

MARCH, 1954

MONTHLY 4^D

POWER & PEDAL

The Journal of the Cyclemotor



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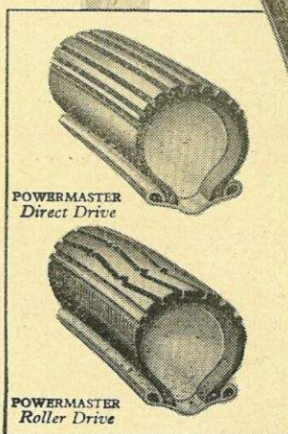


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POWER & PEDAL

THE JOURNAL OF THE CYCLEMOTOR

Editor: FRANK L. FARR

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The Case for the Clip-on

The almost complete eclipse of the roadster cycle and attachment engine in France and powerful similar trends in most other continental countries where motor-assisted cycling has become established have tended to suggest that this development is an immediate certainty in Britain. To some extent the interest this journal has displayed for the built-for-the-job machine may have supported the idea and created the impression that we also believe the day of the attachment is already at an end.

This, as a matter of fact, is not our view and there are a number of factors in the situation in this country which almost guarantee the continuance and expansion of the attachment engine market for several years ahead. This, however, does not mean simply that Britain will trail behind other countries over the same ground.

In the first place there are so many cycles in this country that are pure utility machines, that is used as means of transport whether for business or pleasure at the end of the journey, that they represent an enormous potential market in themselves, a market big enough to swallow Britain's entire output of engines for years to come. Few of the owners of these cycles will sell them to buy new autocycles without first having tried motor-

assistance by way of the attachment engine.

Even then, if the service of the unit has been good, it may still be that some riders will prefer to carry on with more or less familiar pedal cycles and separate power units, a trend that is encouraged for good or evil by the Purchase Tax loading against the one-piece machine.

Another factor operating in favour of the retention of the pedal cycle as a basic machine is the prejudice in this country against the motor cycle as being noisy, heavy and dangerous. The fact that the motorcycle need not be any of these things does not outweigh the fact that some are all three and neither manufacturers nor riders seem to care a damn. If, however, the attachment cyclemotor is to profit instead of losing by this public attitude it must be a good motor that is never noisy, heavy or dangerous itself.

A few months ago a leading industrialist approached us for advice on the subject of launching a unit on the British market. We offered him the easily remembered code of Three/Twenties, twenty pounds weight, twenty pounds cost and twenty miles per hour as a reasonable target. There is no reason why such a unit should not

be on the market now, as the production of it offers no difficulties. Some get near it but so far as we know none quite makes the grade with all three qualifications yet.

Several units now available weigh well under 20lbs. and several others cost less than £20, but these all set their effective cruising speeds too high for safety and comfort on normal pedal cycles and, as a natural corollary, usually lack pulling power where it is most needed, at low speeds.

Given the right unit that combines light weight with useful climbing power and quiet, vibrationless running at a reasonable price the potential market of millions that lies to hand in modern industrialised Britain will certainly last until all the present cycles are worn out and the new race of experienced motor-assisted cyclists thus created moves on to the new *British* light autocycles that will by then have appeared. If the attachment motors are not good enough for this, however, the competition of the excellent continental autocycles will make itself felt and the home motorcycle industry will start making these, or something like them, to bolster up its own falling production and sales figures. There is a lot in favour of the "clip-on" but it will have to earn its place.

COMMENT

by

CLIP-ON

DURING the young Ice Age we suffered recently instead of weather I was quite surprised at the number of cyclist-motorists who carried on riding (Frankly, I didn't). I noted also that a high percentage of these hardy souls were exposing grey or balding heads to the icy blasts and started wondering once again whether there is any solution to the headgear problem for those of us who like to look like normal, civilised townsmen when in the saddle.

The cloth cap and the huntin' man's bowler would serve no doubt, but neither is quite the thing for most of us, and the ordinary soft felt will not stay put on the ordinary head in a wind, apart from the silly look one wears with the front brim permanently turned up by the breeze of passage. Personally I never wear a hat of any sort which is perhaps one of the reasons why I don't ride in very cold weather, but I remember when army discipline forced me to obey uniform regulations that I found the officer's S.D. cap almost ideal for motorcycling. It had a peak against dazzle and rain, the padding in the top afforded quite reasonable protection even when I occasionally fell off, and it stayed put in any circumstances. Is it beyond the wit of the hatters to design a felt with a stiffened brim and reinforced crown to provide just these characteristics.

Tyre Pressures

We have gone a long way already since, only a year ago, *Power and*

Pedal first publicly challenged the 60 lb. per squinch tyre pressure heresy for cyclist-motorists. That particular firm has now gone out of the business and I was pleased to note that the latest newcomer to the tyre-for-the-job market is quoting 35 lbs. as his recommended pressure in the 1½ in. section for roller drives.

This is only about 20 per cent. high and will give a reasonable ride under normal load without breaking spokes or the rider's back. The French, who have much more experience than we have in cyclist-motor practice and also worse roads, have really got down to realities over this matter and I noted with satisfaction that the recommended pressures for the latest machine we tested were 14 lbs. front and 17 lbs. rear, this with a centrally disposed engine.

This, of course, is for 2in. tyres and chain drive, a point not to overlook. Very few people take the trouble to work out the air capacity of their tubes, especially when πr^2 is a complicated vulgar fraction, but it is a fact that a two inch tyre has just about double the air capacity of the popular 1½ in. "oversize" that is the best wear for rollers, so allowance should be made for this in computing requirements.

Recruiting

How do people become cyclist-motorists? The question is raised by a letter from a reader who states that he was the only rider in his

office a little over a year ago but found himself closely questioned about the performance of his machine by his colleagues who then took the plunge one by one until now there are twelve of them!

This may be an exceptional case in numbers but I have no doubt at all myself that most of the machines sold in this country to date have been sold on personal recommendation rather than by trade activities. Selling methods are still far from good and the best salesmen in Britain to-day are the satisfied riders already on the road. If the makers and agents look after these people they will get a lot more business from newcomers by personal contact.

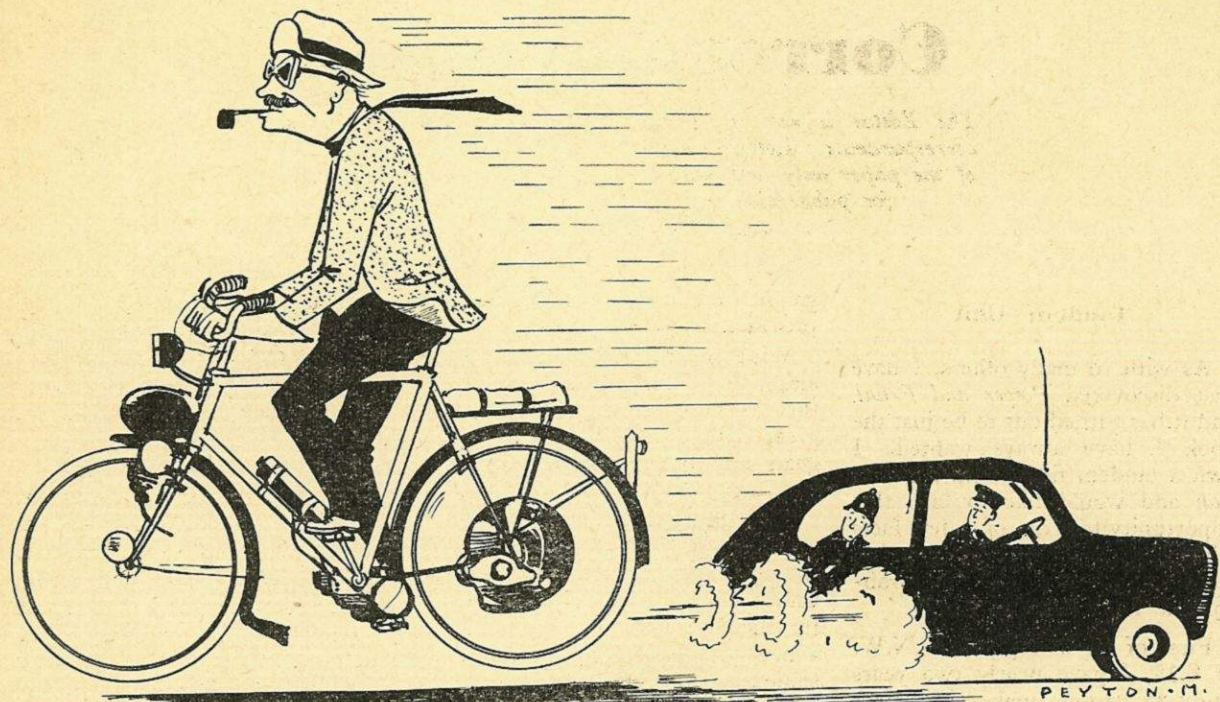
This same reader also asks "What about our own society and badge? The A.A. doesn't want us; the A.C.U. look on us as a nuisance; the Cyclists' unions bar us . . . Please press for recognition from these bodies and you will be doing us all a real service"

Frankly I don't think this criticism is quite fair except so far as the head-in-the-sand cycling organisations are concerned. Personally I have found my own motoring organisation gives me the same courteous and efficient service with my cyclist-motor as they do with the car, and their phone boxes, patrols and breakdown services are there the same for all of us. The A.C.U. of course, exists to control motor cycle sport and rightly sticks to its job.

A number of readers have suggested the formation of a *Power and Pedal* Club, but none has as yet explained just what form this organisation would take and what it could do for the individual rider whose subs would have to pay for it. Can we have some concrete ideas on the subject from readers?

Road Safety Tips

A London bus driver, first winner of the national safety award for 53 years continuous accident-free



"He read in 'Power and Pedal' that a cyclemotor would give him ten more years of active life"

driving, has given his own safety tips for the benefit of other users. They are:—

1. Take no chances.
2. Give way to others.
3. Keep an even temper and don't get niggled by the other fellow.
4. Drive at an even speed.
5. Try not to inconvenience other road users.
6. Keep a straight course as near as possible.

It is notable that the accent throughout is on courtesy and, given that, I think that number 3 of the above list is easily the most important. I consider that more bad and risky driving is occasioned by bad temper than any other single factor and this itself is occasioned by thoughtlessness on the part of others in the first place. It is very hard indeed not to get mad at the idiot who sits behind you in a traffic block, hooting illegally on

his strident horn (Taxis worst offenders); and the "wide boy" who charges up on the nearside of a waiting line of traffic, then sticks out his indicator and cuts into the stream can raise the most reasonable man's ire with a desire to "show that - - - something", but it's safer to let him get away with it—safer for everyone.

Weak Spots

Going through the batch of letters the editor has received this month complaining of various troubles and asking for advice, I have been struck by the fact that, for the first time in my motoring experience, ignition does not top the list as a cause for complaint. The two big troubles seem to be lighting and jets.

A number of readers seem to be sticking to their cycle dynamo sets for some unfathomable reason and these are in trouble because the

speeds of motoring blow the bulbs, but many who are using engine generated current seem to be in the same spot, especially with tail lamps.

Others meet the trouble we have found ourselves on some test machines, that the range of speed is too wide to get a good light at low revs. with security for fast cruising or the occasional dash down hill. A simple automatic voltage control would get over this but might be expensive. Twin filament bulbs with a cut-out switch (dipper) on one circuit would appear to be a simpler answer. Are there any available, Trade?

The common nuisance of the choked jet, however, should not be with us. This is simple a matter of putting a couple of filters into the feed system and should be standard on all units. They can be bought and fitted quite cheaply, however, and are well worth it.

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.

Tandem Unit

As with so many others, I have just discovered *Power and Pedal* and it has turned out to be just the book I have always wanted. I own a tandem fitted with a *Power Pak* and would like to take this opportunity to write of a few facts I have found and experienced, that other tandem owners would probably be interested in.

First of all in reply to F.N.W. of E.15, I gave nearly two years study to various makes of Power Units, and am convinced that the *Power Pak* is the unit for tandem use, (with certain adjustments, which are a must, for good performance, which I list further on in my letter).

With the *Power Pak* Synchronomatic control, once you engage the hand lever, (bringing the roller into contact with the tyre) on starting a journey you have no need whatever to disengage, until the completion of the run, when you release the pressure from the tyre, also you can carry a passenger on a tandem if a learner driver, and they do not have to possess a driving licence.

Now, the reason for my choice of a *Power Pak* for a tandem. Its power is ideal for the double weight, and so made and fitted that there are no signs of wobble as extra weight felt, when proceeding on power or normally cycling. Its mixed petrol capacity of 5 pints is ideal and gives quite a long run, approx. 100 miles at cruising speed, and there is sufficient room in the framework to fit an extra half

gallon container, or on the carrier provided by the makers.

With regard to starting off, either on a hill or the flat, I find the Cyclo gear, or Hub gear a great assistance. By using these gears I have never found the need to use the choke, when starting.

