *via* Guildford

All Club Runs start Marble Arch
9 a.m.

SPARKS AND LIGHTS

—Continued from page 238.

the earth return at the tail end and bring a wire from the inside of the body of the rear lamp back to the metal of the engine itself.

If the lamps fail on the road, first check the bulbs, then see that the lead from the engine to the headlamp is unbroken. Next short the other headlamp terminal to the lamp bracket or handlebars with an odd piece of wire or other metal. If the front lamp then lights up the fault is in the more common place, the tail lamp or earth return circuit. Follow that lead back and see that the wire is not chafed, broken or rusted at a point of contact. Take out the rear lamp bulb and hold the end of the lead against the body of it then, with the engine running, touch the centre contact of the bulb against the various bits of bare metal on the machine. If the bulb lights up say at the seat pillar bolt but not on the mudguard, then the earth return fault is at the point of contact between the guard and the frame. By a process of elimination the fault will be found.

Whatever you do, DON'T ride home without lights. Apart from the detail of illegality it is dangerous.

CLUB NEWS

LONDON M.A.C. SECTION B.T.S.C.

According to the latest issue of *The Independent*, magazine of the Club, the entire committee of the Motor-Assisted Cycle Section has resigned. We have no information regarding future plans except that the runs programme as published gives September 5th as the date for the annual SCOTT TOURING TRIAL, START 10.0 a.m. Ace Service Station, North Circular Road, Stonebridge, Wembley.



Freddie Bamberger with resplendent badge

THE ROVER (MANCHESTER) FELLOWSHIP

Sec. : Mr. G. M. BROWN,
15 KEPPAL ROAD,
MANCHESTER, 21.

Runs for September :

- 12th. Chester via Northwich.
- 26th. Cheshire Roundabout.

POWER PAK CLUB IN HULL

E. N. CHAPMAN, a Hull bus driver, finds that he has plenty of work on his hands these days. He bought a *Power Pak*, then had an idea. Why not form an owners' club in this area and get out for some runs in the country?

After a couple of weeks of wild

activity Mr. Chapman contacted over a hundred owners. Now he has a lively *Power Pak* Riders Club buzzing round his ears.

At the first General Meeting Mr. Norris Walker, local cycle dealer was elected Chairman. It was explained that he had been a keen trials rider in his time and was the holder of several trophies. His wisdom and experience is going to be of great use to the club. Mr. Reg. Thompson was elected Vice-Chairman and Technical Adviser.

After that Mr. Chapman started looking around for a President. He approached Mr. Freddie Bamberger who is playing at the Palace Theatre, Hull.

The ceremony took place on the

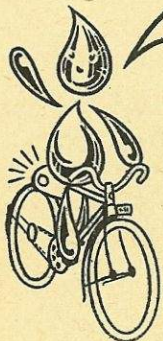
stage, during the show. Freddie was presented with his badge of office. It was a resplendent affair that looked like a Maharajah's jewel. Pam, his partner, was made a life member and official club pin-up and was given a magnificent bouquet.

Freddie was so tickled by all this that he worked some lines about the club into his script in a later show, which delighted members of the Club who were in the audience.

Mr. Chapman reports that the weather in Hull these days is just like anywhere else. He and his committee stare anxiously at the sky and opine that if summer falls on a Sunday this year they can have a rally.

Insist on Colloidal Cyclemotor Filtrate

says Fluid Phil



COLLOIDAL CYCLEMOTOR "FILTRATE" OIL, containing Acheson Colloidal Graphite, is officially recommended for MINIMOTORS, and is first choice in their handbook. (Use 1 part to 32 parts of petrol). In Engines of 100 c.c. and over, use COLLOIDAL 2 STROKE "FILTRATE" OIL (Use 1 part to 24 parts of petrol).

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Another famous **FILTRATE** Product

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Flashes

PPRICE of the *B.S.A. Winged Wheel* was increased as from August 1st from £25 to 26. 5s. 0d. The price of the complete *Winged Wheel* bicycle also goes up by the same amount to £43. 9s. 6d. (inc. P.T.)

This frame set or the complete cycle with motor unit are now also available under *New Hudson* and *Sunbeam* trade marks.



LAATEST M.O.T. figures shew 21,421 new cyclemotors registered in Great Britain in the first four months of this year. This is the highest figure for any class of motorcycles and represents 30 per cent. of the total. 64 of them had sidecars.