The adjustments to the cycle, which the makers do not mention in any of their leaflets, are, that unless the rear wheel rim is correct for the Motorette Tyre provided, a new one is required, and at the same time, heavy duty spokes fitted.

To prevent the grit, water and mud from harming the cycle gear, which the roller tends to throw down, I fitted a home-made guard similar to the one supplied by the makers only wider and longer and anchored from the stay bolt of the rear mudguard offside position.

I learnt my lesson regarding luggage carried on the rear (by which I had an accident) and am going to fit a sidecar chassis for this purpose, and at the same time give the tandem extra balance. Here also, is a good position for that extra petrol container.

To all tandem users, considering Power Unit fitting, I consider this unit the very best and to me has lived up to all the makers have said of its performance.

Success to all in 1954.

W.T.W. 570

Halstead, Essex

"Cyclemaster" for Tandems

I have just got *Power and Pedal*, February issue. Never seen it before. Its a good effort. My

wife and I are pioneer cyclemotorists (Tandem), from the early 1948 prototype days.

I am rushing into print to help your Bournemouth reader, A. W. Attfield.

We have tried various models on tandem and single. We now use *Cyclemaster* and would advise your correspondent to do likewise.

With *Cyclemaster* he will have a robust wheel, his *Eadie* or *B.S.A.* Coaster Hub., plus a reliable engine with (and this is **most** important) lusty lowspeed pulling power.

The only maintenance needed is, oil in the clutch chamber fortnightly, or according to the use to which the machine is put, exhaust port cleaning every 300 miles, and correct tyre pressure.

Cyclemaster is easy to start, simple to drive, and possesses ample power for a tandem.

Our combined weights are 20 stone and we travel hundreds of miles yearly, at speeds around 15 to 18 miles per hour.

What you need to complete the magazine is a "Tandem Topics" page.

THE VINTAGERS,

West Kirby

The "Pak" Again

Like Mr. Attfield, I too am the owner of a tandem and have been confronted with very much the same problems as he. With regard to the choice of motor, after many months of casual conversations with powered tandem owners met on the road I was certain that the *Power Pak* was the job for me. Without exception they had nothing

but praise for this unit—its power and reliability was the tops and even the addition of a sidecar to the tandem left it entirely undaunted. The "Synchro" job received special praise as getting away was achieved without having to overcome the resistance of the engine before firing—a major point with tandems. It seems that once one becomes the owner of a *Pak* then one becomes unshakeably endeared to it. This I have proved as I am now the proud owner of one myself. Believe me Mr. Attfield, stick to your first choice, you won't go far wrong with a *Pak* for tandem work.

Regarding the coaster-hub problem, I too toyed with the idea of using one but then realized that I would have to dispense with my faithful *Sturmey* 3-speed hub-brake combined. Those gears, especially the lowest, are still awfully handy even though motorised, and who knows, maybe, if petrol runs out,

then pedal pushing will be called for and the thought of bashing a loaded tandem along on one set gear, especially in traffic, even for a short while is enough to give one a violent attack of the "Bonk"

This same consideration also rules out any "powered wheel" type of unit as I don't think selective gears are possible with them. Its all a matter of personal opinion I know but it's a point worth remembering. I hope, if this reaches the correspondence columns, that these observations will help Mr. Attfield and that perhaps we may meet on the road sometime to compare notes—just keep an eye open for MYX 277 and that will be—

P. H. A. BROOKS

S.E.18.

"Mini" for Tandems

On reading F. W. Water's letter (January issue) for Tandems I would like to say I possess a tandem with a *Mini-motor* attachment and find there is no additional

inconvenience (indeed if any at all) in handling from the driving position.

The tyre roller can be engaged by means of the DRIVE CONTROL LEVER which is conveniently placed on the front handlebar

The *Mini* seemed to me to be even more suitable with a tandem than the "solo" cycle as no "wobble" is experienced and the only difference is that longer throttle cables, etc., are needed.

In closing may I give my opinion that the *Minimotor* is the best to-day.

Sheffield

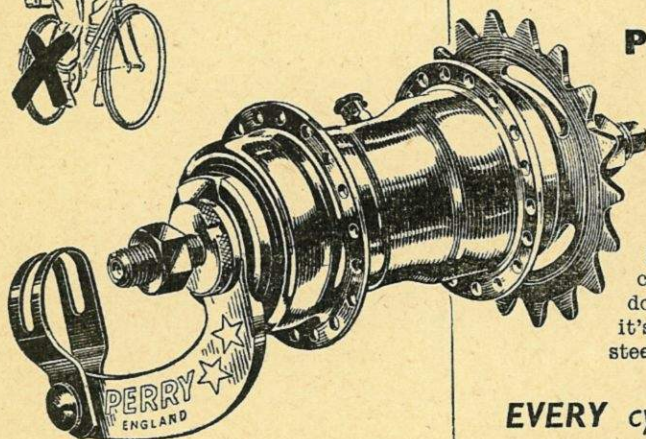
"Cyclestar"

I was very interested in the report on the Dutch *Cyclestar* in your November number.

I have recently been working in Singapore where I had been favourably impressed by *Cyclemaster*



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X marks the spot where the PERRY coaster hub brake fits on your bicycle, to give you that extra stopping power which makes all the difference. Operated by backward pressure on the pedals, the PERRY safety brake gives you absolutely controlled braking, whether for coasting slowly down hills or sudden emergency stops. And, because it's a foot-brake, your hands are always free for steering, signalling and handling controls.

EVERY cycle is better for a
PERRY COASTER HUB BRAKE

—all the safer to cycle with!

Ask your dealer for a demonstration, or write for free descriptive literature to Perry Chain Co. Ltd., Tyseley, Birmingham, 11.

machines made as a one-piece machine. Judging from the strong family resemblance between the photo of the *Cyclestar* and the Singapore type of *Cyclemaster* I think it is possibly the Dutch *Cyclemaster* which we are getting in Singapore?

I had been hoping to buy one in England as a run about during my leave, but if my guess is correct this model is not to be had in this country? A pity too, as it appears to be a sound little machine and much superior to the clip-on type which seems, for purchase tax reasons I suppose, to be predominant in the U.K.

It would be interesting if you could give a report upon the German Heinkel machine which was recently mentioned in "*Motor-Cycling*" as it sounded extremely advanced in design, and if its performance equalled its specification it might help to persuade our Manufacturers that a Cycle-motor need not look like a motor-cycle of 1900, but can be quite "eyeable" if designed as a complete machine.

R. MACLEAN

Cardiff.

"Mosquito" Carbon

I was most interested to read W.G.L.'s letter in the January issue, on the subject of a *Mosquito* engine, and an alleged 6,000 miles performance without full decarbonising.

I have been using a *Mosquito* unit since early 1951, and my experience with this engine differs considerably from that of your correspondent.

On a 20/1 petrol mixture, I have observed a falling off in power after 250 miles. At first, and perhaps because I am singularly fussy, I removed the cylinder-head and carried out a full decarbonising operation. I realised that the bulk of the carbon forms as a curtain across the exhaust port, and the

deposit on the head is—comparatively—of little significance.

Another factor is the difficulty in re-making a perfect cylinder head seal, after the removal of the head, and so I now only remove the exhaust pipe and with the front of the machine suspended from the garage roof(!) get to work on the exhaust port.

This is all well and good so far. However, unless "W.G.L." takes the precaution of removing the curtains of carbon formed on the piston crown adjacent to the transfer ports, he will only have half done the job. I use a special scraper manipulated through the sparking plug hole to remove this deposit.

Another tip to *Mosquito* owners whose engines are pre premium petrol days. A real improvement in performance can be expected if the ignition is advanced by 1/16th (measured on the contact breaker plate). I also did this to a friend's *Mini-motor* with similarly good results.

PPE 336

Farnborough.

Still Cyclists

After some 30 years of cycling and likewise membership of the Cyclists Touring Club (now a life member) I took delivery three months ago of a new *Tri-master* cycle fitted with *Cyclemaster* engine making my first entry into the ranks of Cyclemotoring. I very soon felt the desire for a live Journal devoted to Cyclemotors with an exchange of views and maintenance hints and advice of other users, with a keen Editorial and contributing staff, for as I see it, as soon as one fits one of the very small capacity engines one ceases to be of any interest to the Cycling Press. I seem to sense a rather narrow attitude (which may be due to the feeling of its readers?) of:—"mention as little about Cyclemotors, and

their users as possible, and keep adverts of such machines and their fittings, accessories, etc., OUT."

I guess many of us have devoted a big slice of our active lifetime to aid the cause of Cycling in its many spheres and are still very much cyclists at heart, but the Cycle-motor has in no small way helped has in no small way helped bring back to we older riders the keenness and zest which was ours in our youthful cycling days, and taken us (with a little aid) into the old haunts, and perhaps enabled us to re-visit places we were beginning to think of as *memories only*, due to their distance as the years roll by and life's other commitments etc. I also note the Motorcycling Press apart from "Show" mention has little to offer us, and in any case few of us are interested in Cross Country Rough Stuff, riding through river beds and up freakish one in threes. Not with engines of between 25 and 50 c.c.

W. E. FOWLER.

Leek Staffs.

100,000 Answers!

I have been a reader now for about 4 months and it seems that this is a fine paper for airing one's views about our *Flying Fleas*.

I have noticed that there are more *Cyclemasters* on the road than any other cyclemotor. Why is this. They are far slower. They need decoking twice as quick; also I believe they carry less fuel, and judging by the amount of chaps I see using them surely they can't be at all reliable. The price is much higher than the *Mini*. Perhaps some of your readers could give me some reasons why they buy this machine.

T.P.C. 739

West Croydon, Surrey

"Cyclemaster" Performance

I have just completed my second journey to Torquay and back, on my *Cyclemaster*.

The journey of 198 miles from Brighton to Torquay was completed in less than 12 hours for two of the trips. The other two unfortunately took 13 and 15 hours to complete, the reason for these delays being fog, and ice on the way.

On the whole, of each of the four trips, I found that the machine will run more satisfactorily on the dearer brands of Petrol-oil mixtures. At a guess I estimate that my particular engine does 200 miles to a gallon. There is an increase in petrol consumption on the hills, of which there are plenty, but this can be compensated by "cutting-off" on the many long down hill runs.

On the whole I am more than satisfied with my engine and had no "trouble" whatsoever.

Before the last trip I fitted a new *Wipac* plug (3/6)

And to end up, the return trip

was done for only 12/- including a few cups of tea *en route!*

Does anyone know how to stop an ordinary dynamo rearlamp bulb from burning out?

PAUL E. LOOSELEY

Brighton

Nothing to Suit

In common with many, I am always interested to hear views on the question "What is the best position for a clip-on?" My view is that the manufacturers have tried every possible position by now—every position, that is, except the most obvious one of all!

When the motor cycle developed 50 years ago, motors began (I believe) above the front wheel and eventually finished up in the only possible place compatible with safety and efficiency—inside a diamond shaped frame. A few years ago I saw an illustration in an American

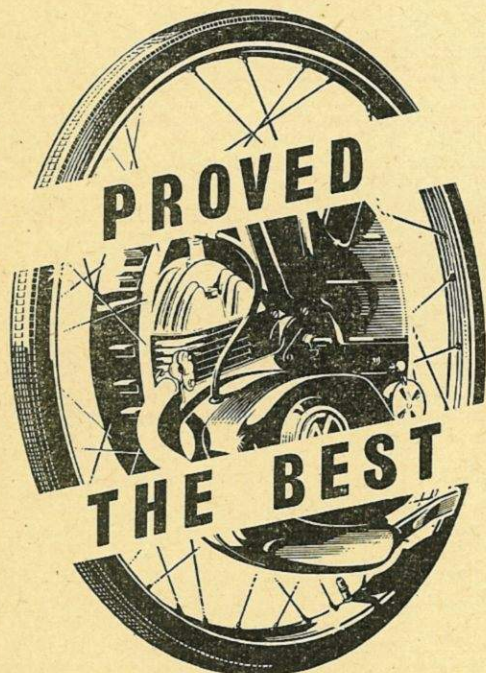
journal of a Yankee clip-on, and that design supplied the perfect solution to the British designers task today—put engine and petrol tank inside the frame and connect to rear wheel with belt drive.

This, in my opinion is the best transmission for a bicycle motor. Rollers possess disadvantages, too obvious to require listing here, hub motors are too heavy, and motors which use the existing chain are too expensive. Inside the frame, surely a diamond frame for strength the engine is protected from knocks and mud, and yet supplies a reasonably low centre of gravity.

I was on the point of becoming a cycle-motorist last year, but failed to find a single motor which did not possess a heavy drawback of one kind or another, so I bought a *Le Velocette* motor bike instead.

D. A. ROBERTSON

Cheshire



£27 10 0

including special wheel, tyre, back pedalling brake, lighting dynamo. 6 months guarantee

90,000 USERS

IN THIS COUNTRY ALONE *Read what some of them say :*

25,000 MILES

"I have done 25,000 miles on my Cyclemaster and have nothing but praise for it." S.B. (Tipton)

ALL WEATHERS

"I have covered many thousands of miles on my Cyclemaster in all sorts of weather on all sorts of roads." G.S.A. (Belfast)

1,000 MILES A MONTH

"There is NO better cyclemotor ANYWHERE. Bless you. 10,000 miles in 10 months over hilly ground. Same tyres, etc." E.D. (Tunbridge Wells)

Cyclemaster, original and best engine-in-a-wheel, earns these testimonials (and thousands like them) BECAUSE :-

- ★ It is completely self-contained (No separate attachments).
- ★ The drive is by enclosed chains (no roller to wear tyres : no power slip).
- ★ It fits any bicycle or tandem.
- ★ Back pedalling brake and lighting dynamo included in price.
- ★ Low centre of gravity increases safety.
- ★ Clutch enables you to keep engine running in traffic.

230 MPG

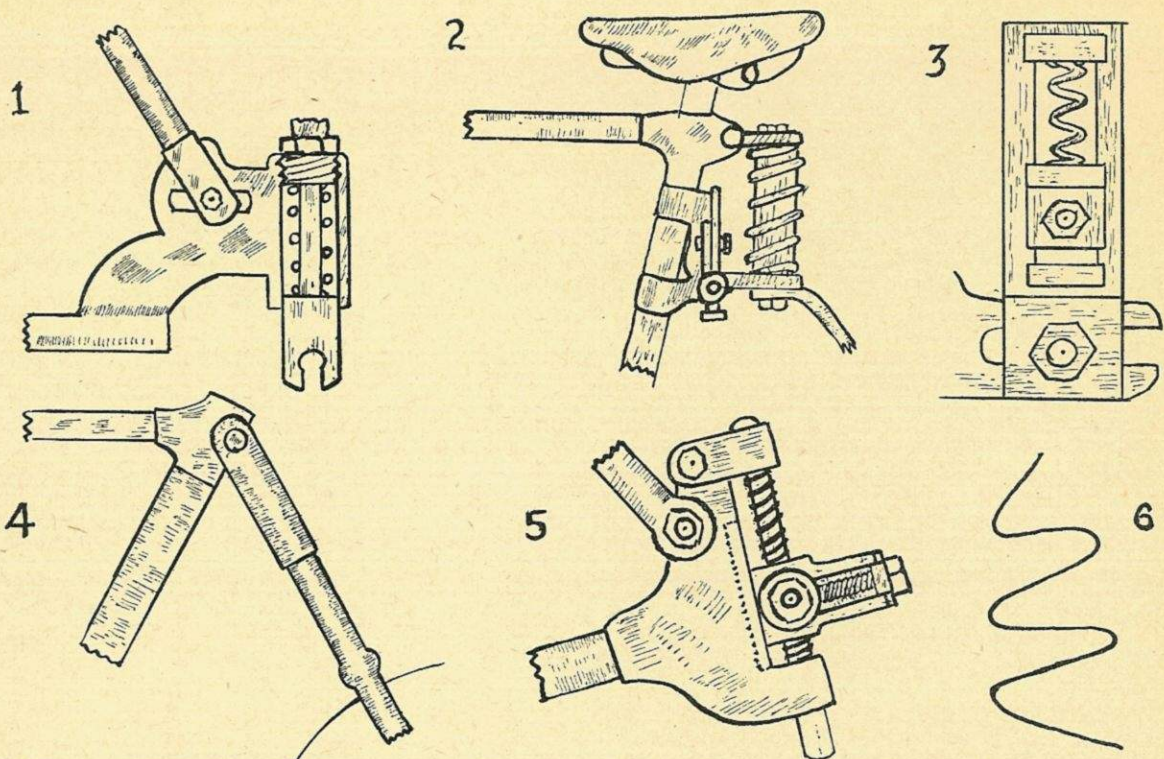
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Cyclemaster

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HISTORY IV.



REAR SPRINGING

By

S. V. Holroyd

ABOUT the time when the Pennington motor was being fitted to "safety cycles" (were they ever fitted to Penny Farthing models?), in order to assist riders take out the hard work in cycling, many ideas were evolved in the way of rear springing. Surprisingly enough, some of these ancient ideas are very modern. True, our up-to-date rear springing on motorcycles, for instance, is very neatly housed in chromium plated sliding box cylinders or put out of sight inside the rear hub. Yet basically, modern rear springing retains practically most of what was evolved many, many moons ago. In the way of springing, what do we have? Compression and suspension. Usually we think of coiled wire springs but rubber, oil, and air, as well as laminated springs, are

extensively used to absorb shock, but for us two wheeled folk both size and weight of springing (if any) on the machine matters a lot. For cycles then, then and now, coiled steel wire springing was a useful medium for rear springing.

That the universal acceptance of a rear sprung safety cycle never caught on, leads one to conjecture. Did our roads become so much better, or did the pneumatic tyres, or were the old rear springing ideas too heavy, cumbersome, and inefficient, that the patented ideas just faded away? Some of them made to-day with lighter and stronger materials might well prove a boon to all m.a.c. riders. The sketches give one a general idea of what some of the 19th century inventors thought up, but they are not intended to show detail or the complete springing system itself. Sketch one is so "modern" in design that it's hard to believe this idea is well over fifty years old. Here we see it partly in section in

order to understand how it works. It is self-explanatory—the fork end combines with a box cylinder in which a spring loaded plunger moves up and down. The plunger end is in itself another "fork end" into which the rear wheel spindle goes. The top of the cylinder houses the main bush which holds the spring and plunger rod slides. The rear fork is connected to the fork end as a sliding fit into the slot. It will be remembered that not only "up" and "down" movement must be considered in some springing devices, but also "arcing" movement, too.

Sketch number two shows rear springing with the main piece of it practically tucked underneath the saddle. The saddle tube clip held a pivoted mounting into which the top of the spring bolted. There was another pivoting point in the mounting which was fixed to the seat tube, and just above it the fixed face plate and the loose face plate whose maximum open-

ing (spring compressed) was limited by the bolt that ran through slots in both plates. Not only did the plates open, but they also rubbed up and down (This detail is not shown). The bottom of the spring held the top part of the rear forks. Needless to say, there was also another pivot or swivel at the bottom bracket. In this idea we have the one which embodies the general springing of the rear forks and chain stays, as well as the rear wheel itself.

In the next sketch, three, a frame or block was bolted into the rear fork ends. The rear wheel spindle bolted onto the sliding block inside the frame, where again, we have a coil spring working. As before, provision was made for "arcing" movement by employing one other swivelling point, should the cycle be shaft driven (many were), or a chain tensioner. On the face of it, sketch four shows a neat attempt at rear springing on a cycle. One cannot help but recall to mind, our modern motor cycles with their front sprung forks totally enclosed in a manner very much like that shown here. There is hardly any need to attempt to show some detail here because the basic idea of having springs inside this section of the rear forks (the part from the rear fork bridge up to the saddle clip) working on the "plunger" system, is pretty obvious. Or is it? This section of rear fork was made as sliding tubes. A yoke swivelled on the saddle clip bolt and held the

outer casing of the part. The two rear fork blades met as one above the bridge and formed into the inner part of the idea. Both compression and suspension springs were employed. One of the "snags" motor cycle makers had before the late war, when another attempt was made to interest the motor cycling fraternity in "telescopic springing," was that of overcoming potential customers' prejudice against the wide open spaces twixt wheel and mudguard when the load was off the machine. Only by heavy valancing this space so it wasn't seen, was the prejudice overcome. Or mainly so. Possibly some m.a.c. manufacturer of the future might get cracking on this rear telescopic springing for future m.a.c.'s. It's certainly very neat.

Yet another rear fork end "shock absorber" is shown in sketch five. The rear wheel spindle was mounted in the sliding block which faced onto a vertical ball race indicated by dotted lines. A coil-spring cushioned the axle above and below. In case any reader may think the squiggle in the corner is a slip of the artist's pen, let him be sternly reminded that it is somebody's invention of rear springing for a cycle. The rear forks were made of two lengths of flat spring steel bent to the shape shown. The usual connections were made—one at the saddleclip lug, one at the mudguard bridge and at fork ends. The idea was, of course, that the rear forks themselves should absorb shock.

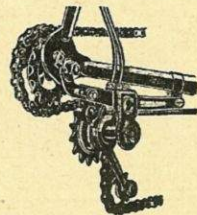
It is not recalled that any provision was made for lateral movement—one of the bugbears in two-wheeler springing—but no doubt there was some. Here again, in this idea, the unloaded machine must have been odd looking (apart from the oddness imparted by the idea itself), but it is only now and then that this sort of thing cropped up before the twentieth century made its debut. All in all, the attempts at springing the rear half of a cycle were very good. In the main, coiled springs were very much fancied as a medium, but one bright inventor used the idea of leaf springing as used on railway coal wagons. In effect, he created a miniature coal wagon mounting complete with elliptical laminated springs and axle box. The whole was mounted onto the rear fork ends and the rear wheel bolted in. Obviously too much of a good thing. Had he never heard of "hot boxes"? Your railwayman friend will tell you what they are, if you don't know!

Our cycles have kept to what they are for fifty years or so, and it seems they will continue to do so. But with that extra weight and extra power our m.a.c.'s have and will continue to have, perhaps there will be a revival of rear springing? If it is to appeal to the majority it will have to be efficient, fool proof, neat and cheap. It is my pet belief that only some form of sprung rear hub will make a general appeal.

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The "GOWSNICE" SERVICE EPIC

Life is full of surprises. Fellows who would not dream of buying, say, a radio set from the "Sales only" type of organisation employing no servicemen of their own; will often buy an almost equally complex piece of equipment—namely a Cyclemotor, from just such a shop!

News of this illogical way of buying which nearly always leads to disappointment, has become such a feature of correspondence to us that we feel it really ought to be told here.

This article was actually written by a well-known and successful retailer and he should know!

AT last I am having satisfactory service from my "Gowsnice" auxiliary cycle motor, and I am writing this letter in the hope that you will decide to publish it and let others benefit from my experience.

You will no doubt recall that I wrote to you about 9 months ago giving my opinion that you had a nerve to publish a paper solely devoted to bicycle engines as they were merely a toy for the well-to-do and had no useful place in the scheme of economical transport.

I was wrong. Please accept my sincere apologies. Those words were written in a bitter moment, of which I have had a good number as you shall hear.

The "Gowsnice" engine first caught my eye on a visit to the city centre (I live in a suburb). As a matter of fact there were 5 of them on a wonderful tiered display stand amongst the cycles, radio sets, electric fires, etc., in the window of one of the largest shops in the city.

There was descriptive material telling me to "simply fit a 'Gowsnice' and forget all about pedalling." I was captivated. I am a

clerk by occupation, but not one of the sit-at-a-desk type. I do a lot of walking around the works each day and was finding that cycling home, particularly if it should be windy, was becoming a bit of a "bind".

Here was the answer to my daily transport problems and the hopes of some nice week-end fishing trips!

I was soon inside and asking about them. I found it difficult to get specific information—none of the staff actually used one, but I was shewn wonderful testimonials from all over the country. I was assured that the "Gowsnice" was just "sweeping the market." "That I couldn't go wrong, they were simplicity itself", and in answer to my tentative question as to whether one would fit *my* cycle received the airy assurance—"They will fit A N Y cycle sir! Bring your cycle here on Monday and you can collect it Tuesday afternoon in complete running order".

I collected it on the Tuesday about 5.44 p.m. and set off home on it, engine disengaged until I should be clear of the busy city streets. I received no real instruction, but was armed with a little booklet which I was told "You will find very explicit and helpful in the *rare* event of your 'Gowsnice' not working properly" I was to remember those words, particularly the "rare" bit!

Once outside the city's inner belt, I engaged the engine, turned on the petrol, tickled the carburettor as I had seen motor-cyclists do, and made an attempt to get it going. From all the information I had received that's all there was to do—and then move the lever toward me for "faster" and away from me for "slower"—nothing to it!

But could I start it? Not on my life. I spent an hour travelling about half a mile, trying all the time. Then I thought of going back to the shop with it but realised that it was almost 7 p.m., and they would be closed.

There was only one thing to do—pedal it home, and this I did, arriving exhausted for I had not cycled anything like that distance for a year or two. I dumped the cycle and engine in the garden shed overnight. I wasn't very angry—I was so exhausted I hadn't even the energy for anger!

The following morning I rang the firm from which I had bought my motor and learnt that the only thing I could do was take it to them and they would have a look at it. There was neither surprise nor sorrow in their attitude and no mention of any facilities for collecting it from my home.