ESSO have issued four new foreign language phrase books for the convenience of motorists travelling on the continent. In French, German, Italian and Spanish, each booklet contains a map of the country, a page of international road signs, some hints on food and wines, a list of useful names from Briefs to Razor blades and 119 valuable phrases.

The booklets cost 6d. each from Esso dealers throughout the U.K.



VACUUM OIL Co., are offering a neat wallet containing maps of the United Kingdom in nine sections. Accent is on the M.O.T. road numbers and the maps are mainly for those covering long distances by main roads. Particularly useful are the street plans of main towns.

The maps are rather unusually printed white on black, which, it is claimed, makes them easier to read at night. The maps cost 6d. each at Mobiloil and Mobilgas stations.



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THE Federation Internationale de l'Automobile (F.I.A.) has agreed to assist through its own local clubs and agencies throughout the world any motorcyclist touring outside his own country who is a member of a club affiliated to the Auto-Cycle Union and who carries with him the official Introduction Card of the Federation Internationale Motocycliste (F.I.M.).

These cards are printed in French and English together with a Booklet, of suitable size for the pocket, giving the names and addresses of all the organisations throughout the world that are connected with the F.I.A. The card is of little use without the Booklet.

The cost of the cards and booklets is one shilling the two (card and booklet).

Applications from Club Secretaries should be forwarded to the Secretary, Auto-Cycle Union, 83 Pall Mall, London, S.W.1.



SHELL have just issued a new and enlarged edition of their book containing lists, under countries, of selected Shell Service stations in Europe where in addition to the usual products, a complete Shelllubrication service can be obtained. The countries included are Austria, Belgium, Denmark, France, Germany, Italy, Luxembourg, Netherlands, Norway, Sweden, and Switzerland.

Motorists who are interested can obtain a copy free of charge by sending a postcard to Touring Service, Shell-Mex and B.P. Ltd., Shell-Mex House, Strand, London, W.C.2.



APPRECIATION

Readers Mr. and Mrs. D. V. Squires of Christchurch, recommend,

Messrs. HONEYBUN,
PUREWELL, CHRISTCHURCH,
Hants.

for most efficient service at all times.

They also think the A.A. offer good value for the cyclemotorists' money.

REVIEWS

The Book of the Cyclomotor

by Ferrers Leigh, Pitman, 6/-

ACCORDING to the publisher's blurb in the dust jacket this 108-page booklet "... tells how to choose, run and service clip-on motors and lightweight autocycles" and it certainly goes a long way towards fulfilment of the claim.

There is an introductory chapter on cyclomotors in general, chapters on the law, safety hints, maintenance, *Amal* carburettors and *Wico-Pacy* magnetos. Then follow seventeen chapters on the different cyclomotors available. The style is readable, if somewhat wordy and the material will be of interest to all prospective cyclomotorists. The technical material is all authoritative and the illustrations very clear and easy to follow. It may, however, be a trifle worrisome to the absolute novice by suggesting greater complication than is actually the case.

We understand that the book has been some time in the course of preparation and this probably accounts for the fact that some of the specific chapters on machines are already out of date, two at least being now off the market and one other not available in the form shown, but the biggest weakness of the book, and of all the cyclomotor handbooks so far produced, is that they are written by motorcycling scribes without the background experience of cyclomotors necessary for the stuff to be really useful. For example, opinions on tyre pressures are given without reference to tyres and tyre sizes and remain just—opinions.

For the same reasons the book is of little help in choosing the cyclomotor for individual requirements, as there is no indication of the performances of the various units and no practical comparison between attachment units and autocycles. However, in waiting for the day when there is a book on cyclomotors for cyclomotorists and

by cyclomotorists, this is a useful addition to the bookshelves and a practical help to the new rider.

Camera Tips for Everyone

Fountain Press 1/6

ALMOST everyone has owned a camera at some time of his life from schooldays onwards and almost everyone thinks occasionally that he would like to take up the hobby again. This compact and readable little booklet may do much to turn the thought into deed and dig out the old camera or buy a new one. There is nothing highfalutin about it and it covers all types from the simplest box camera, for which the author has some words of praise, to the expensive miniature and it gives sensible advice in compact and readable form.

Every other page of its 28 pages of text matter is an illustration, and a very attractive set of studies too. An excellent start, or re-start, to photography.



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THE BOOK OF THE CYCLEMOTOR

By
FERRERS LEIGH

Every owner of a cyclomotor should have this new book close at hand. It contains descriptions of over 17 different makes of clip-on motors and Lightweight autocycles, and, in addition forms a complete practical maintenance manual. The book is profusely illustrated with photographs and clear line drawings.