I had no intention of riding it back as a pedal cycle that distance so I appealed for help from a motor-cyclist neighbour. From him I learnt which was the choke—vital piece of information to me at that stage. I had read a bit about "closing the choke for starting!" in my booklet, but as I had no idea where it was I assumed that the people at the shop had closed it. This sounds awfully dim I know—but we all have to learn sometime. Then followed a period of 6 or 9 months during which I struggled with my engine, learning a little in the process and suffering many trials of temper. I never dared encompass a journey above the distance which I could pedal home and had always to leave home with sufficient time margin to pedal to work should it develop its non-starting tricks.

I made frequent approaches (some of them very heated) to the firm who supplied my engine.

However, I soon realised that the 17 year old youth delegated to "engine servicing" knew little, if any, more than myself and in addition was not thorough in what he did.

Gradually I became absolutely sick and tired of the engine, the lack of after-sales service and the never-ending ragging of my friends.

The Clouds Part

Then it happened. The engine had "conked" once again about 4 miles from my home and whilst trying to discover the fault, a cyclist equipped with an engine identical to my own soared up to me in a way that mine had never run and asked me if he could be of help.

From conversation I learnt that he had ridden his engine some 2,500 miles and apart from an occasional petrol stoppage had experienced no trouble whatever. "Ah! but what about decokes?"

said I, being as clever as I could, whereupon he quietly explained that he didn't have to bother about them. The shop from which he had bought his "Gowsnice" operated a service scheme. When the motor reached a "woolly stage of running one took it in, paid a flat £1 for which one received a decoke, magneto check and spark intensification and complete tune.

His engine had needed this only twice and "though it sounds expensive, it is cheap, for I spend no time playing with it myself".

The following evening he took me along and introduced me to his dealer (who, ironically, is much nearer my home than the shop from which I bought my engine!.)

What a difference I found in the two establishments! This dealer, a middle aged man, shook his head rather sadly as he viewed my machine. "Did you fit this engine yourself? he queried." "No"

I answered, "Why?"

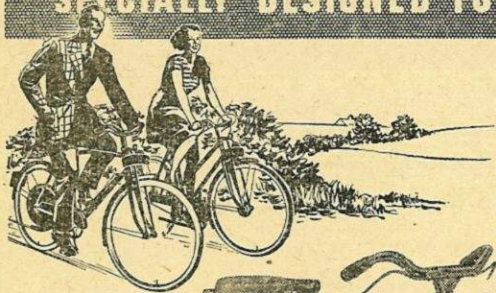
Whereupon, without a word he led me from his very neat and clean sales shop, through what I have since learnt is his "Quick-back-on-the-road" service department into his well equipped workshop.

He waved his hand towards a cycle fitted with a brand new "Gowsnice" held up off the floor at working height in a sort of clamp arrangement.

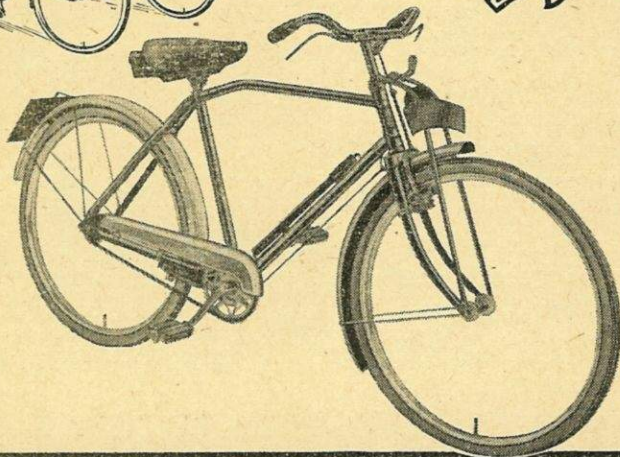
There was no need for him to speak. I fingered it and looked for myself. One doesn't have to be a composer to appreciate music. I am no engineer—but here was a good job.

This old cycle had obviously been most thoroughly "gone over" prior to fitting the new engine. A new spoke or two gleamed in the wheels, which were tight and ran true and free. Special heavy duty brake blocks had been fitted. The engine fixing bolts had extra

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"GOWSNICE"—cont.

lock-nuts fitted, the cable runs were neat, the number plates were thick, rigidly strutted and lock-nutted.

Out of curiosity I tried the knurised tail lamp terminal with my fingers. I could not undo it—it had been tightened by a man who knew how easily they vibrate loose. I cannot enumerate all the detail, but when I thought of the hasty "get it out of the shop" way in which mine had been turned out and then looked at this; I realised why this dealer had shaken his head.

I left my machine with him for a week and he made a wonderful job of it. I have since had an absolutely new class of performance and apart from an occasional "whiskered" plug or blocked jet have had no trouble whatever. My only regret is that this worthwhile dealer did not get the profit from my original engine purchase, but I have had the pleasure of introducing two new engine prospects to him; so perhaps there is a point here for your dealer-readers.

To sum up—my advice to new engine buyers is:—

1. Don't buy the first engine from the first shop you see.

2. Don't rush into any long distance buying where it would be difficult to get your cycle back to them in the event of trouble.
3. Do a tour of the likely shops, collect literature, meet and judge the staff and then go home and brood on it for a day.
4. When you've decided which engine, stop a fellow riding one and discover who carries adequate spares and gives the best local service on that make.
5. Pal up with someone who already has the same make of engine. You will be of help to one another.

With best wishes for the success of your Journal,

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MOTOR CYCLING ON THE CONTINENT

A SERIES of six weekly lectures entitled "Europe on your Doorstep" will commence at Chiswick Polytechnic on Friday, 5th March, at 7.30 p.m. The fee for the course is 2/6 (17/- for those living outside Middlesex).

This series, which deals with travel in France, Germany, Austria, Italy, Belgium, Luxembourg, Spain and Switzerland should be of particular interest to readers as the lecturer, Leonard Black, is a motorcyclist with considerable continental touring experience, and the subject matter for the talks was gathered while motorcycling in the countries concerned. Means of transport, customs formalities, clothing, language difficulties, and the art of inexpensive travel will be discussed.

Chiswick Polytechnic is situated in Bath Road, Bedford Park, W.4., and is within a few minutes walk of Turnham Green Underground Station. Parking facilities are available for cars and motorcycles.

Enrolments can be accepted at the Polytechnic Office any evening between 6 and 8 o'clock or on 5th March before the start of the first lecture.

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A few puffs by mouth serve to inflate the Interior Cushion to any desired pressure (one inflation will last for months without softening), access to which is per a zipped slot, giving easy removal.

A READER'S TIP

I bought a *Minimotor*, June 1953, and using a *Dunlop* "Motorette" tyre, I have banished mud trouble by inserting a piece of 8in. leather on the inside of my mudguard, by drilling a hole in it, and passing the mudguard stay screw (bottom screw) through; the natural shape of the mudguard holds this in place when not in use. The leather is a 2in. square with a half circle cut out at the bottom; when placed in position for squee-geeing tyre, it cannot slip out owing to wheels revolving. I have also packed my rear hub with grease, and "top this up" after every 150 miles, with no apparent wear on tyre, or performance (up to 30 m.p.h.). I pump enough grease to form a thick "washer" between spindle cones and wheel forks.

B.C. & M.C. M.U. OFFICIALS

MR. J. Y. SANGSTER, chairman of the Triumph Engineering Co., Ltd., Coventry, was re-elected president of the British Cycle and Motor Cycle Manufacturers' and Traders' Union for 1954 at the annual general meeting in Birmingham. The two vice-presidents, Mr. H. E. Price, a local director of the Dunlop Rubber Co., Ltd., at Fort Dunlop, and Mr. T. J. Boulstridge, managing director of J. A. Phillips & Co., Ltd., Smethwick, were also re-elected.

THE Minister of Transport and Civil Aviation has agreed to the appointment of Mr. H. M. Palin, M.B.E., director of the British Cycle and Motor Cycle Manufacturers' Union, as a member of the Ministry's Departmental Committee on Road Safety.

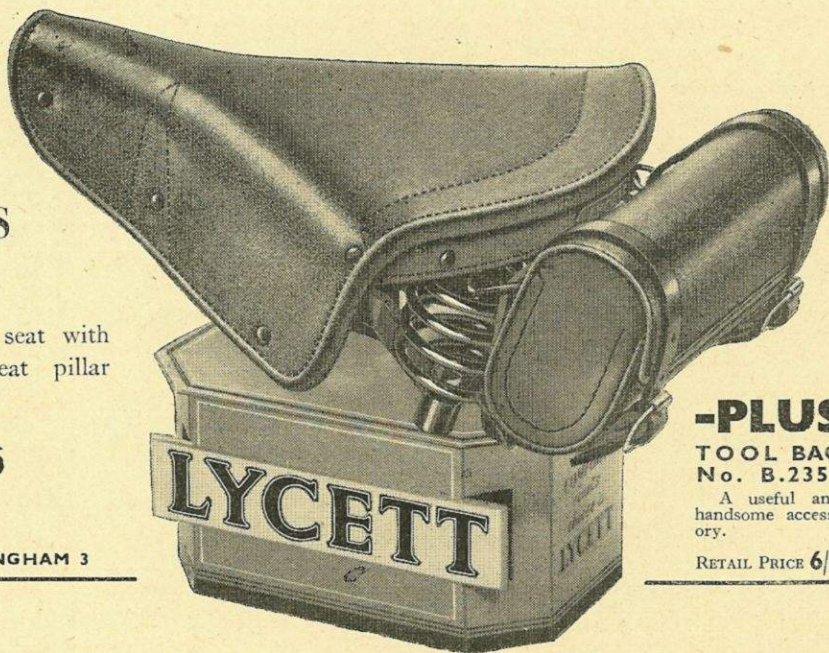
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NEW LIGHTING REGULATIONS—EFFECTIVE THIS YEAR

THE Memorandum on the Lighting of Road Vehicles summarises the Acts and Regulations relating to vehicle lighting prior to the passing of the Road Transport Lighting Act, 1953, and the Road Transport Lighting (No. 2) Act 1953, which received the Royal Assent on 14th July, 1953. This addendum corrects the Memorandum up to 31st December, 1953 Act, 1953.

(a) *Red Rear Reflectors and Lamps*

- (i) Two red rear reflectors, and two red lamps are to be made obligatory on all road vehicles except solo motor bicycles, pedal bicycles and pedal tri-cycles, which will require one reflector and one lamp, and horse-drawn agricultural vehicles and

implements which, while continuing to be exempted from the need to carry a rear lamp will be required to carry two rear reflectors.

(Secs. 1(1), 1(7), 2(1) and 2(4)(a).)

- (ii) These lamps and reflectors must comply with conditions to be prescribed in regulations by the Minister of Transport and Civil Aviation. (Secs. 1(1) and 2(2).)
- (iii) Combined rear lamps and reflectors will be permitted if they comply with the conditions prescribed for both. (Sec. 1(2).)
- (iv) The reflector obligation, and the authority to com-

bine reflectors with rear lamps, will become operative on 1st October, 1954. The new rear light obligation will become operative on a day or days to be appointed by the Minister; different days may be appointed for different classes or descriptions of vehicles.

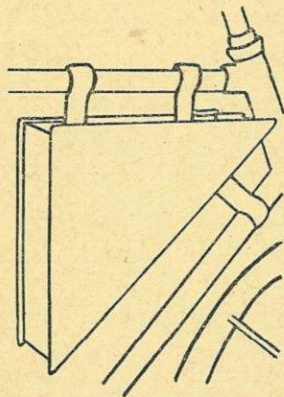
(Secs. 1(8) and 2(3).)

(b) *White Surfaces*

As from the 1st October, 1954, the powers of the Minister to require a white surface to be exhibited on pedal cycles and in certain circumstances on other vehicles will be repealed. After that date a white surface need not be carried on any vehicle.

(Secs. 1(3) and 1(7).)

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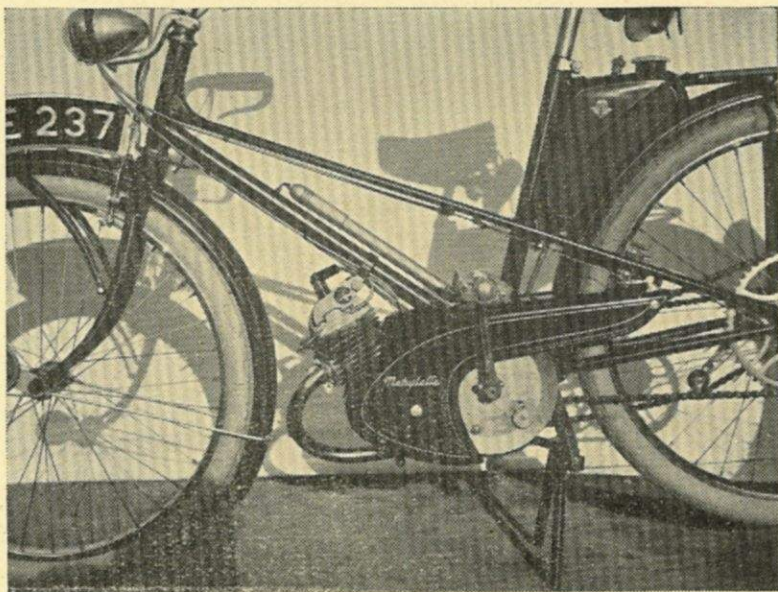
ROAD TEST REPORT

The "Standard" MOBYLETTE

IT is less than three years since the famous French motor cycle manufacturing firm of *Motobecane* marketed their contribution to the motor-assisted cycle field in the form of the *Mobylette* 50 c.c. auticycle but its success has been immediate and we ourselves noted and reported in the course of our own tour in Northern France last summer that over half the machines we met were of this model. Now we know why, for we have tested it ourselves and have found it the handiest little tool we have ever met for the job of transporting the body cheaply, easily and safely anywhere at any time. It was built for this job and it does just that, perfectly.

The machine is a built-in-one-piece auticycle with its 49 c.c. engine mounted in front of the bracket. The primary drive is by "V" belt and final drive by chain to the rear wheel. The pedal drive is by independent chain, pulley tensioned. The top of the crankcase, the belt and pulleys and the top runs of the two chains are protected by handsome metal shields. The engine is all-alloy with a steel liner for the cylinder. A motorcycle type exhaust pipe and a separate large capacity expansion chamber look after the silencing most effectively and the highly polished *Novi* flywheel encloses magneto and lighting coils.

Of particular interest is the frame, which has a high strength/weight ratio, remarkable rigidity and exceptional good looks. Straight twin duplex tubes run from the steering head back to the rear hub and the design offers full triangulation in three planes. The front forks are "D" to round, tapered, and the built-in petrol tank looks and is part of the machine, set between the seat tube and the rear mudguard and anchored to the sturdy rear carrier.



A nice detail that is appearing on more and more continental machines is that the messy, inaccessible petrol taps under the tanks have given place to neat, clean and effective air valves on top: that of the *Mobylette* is easily operated from the saddle.

Heavy spoked, endrick rimmed wheels carry 2-inch (600 x 50) *Hutchinson* balloon tyres and are adequately shrouded by wide domed mudguards, very firmly attached. The brakes are built-in self compensating callipers. A spring-up central stand is provided.

On the "Standard" model tested there is no clutch, the engine being engaged or disengaged completely by means of a knurled, spring-loaded stud on the countershaft pulley which has two alternative socket positions. Except to test the machine as an unpowered cycle this stud was left in the "engaged" position throughout the test, the wide range of movement on the decompressor making it easy to wheel the machine

around with the engine engaged.

Controls are conventional, the right hand twist grip operating the throttle when opened inwards and the decompressor the opposite way. A thumb lever on the left handlebar serves the choke. The brakes are operated through cables by inverted levers and the streamlined headlamp carries a sliding switch that can be worked in the heaviest gloves with certainty.

On the Road

The first thing to strike the rider on taking over is the easy starting. The right grip is turned outwards, the machine pedalled away and the grip turned smartly inwards as soon as moving. Immediately the engine cuts in and takes up the drive. It is becoming a *cliche* to say that these machines pull away from walking pace but this one really does take over the drive and, if allowed, will pull the machine and a heavy rider away from under three miles per hour. The belt primary drive makes a perfect

shock absorber and is, of course, absolutely silent.

Top speed on the machine tested was 22 m.p.h. but some indication of the liveliness of performance and good acceleration was indicated by the fact that several circuits of the five mile triangular test course were made at an *average* speed of 20 m.p.h. (This test was repeated next day for the sake of verification). At this cruising speed the machine is extremely comfortable, goggles and special clothing are not needed and the stability and controllability of the machine make it a continuous pleasure to handle.

Hill climbing is very good, long main road gradients being taken at a steady 15 m.p.h. without effort. On real hills the speed was allowed to drop to 6/8 m.p.h. without pedal assistance but the little engine slogged away without any apparent ill-feeling and picked up again quickly as soon as the gradient eased. With the pedals in use almost anything climbable could be taken at around 10 m.p.h. with ease. The petrol consumption worked out at 192 m.p.g. using a number 20 jet. A 19 jet is supplied in the tool kit as a standard spare and would probably improve this consumption figure over the 200 mark at the expense of a little full-throttle pulling power. The exhaust is commendably quiet and there is no mechanical noise at all.

The large balloon tyres, when run at the maker's recommended pressures (14 lbs. front and 17 lbs. rear) gave real armchair comfort, and the two miles of hateful cobbles on our daily route quite lost their sting. These big sections too add much to the road holding and braking power of any machine. The brakes on the *Mobylette* were first class stoppers, either pulling up the machine quickly and safely alone while both used together could frighten some car drivers astern. There is no wide stretch or heavy physical effort involved in application and both brakes

were smooth as well as effective.

Outstanding in the handling of the machine is the steering. This is absolutely superb and enabled the tester to ride hands off at any speed on any surface while feeling for a handkerchief or consulting a wrist-watch in flight. At low speeds the same desirable characteristic made it easy to slip between rows of stationary vehicles at traffic stops without the slightest risk of scratching anybody's paintwork. Cornering is a delight and rarely called for any cutting back of the throttle, an explanation of the high averages put up without a high maximum speed. The same super steering and stability was found when the machine was used without the engine.

The finish is in an unusual but very attractive dark grey enamel with the usual parts brightly chromed. The mudguarding is so good that wet weather riding did not get either machine or rider splashed while a week out of doors failed to spot the chrome at all.

Conclusion

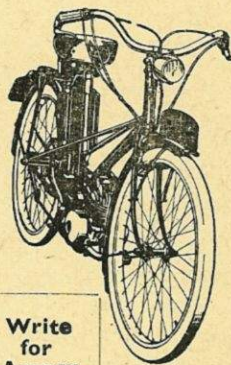
It is difficult to fault this really delightful little machine and it seems almost like carping to say

that a larger saddle would be more worthy of it and that lighting sets without battery standby are a nuisance as well as being illegal. In London traffic a clutch would be of real value and we think it a pity that the "de luxe" model of the *Mobylette* links this with a drum type rear brake and charges an extra fiver for the two. Thanks to our evil taxation system the price is not low as it is, but still it represents excellent value for money and will provide motor-assisted cycling as it really should be for very little more than most of us are paying for separate units and cycles.

Specification

MOBYLETTE "Standard" model: Autocycle, fully triangulated frame with twin top tubes. 5-pint tank under saddle, Carrier built in. 1 $\frac{3}{8}$ in. wheels with 2in. (600 x 50) tyres. "V" belt primary and independent final chain drives. **ENGINE:** Mobylette, all alloy with steel liner. 49 c.c. All-up weight 163 lbs. **DISTRIBUTORS:** Motor Imports Ltd., 158 Stockwell Road, S.W.9. Price £49. 16s. 8d.

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IMPROVEMENTS IN THE LUBRICATION OF SMALL TWO-STROKE ENGINES FITTED TO BICYCLES

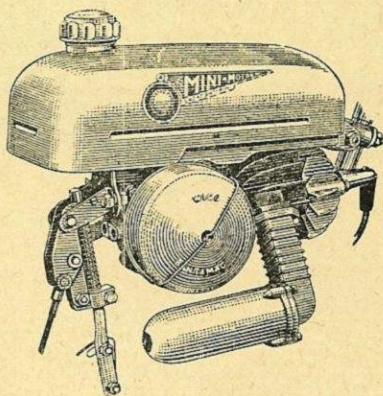
This article comes from Mr. H. Stillman, Chief Chemist to Edward Joy, Ltd., of Leeds. As a result of his conclusions they have decided to replace their well-known Clip-on "Filtrate" (regd.) Oil with an oil called Colloidal Cyclemotor "Filtrate" (regd.) and recommended its use at 1 part in 32 parts of fuel.

THE lubrication of small two-stroke cycle motors was first thought to be simply a matter of using the correct proportion of a good quality motor oil evenly mixed into the desired fuel.

At first an oil in the S.A.E.20 viscosity range was chosen to be used in the proportion of 1 part of oil in 16 to 20 parts of fuel.

Early experiments have shown that these little motors have no real lubrication problems such as are found in four stroke engines and subsequent experience on the road confirmed this finding. The real difficulty experienced was in the build up of deposits on the piston crowns, cylinder heads and exhaust ports and the tendency towards corrosion in main and big end bearings.

The incidence of combustion chamber deposits is not due to lubricating oil alone but to a combination of oil, fuel, and engine design. Plug whiskering, though not so common in the small two-



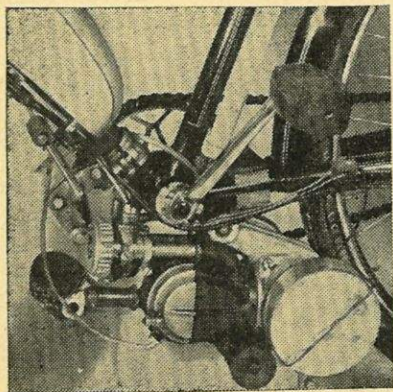
stroke is also attributable to the reaction products of the additives in leaded fuels and modern lubricating oils. All petroleum products form carbon when burnt under the right conditions, therefore, carbon deposits on piston crowns and exhaust ports, etc. stem from both fuel and oil. Engine design can have a considerable influence on this aspect of the problem. It is true that engine oils vary in the amount of carbon

left after combustion and that quite a considerable lessening of carbon deposit can be effected by the selection of the most suitable oil. It is also true to say that the lower the viscosity of an oil, the lower is the incidence of carbon.

Unfortunately, the lower viscosity oils lack film strength and the quality known as oiliness and in order to boost these qualities, recourse must be had to the use of chemical additives. This again increases the tendency towards the formation of deposits other than carbon and can quite easily outweigh any advantage gained by the use of a thinner oil.

Bearing corrosion is due in large part to the formation of water condensate which finds its way into the crank case and ultimately the bearings. Water is formed as a by-product of the combustion of petroleum and a fair estimate of the amount formed from one gallon of petrol is a little over a pint. It would of course be disastrous if this

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amount of water remained in the engine. It does not, of course, but if the temperature of the engine during the time the water is formed is not high enough to disperse it as vapour through the exhaust, it finds its way down into the crank case where it helps to form sludge. Oxidation products from both oil and petrol can also be carried into the crank case and render the water acid—which makes it more corrosive. The use of an additive in the oil is, therefore, imperative in order to combat corrosion from moisture and acid, but it is most important that this additive does not give rise to solid reaction products with additives in the fuel.

In a petroil lubricated two-stroke engine the mixture of oil and petrol is drawn into the crank case where it is subjected to compression. The effect of this compression is to cause the droplets of oil to separate out, which serves to lubricate the bearings; the rest goes via the transfer ports to the combustion chamber. Within certain limits, the lower viscosity oils separate out less readily under compression than those of high viscosity, which means that for a given oil/petrol ratio more oil goes up the transfer port when a light oil is used than is the case with a heavy oil. An excess of oil in the combustion chamber gives rise to the rapid build up of carbon deposits and is also a prolific cause of plug fouling. It must be remembered that the amount of space in the combustion chamber is very small so that any appreciable amount of carbon on the piston crown or cylinder head will seriously affect the compression ratio and consequently the efficiency of the engine. The closing of the exhaust port due to the formation of a "curtain" of carbon also rapidly impairs the running of the engine.

The problem then was to prepare an oil of the right viscosity to ensure that the larger part would separate out in the crank case,

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whilst allowing sufficient to pass up the transfer ports to lubricate the upper cylinder and ring area and reduce carbon formation to the barest minimum. This oil should also contain a sufficient proportion of an additive designed to combat corrosion and ring sticking.

In order to be able safely to reduce the amount of oil in the fuel to the point where a minimum of oil passes up into the combustion chamber and a maximum for efficient bearing lubrication remains in the crank case, it was considered necessary to incorporate some colloidal graphite in the oil. Colloidal graphite is itself capable of a high degree of lubrication when dry. Its particle size is of the order of 1 micron which enables it to pass readily through the smallest oil jet and the finest filter likely to be used on an internal combustion engine. When used regularly it provides a graphoid surface on bearings and cylinder bores which ensures instant lubrication from starting up and also allows the oil to wet surfaces more readily.

The presence of the graphoid film also helps to protect the metal surfaces against corrosion. The final composition of the oil consisted of a high viscosity index lubricating oil blended with Acheson Colloidal Graphite and an additive designed to take care of ring sticking and corrosion.

This oil was used in concentrations from 1 in 24 to 1 in 48. At 1 in 48 it was found to provide perfect lubrication and complete freedom from corrosion and ring sticking under the conditions of test. A concentration of 1 in 32 is considered to be the best all round amount to use, but this can be reduced if desired once the engine has been run in. It should be remembered that the less oil there is in the petrol that eventually gets into the combustion chamber the greater will be the power output of the fuel.