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THE MANY Cyclomaster owners who have asked for means to open and close their choke without dismounting can now purchase a unit designed by engineers, tested and approved by Cyclomaster, from your usual agent or direct from the manufacturer at 6s.6d. post free — WEST ALLOY DIE CASTINGS LTD., Oldfields Trading Estate, Oldfields Road, SUTTON, SURREY.

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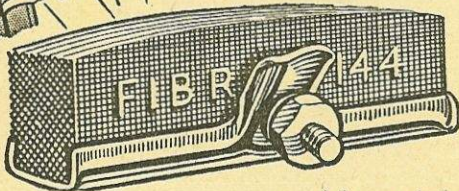
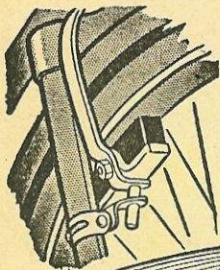
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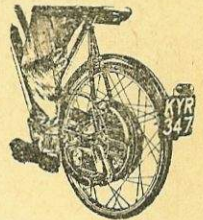
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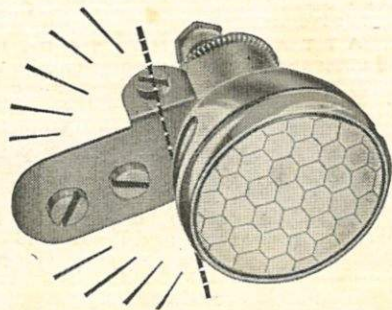
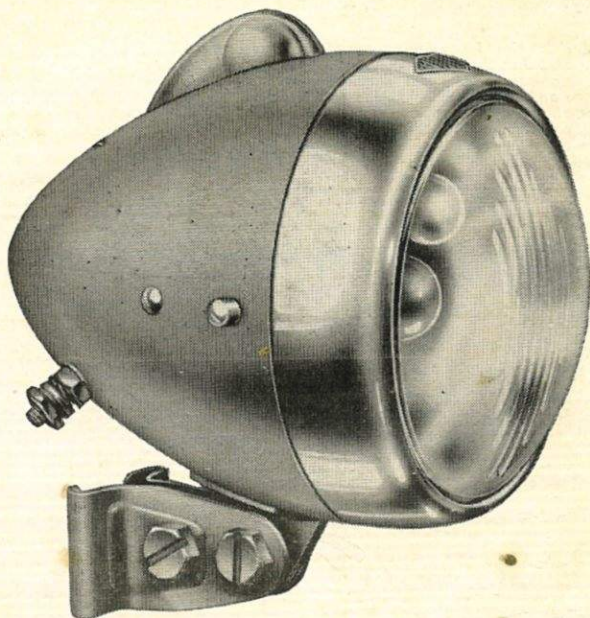
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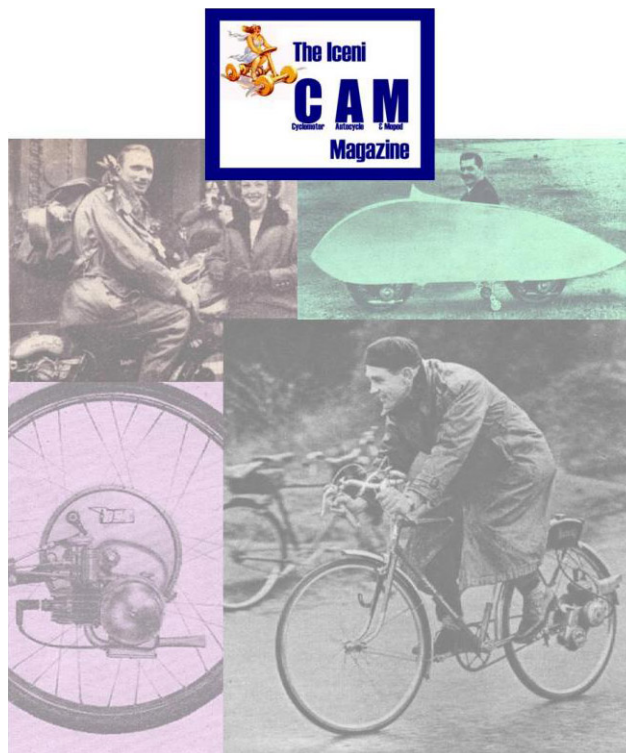


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