Flashes

THIS journal has previously mentioned the desirability of Butyl for inner tubes, and we are glad to hear that restrictions have now been eased in regard to the use of *Butyl* synthetic rubber which hitherto has only been available to make tyre tubes for export or for official use.

"Tubes made from butyl hold the air much more effectively," states a *Dunlop* official, "and tyres will not need to be blown up nearly so often as a result of this decision.

Now that butyl, bought for dollars, can be had for tubes in the home market, these will be issued first as original equipment for new vehicles, including bicycles and motor cycles, and then for replacement. The sizes of the tubes and their availability will necessarily depend on how much butyl can be imported".

IT is nice to hear of something going down in price these days and those readers who, like ourselves, have found advantages in using special two-stroke lubricants will be pleased to hear that this news applies to the well-known T.S.L. oil.

The handy 1/4-pint plastic wallet (enough for 3/4-gallon of petrol) is reduced from 1/2 to 11d. The 1/2-pint tin is being dropped. The 1-pint tin is down from 3/6 to 3/3 and the quart from 6/3 to 5/9.

The 5-gallon drum and 1-gallon can remain unchanged in price at 75/- and 17/6.

THE name of *Lohmann* is back in the British market, but this time with a new super-sprung saddle. A test report and full details will appear in our next issue.

THE road traffic census, arranged by the Ministry of Transport and Civil Aviation, took place

during the seven days from Monday, August 17th to Sunday, August 23rd. The census was taken at 100 points, 57 on trunk roads and 43 on class I roads. No count was made on class II roads. Every vehicle passing these census points between 6 a.m. and 10 p.m. was counted on each of the seven days; and motor cycles, motor cars, omnibuses, goods vehicles, horse-drawn vehicles and pedal cycles were separately counted. For the first time, in a census of this kind, the motor cycles were divided into three sub-classes; solo, combination and motor-assisted pedal cycles.

The last comprehensive census was taken 15 years ago, in 1938, at some 6,000 points on trunk and class I roads. For the country as a whole there has been a 17 per cent increase in vehicles of all kinds since 1950 and a 23 per cent. increase since 1938.

TOTAL road casualties for 1953, including the provisional figures for December, numbered 226,520, or nearly 9 per cent. over the total for the previous year. The number of deaths was 5,070, an increase of 364.

The number of seriously injured during the year was 56,452 and the slightly injured 164,998; compared with 1952 the figures for these groups show increases of 6,101 and 12,043 respectively.

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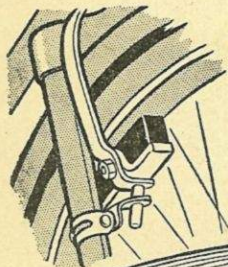
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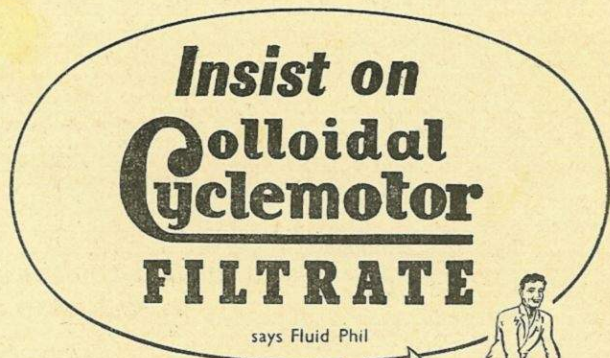
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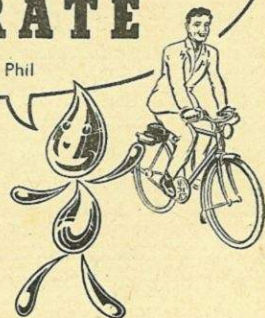
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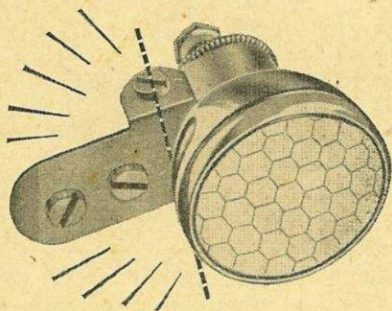
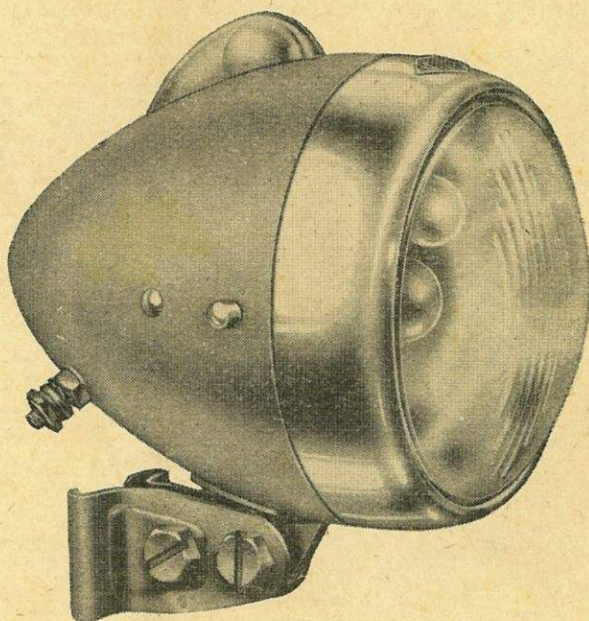
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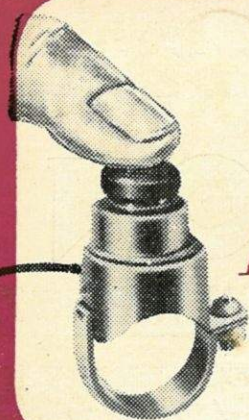
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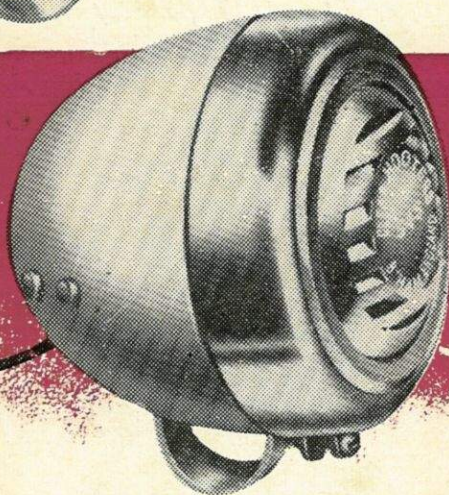


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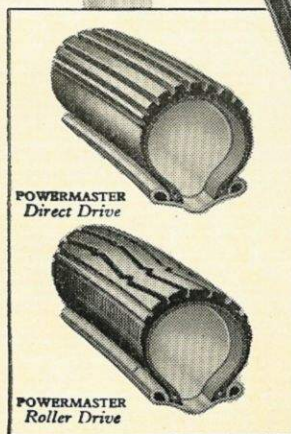
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We trust that this, our first modest step on the road towards the splendours of the full colour "glossy", will encourage our readers to introduce it to others, and give still greater confidence to the increasing number of advertisers who are finding Britain's only cyclemotor journal the way into this new field.

To all we wish good riding, good reading, and good business for the coming season.

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

No Panic, Please

THE Report of the Department of Scientific and Industrial Research for the year 1952/3 has just been published and it contains, as first item in the section under Road Research, three paragraphs on Motor Assisted Cycles

The Survey is concerned with accidents and comes to the conclusions that braking and lighting need to be improved on these machines. It notes also that a high proportion of the accidents occur to elderly riders, some "riding their first machines with mechanical controls" and that other accidents occur "because the car driver greatly underestimates the speed of the cycle". From this point the Report goes on to suggest that "some clearer indication is needed that the cycle is power assisted."

The high age group problem is natural and will stay with us as the average working age of the population goes higher and higher in the coming years. Better advice on buying the right machine for the job and some facilities for training are the answers to that.

The trouble of car drivers underestimating speeds through not knowing that the cycle in front is motorized is obvious and should

have been dealt with long ago. Over a year ago this journal sent a long memorandum to the Ministry of Transport at the invitation of the Royal Society for the Prevention of Accidents, which raised this point and suggested that the present useless rear number plate be scrapped on motor assisted cycles and replaced by a white oval plaque with a distinctive letter on it as is at present used to indicate trailers. This would shew any following driver clearly that the machine in front was powered and that the rider's right hand would probably be occupied in handling his throttle while accelerating and, therefore, not be free for signalling.

It is on the matter of braking, however, that we feel there must have been some failure to understand the conditions and requirements of the cyclemotor. The figure quoted of 48 to 64 feet for a motor assisted cycle to stop from 16 m.p.h. (the comparable figure for a car was given as 15 feet) is so bad that we feel there was something radically wrong with the brakes, the rider or the test conditions. The term "rim brakes" is used without reference to the type, thus lumping the old-fashioned "stirrup" brake with the efficient

modern caliper.

Having accepted these figures the Report goes on to say that "Hub brakes were generally better than rim brakes, particularly in wet weather". The danger seems to be that, on the basis of this most inconclusive test, some panic legislation may be imposed on the Trade, as happened in Holland last August, compelling at least one hub brake to be fitted to a motor assisted cycle. We have nothing against the hub brake, indeed a good hub brake is a very nice thing to have, but there are other factors to be considered. The renewal of a pair of brake blocks is a job for any handy cyclist and costs a couple of shillings, but the relining of a hub brake is not all that easy and inexpensive and the rider may go on for years without noticing the falling off in efficiency until an emergency, if not too late, forces some action.

We commend the substance of the Report to the Trade, but to our legislators we would say that this is not enough evidence for action. *Power and Pedal* offers its services and the combined experience of its readers in the cause of safety—May our voice be heard.

COMMENT

by

CLIP-ON

NOW that Spring is a reality and no longer a dream the riding that has been a necessity, a convenience or a duty becomes suddenly a pleasure. Even the routine trip to work and back can be made into a tourlet if approached in the right frame of mind.

A variation of routes to enjoy better road surfaces to take in a park on the way can do a lot to unfurrow the business-knitted brow and on the homeward journey at least there is time for dalliance.

On the real pleasure trip in the evening or at the week-end there is one thing that many motor assisted cyclists have to learn, judging by my observations on the roads. That is that our machines were not designed and should not have been bought to provide the fastest means of transport between points A and B. It cannot be too often repeated that the function of a cyclemotor engine is to take the work out of cycling, to make progression easier and pleasanter rather than faster. So when you are riding for pleasure, take it easy, keep the throttle under the halfway mark so that the engine runs sweetly and quietly, sit up and look around. That's the way to enjoy cyclemotoring.

Hill Climbing

As I test more and more different units I am struck by the fact that those which require pedal assistance on hills at all nearly always seem to climb better on small throttle openings. It is only the low-gear ones that can keep the revs. up at slow road speeds that can use

full throttle on the steeper grades. Not many riders seem to be aware that they will get more assistance from their engines up hills with the throttle about one third open than if the engine is flat out. It is just another variant of the "take it easy" theme but worth knowing.

On this subject of hill climbing our correspondent from Germany, "Tempo," remarks that it would be interesting to know how the maker's claims of climbing gradients of X per cent are based. He asks, "Does the engine slog along with lots of bonking in order to claim so and so gradient climbed without pedal assistance in actual practice, or is it all worked out on the drawing board? A machine can climb, say 1 in 9, breaking its heart or climb with some sort of joy".

Frankly I don't think it matters much and I would need an independent tester's report to believe any such figures. The real test is whether or not it is hard work to get up a hill, not a matter of at what point in the climb the pedals have to be brought into play.

Caliper Brakes

The report of the Department of Scientific and Industrial Research criticising our brakes and shewing a leaning towards drum brakes as a cure for all ills has caused one or two of my personal acquaintances to question my own declared preference for calipers.

I still say that I have never met any better cycle brakes than a good

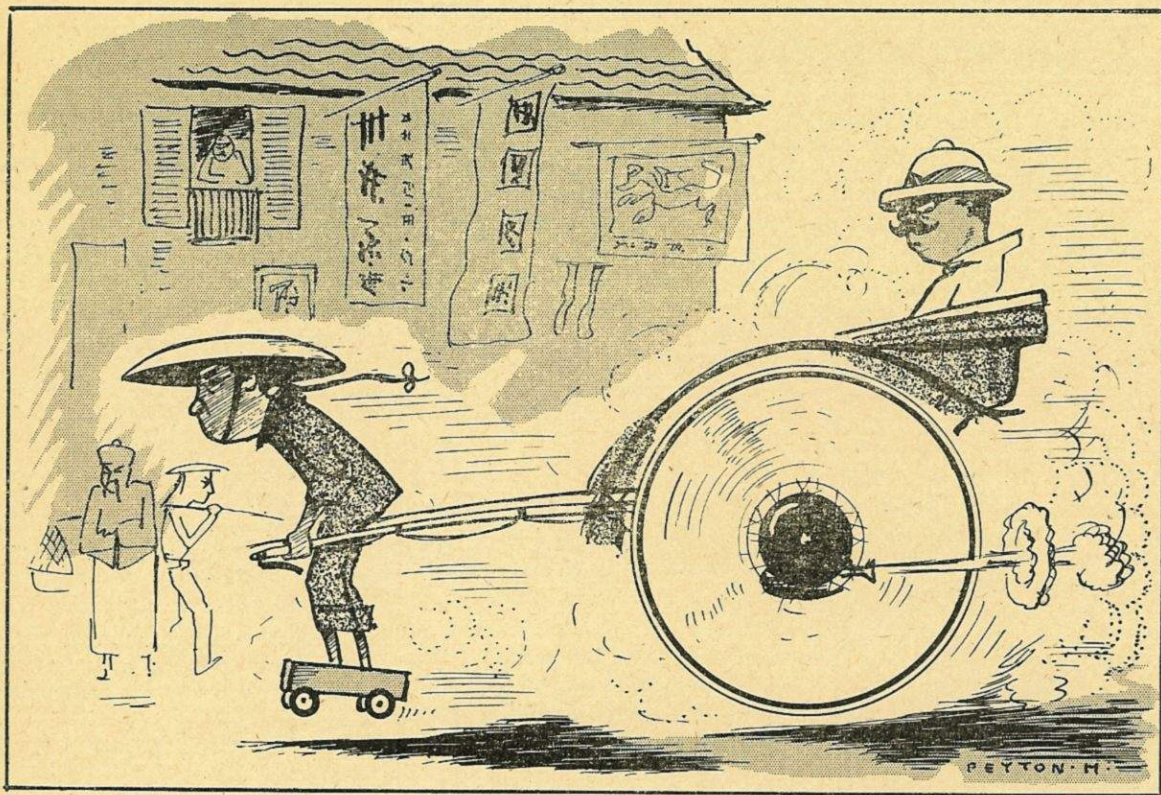
pair of calipers for smoothness, power and reliability, and the fact that they grip more slowly when the rims are wet is as much advantage as disadvantage since the same applies to my tyres gripping a wet road.

Back in the 1920's Rudge Whitworth introduced a new range of motor cycles of unusual interest. They had 4 valves per pot, 4 speeds in the gearbox, built-in lighting at an inclusive price (an innovation then) and coupled brakes. These brakes had flat shoes bearing on rims alongside the wheel rims themselves. The makers claimed that these coupled brakes could not cause skids even on wet roads, and the claim was largely substantiated simply because the wetness of the roads was matched by the wetness of the rims. They dried off after the first turn of the wheel as our calipers do on cycles and worked normally without snatch after that.

As I mentioned in this column a year ago, the car world is now turning away from enclosed drums to exposed calipers to get over the problems of "fade" on high performance cars. The *Girling* "Disc" brakes shewn at the 1952 Motor Show had three pairs of shoes on each disc and claimed that the first pair removed all the water and allowed the rest to grip first time round. Has anyone tried it on cycles yet?

Roller Slip

Talking of wet roads, the mere idea that roller drives may slip a little in wet weather seems to



It is necessary for the rider to adapt himself to the higher speeds occasioned by the use of an engine.

horrify some people to an unnecessary extent. To my mind this is not a very important thing as almost all drives must have a slip point somewhere. Wheelspin is common enough on all motorcycles and most cars and the ordinary railway engine suffers from slip as a matter of course on every getaway even in dry weather. If railway engine drivers were as ham-handed with their cut-offs as most cyclemotorists are with their throttles few trains would ever get out of their stations, but with proper control the engines pull hundreds of tons up grades in all weathers.

As long as the roller grips adequately on the move no rider should mind having to use his throttle and/or pedals intelligently when

getting away. The advantages of roller drive can be worth that slight demand.

Second-hand Values

Dealer comments on the low second-hand values of cycle-motors have caused me to collect some opinions on this matter. It is of considerable importance to the purchaser of a new machine that his acquisition may be worth less than half what he paid for it after a few months use, but there is no one reason for this state of affairs that can be corrected.

The cheapness of the new units themselves and the fact that they can be obtained on easy payments encourages the luxury of buying new. The fact that a second-hand

purchase often means having to do one's own fixing and do without guarantees or service also counts heavily with our largely non-technical riders. The fact that the unit cannot be tested except on the road, suitably taxed and insured must also count for a lot.

The announcement of a new machine that is not only competitive in first cost but also offers an over-the-counter exchange unit service at £4 a time for reconditioned engines should improve second-hand values quite a lot. If one can buy one of these machines in any old condition and change it for good as new for four quid the value of that unit can never fall very low. I hope other makers will follow this scheme. It will make a lot of difference to the market as a whole

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.

Cyclists

As another life member of the "Cyclist's Touring Club", who has now taken, after 38 years cycling and about 30 years membership of the C.T.C., to cycle-motoring, may I say that in my view the Club is right in excluding any form of motor assisted rider from membership. It is in a healthy condition as it is, and as at present constituted can better look after those who make up its membership than if it were hampered by cyclemotorists, as the two do not mix.

During a brief spell of motor-cycling some years ago I was a member of the A.A., and have rejoined that organisation, though considering that for motor-assisted cycles the thirty shillings odd annual is on the heavy side, but maybe like most things, we must pay up these days. I do think they give service to all, but could they be persuaded to reduce the annual sub for us 50 cc., then many might consider joining.

My previous statement regarding the healthy state of the cycling organisations would make me also endorse your opinion in the leading article that the "clip-on" motor is not likely for some time to die out.

I would say that demand should continue steady as long as ever cycles are ridden, and in that connection as new cycles will continue to be made for those who prefer them, as long as they can ride at all without assistance, so will there be always from that source, now we have so many excellent units available, a demand for the "Clip-on".

In closing, like T.P.C. 739, I wonder why so many *Cyclemasters* are about, but would say it is push in advertising. By the look of them they are about as bad as any for accessibility. Perhaps owners will explain.

A.A., C.T.C.

Barrow.

Another of the 100,000

In answer to TPC 739's question of why more *Cyclemasters* on the road than other Cyclemotors when he has judged them to be unreliable, I can only assure him as an owner of one this has not been my experience.

If it is a fact that *Cyclemasters* are more numerous, then they must have been widely recommended.

As regards to these he has seen being pushed, maybe in spite of the makers emphasizing the importance of a regular check-over of plug and points, etc., their owners are the very ones to ignore this advice.

Price higher than some? Yes, but don't forget the brand new wheel, special *Dunlop* tyre, coaster hub brake, lighting coil are inclusive and it is clutch driven. Speed—designed for pulling you up the hills with maximum power, and I have not found a hill to make it cough yet.

PYD 386.

Frome.

Not So Happy

I disagree with your correspondent T.P.C. 739 when he says that the *Cyclemaster* is "far slower" (than what?) My *Cyclemaster* will

do 25 m.p.h. with ease and on the flat, with a slight tail wind it will reach 30 m.p.h.

I have to decoke my engine about every 1,000 miles if I want to keep this high performance up, which I think is reasonable.

I bought my *Cyclemaster* in January 1953 because I thought it was the best. I have had a tremendous amount of trouble and it has cost me nearly £6 in spare parts. Most of these I have been able to fix myself but an oil seal which failed recently cost me 14/6d. including cost of labour.

Most of my trouble has been with the back pedal brake but I have also had three cases of the contact breakers splitting—once when 15 miles from home and no shops open!

I have also had to buy a new piston and cylinder barrel because a circlip broke and made deep scores in the barrel. Numerous throttle cables have broken for no apparent reason—perhaps it is because of the sharp bend on the lever control. Now, however I have a "twist grip" control and if the cable does break I just shorten it and carry on.

V.N.O. 123

E.17.

Vincent "Firefly"

I read your excellent monthly magazine with great interest, and especially enjoy the views expressed by your readers regarding the merits and demerits of various types of motor attachments. I would, therefore, like to put in a good word for my *Firefly*.

I purchased this machine last October, after months of deliberation and wavering between several different makes. I am fast approaching my first thousand miles powered cycling, and am delighted with the *Firefly's* performance. It completely wrecks the theory put

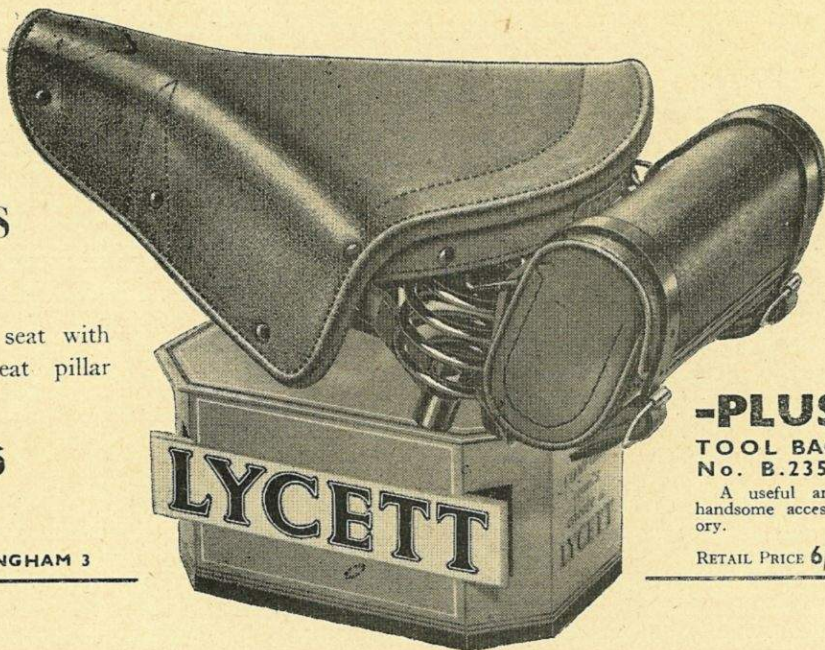
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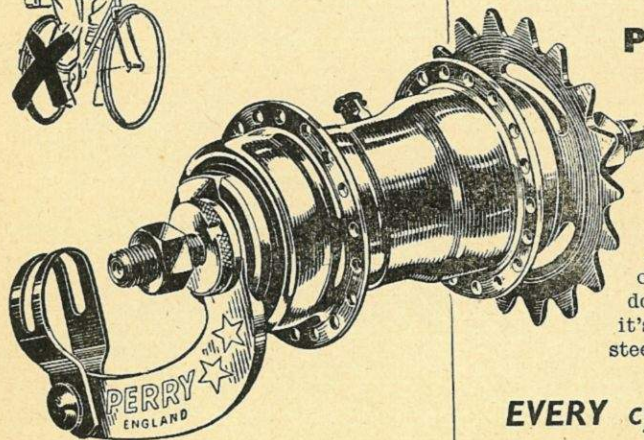


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forward by all Dismal Jimmies that a roller drive is tyre destroying. My *Firestone Powerdrive* rear tyre is still hardly worn, thanks to the fact that the large driving roller is cushioned in rubber and "gives" with the tyre. All hills are tackled, very few needing pedal assistance, and weather conditions of the worst possible type do not worry the engine at all.

The merits of this machine are obvious, and I would recommend it wholeheartedly to any intending purchaser. It is positioned in the best possible place, under-the-bracket, making for perfect safety and stability. Pulling at low speeds is excellent, and the 5-pt. tank holds enough for over 100 miles without refuelling. Above all, *Vincents* have produced a *good looker*. Nothing clumsy or incongruous about the *Firefly*. Neat, tidy and there is always power in reserve.

So you see, Mr. Editor, I regard my beloved 255 AHX as the absolute tops—I think we shall be together for a considerable time!

D. J. BERRY

N.13

The Coke Cooked

This is a thank you letter, which I wish to convey to you and Mr. J. R. L. of S.W.2., for his letter "Cooking the coke" in your issue of *Power and Pedal*, December 1953.

I have a *Cyclemaster* which had deteriorated in power, the same as he mentioned in his letter, and I at once set about to rectify it. I first renewed piston and rings, *no result*, fitted larger cylinder and piston, *still no better*, dissembled engine and fitted new valve disc, *just the same*, so pulled rotor and fitted new ignition contacts *just the same results*.

This was beginning to get me down, as I am an old Motor Engineer, running my first motor cycle

in 1903 and I know most of the tricks. However, a friend lent me two copies of the *Power and Pedal*, a magazine which I had not heard of before, and in one of them I read J.R.L.'s letter. I wasted little time before I was "cooking the coke" in the kitchen fire. The silencer was replaced on machine, and on the first push off the motor started, before this it needed energy to start, and on the road test and hill climb it was all one could desire, so please will you pass on to J.R.L. my grateful thanks, and also let me tell you that you have a new subscriber.

H. A. WHITE

Dorking

Tyre Tip for Lightweights

Many cycles are fitted with 1½" tyres which when fitted with a motor are definitely undersized and you have to pump them so hard to carry the extra weight that they are virtually solid. My *Cyclemaster* has the usual 1½in. carrier tyre for the rear wheel, have now replaced my front tyre with a 1¼" Tandem Cover which is as large in section as the 1½ rear. It has made a wonderful difference to the running of the machine and I feel much safer with it. Don't try to economise by retaining the old 1¼ tube: a 1¼ tandem tube **must** be fitted owing to the greatly increased size.

T. WAYMOUTH PRINGLE
S Croydon.

For the Future

Re the perfect cyclemotor. First I suggest that cyclemotors must now come under two main headings. Those riders who have undertaken long tours, as I did last year through Wales and the Lake-District to Penryth, will require some modifications to their original "Clip-ons". Not necessarily for greater comfort, reliability, or speed, but rather I would say after a perfect

tour on my *Mini*, for a little more luxury and for more mechanical efficiency from the little engine.

My choice then, that sturdy almost foolproof engine the *Trojan Mini* in its 2-speed form, either 49 cc. or 75 cc. (to choice) fitted to the *Britax* cycle. The petrol tank could presumably be connected easily to the engine fitted to the down tube but the rear hub-brake would have to be replaced and hub-lighting instituted. But what a performance these little 2-speeds should give. My present *Mini* has given *NO* trouble whatsoever during 5 to 6,000 miles, necessitating de-coking only, so far. And what a perfect cycle *Britax* and the *Enfield Co* have produced.

The above combination should provide efficiency and extra comfort without too much increase in weight and engine power, the two main things to be avoided. Total price? should sell if not over £50/55.

R. S. KNIGHT

Sittingbourne

Sparks

With the old Bosch or Thompson-Bennet mags., as fitted on cars and motor bicycles in the Good Old Days one could generally forget about the magneto (except for giving an occasional drop of oil) for about 20,000 miles. It seems therefore that some drastic alteration in the design of mags. used on cyclemotors is highly desirable.

OPT-I-MIST.

Seaford.

(*Our old-timers must not forget that those magnetos weighed as much as a complete cyclemotor unit and cost more—ED.*)

And no Sparks

May I briefly offer comment in the interests of constructive criticism.

Firstly, when are we going to hear of a road test report of any diesel unit? I am convinced that

countless readers await details of these ignitionless units. While the *Wico Pacy* magneto appears to function incredibly well, speaking broadly, the ignition system as we know it to-day constitutes an eternal source of trouble. An outstanding unit of German origin, the *Lohmann* appears to perform phenomenally from reports. May we hear of these "oil jobs" shortly?

FINLAY MURDOCH

Ipswich

Tandem Stands

May we through the valuable medium of your journal, ask the cycle trade, to us, a very important question?

Why can't they get down to producing a sensible, well designed, rear stand for tandems powered by *Cyclomaster*?

Some of the refinements that have been thought up are not

strictly necessary, in our view a rear stand is.

THE VINTAGERS

West Kirby.

"B.S.A." Rider

I have just finished reading the first copy I have been able to obtain of your excellent little journal. It is just the thing I have been looking for ever since I became interested in cycle-motors.

My present mount is a *B.S.A. Winged Wheel*, which I consider to be one of the best on the British market. It has its faults but they are not serious ones and I'm not complaining.

I think that the correspondence is the most interesting part of any magazine and I am pleased to see that you devote so much space to it. I also like the test reports and the technical articles and would like to see more of them, but I wish that

the prices of some of the accessories could be inserted.

W. J. M. BARKER.

Headington.

Old Soldiers and Deep Mudguards

Some people may wonder what happens to cyclemotors at the end of their useful life in their normal capacity. Mine is at present being examined by a prospective buyer who has already converted one so as to mechanize his lawnmower. Perhaps your readers have other interesting remarks in this connection.

A request to the trade. I have tried in several places to procure deep-valanced mudguards, 26in. wheel, similar to the old all-weather pattern, but without success. Any offers?

R. M. THOMAS

Esher.

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Correspondence—Cont.**Keep Them Clean!**

Re "Whiskering Plugs", this seems to be a common complaint by all, including myself until a few months ago. Having found my *Power Pak* slowly getting quieter and quieter and rapidly reducing speed, I carried out a decoke and soon restored the top speed performance.

However the "Whiskering" started again and finding no apparent reason for this I removed the plug and had it sandblasted at the local garage; this seems to have done the trick and also gives easier starting on cold mornings.

Many thanks for a most interesting Journal, looking forward to next month's issue.

H.T.P. 737.

Portsmouth.

(The advice is good, but this reader's trouble sounds more like carbon bridging than "Whiskering" of the plug points—ED.)

"Power Pak"

Having just read the April issue of *Power and Pedal*, I should like to endorse Mr. Wyatt's statement, that cyclemotors have to be kept in perfect order to get the best out of them. I endeavour to do this with my *Power Pak* and have had

no trouble with this excellent unit. The motor has covered 175 miles easily in a day, my average speed was over 19 m.p.h., and petrol consumption 220 m.p.g. On runs of about 50 miles, 20 m.p.h. can be averaged with complete comfort and it will hold a genuine 30 m.p.h.

I should like to ask if L.A.C. and Mr. Anseley can pass a *Cucciolo*; so far, this is the only motor that has been able to draw away from me. Some-day, perhaps, I shall encounter the two fantastic *Cyclemasters* of L.A.C. and Mr. Anseley and that should prove interesting!

S.P.B. 803

Weybridge.

Luggage Carrying

Although still at school, I am the proud possessor of a *Mini-motor*. Being a novice and reading for the first time your magazine, I noticed how ready your readers are to help a fellow reader over his certain problem.

The difficulty assailing me, is that of carrying luggage when touring. A haversack is out of the question, making riding both dangerous and uncomfortable, and panniers mean extra strain on the already "overworked" back wheel; is this the only way out?

I shall be glad if you print this letter as the problem is seasonable and the advice (if not grudged to a

junior owner) will doubtless prove very useful to others who must be at this time troubled as I am.

P.P.J. 56

Barnet.

Rear Stand Invention

After reading in your February issue a letter from a reader who wanted suggestions for raising the rear wheel of his motorised cycle and had suggested weights on the front wheel to raise the rear, it set me thinking about a rear stand, as I have a *Cyclemaster* and had often thought of the difficulty of having to remove this unit from the frame or repairing a puncture in it. I have successfully made a stand for my machine primarily for the two operations just mentioned, but I have now dispensed with the stand I had been using, fixed under the bottom bracket, and use my own for all occasions. I have got a Patent Cover for same and it will of course do for use with practically all makes of Cyclemotors. If you are interested would you kindly let me know.

A. HAWKINS,

W.4.

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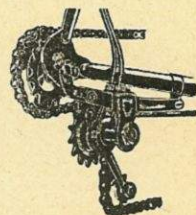
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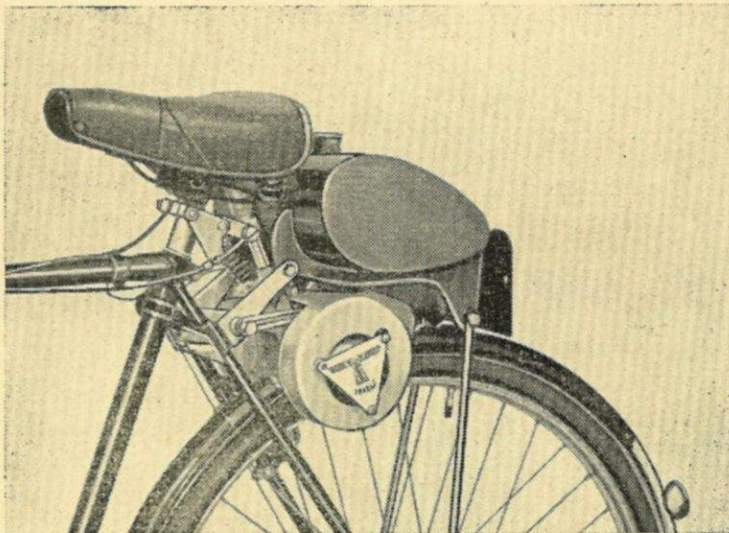
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POSITIONING THE ENGINE

An Essay in Prognostication—by the Editor

OLD MOORE has not yet sent in a contribution, perhaps because he feels that the field is too crowded. Certainly everyone else I have met is ready and willing to predict the future of the cyclemotor in Britain down to the last detail. Riders agents and manufacturers all appear to have definite ideas on the subject and it would seem that the designers of the next few years will have little need to experiment on their own to achieve perfection.

However, there is a snag about all this confidence and a major snag at that. The predictions differ widely and the range of ideas seems to be subjectively related to range of units at present being ridden, sold or made by the predictors rather than on an objective survey of the needs of the future riders and the technical and commercial possibilities of the machinery of production and distribution.

It is natural, of course, that an owner should regard his own pet as the finest thing of its kind in the world (unless it has given trouble, in which case the unit is a dead loss and the makers and dealers who produce and sell it are a bunch of low-living crooks); natural too that a manufacturer should have faith in his own product. It is even understandable that the agent should believe that the units he handles are good and that the others don't really exist. But these factors should not affect judgements on the future trends of cyclemotor design to the extent that they do.

Actually a cyclemotor engine is no more use by itself than is all the wasted horsepower in the tidal waters around Britain's 3,000 miles of coastline. The engine is only a part of a complete vehicle and all estimates of design factors must be

assessed against that background. Steering, braking, ease of handling (and man-handling), simplicity of control and maintenance, durability and appearance in the machine as a whole are all more important than sheer engine performance, and even the attachment unit must be judged by its effect on these factors.

Nearly all the people who discuss the merits and demerits of the various units seem to be mainly, if not wholly, concerned with the position of the unit on the machine. In Holland there are two very popular front wheel roller drive units and a very neat front hub unit which between them account for over 100,000 users, but in this country there is a determined prejudice against front wheel drive that is only opposed, interestingly enough, by those who have actually tried it.

The over-the-rear-wheel position is popular here because the first cyclemotor unit to come to this country was one of these and because the prices have remained low. There is little discussion about theoretical advantage over this position, it being good enough, for the riders that the things work. The under-the-bracket brigade, on the other hand, work on theory more than anything else. This position, they declare firmly, is right because the centre of gravity of the machine is low—That's all.

Most successful in sales still is the rear hub unit and here too there is little discussion about theory. The unit looks neat and tidy and does its job of providing power for transport well and the customers are satisfied. Few have ever tried anything else and, I suspect, few will unless the same firm turns to a different design.

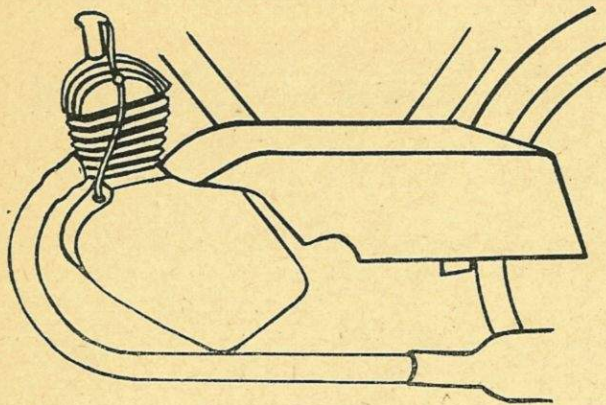
Of the discontented, those for whom none of the present machines is right, there is only one strong school of thought about future design and it comes, rather curiously, not from an analysis of future requirements but from the history books of the motor cycle industry.

The first powered cycles, they say, were pedal cycles with attachment engines and these engines were stuck on all over the machines as the "clip-ons" are to-day. But time has settled all arguments in the motor cycle field and now there is only one place for the motor cycle engine, slap in the middle of the frame. Here then, it follows, is the right place for an engine and all cyclemotors might as well accept the idea without further ado.

There are so many flaws in this argument that it is impossible to deal with them all, but the main objections to the conclusion can be stated simply and clearly enough.

In the first place 50 years ago there was no motor cycle industry and the machines developed to fill that gap. Now there is and cyclemotors do not have to compete. Secondly, if the motor cycle were providing the type of transport with which we are concerned there would have been no cyclemotor revival now. Thirdly, technical know-how has advanced in that half century and it is the development of the small, light, cheap and economical engine that has made the true power assisted cycle practicable as transport for the millions.

The present day pedal cycle is a sound, safe and easily handled vehicle and the factors which will make an engine attachment desirable will be those which do not



The "Rabeneik", using the "Cyclemaster Unit"

spoil these qualities as part of the price of motive power. Some addition in weight is inevitable but weight, so long as it is within the wheelbase of the cycle, makes very little difference to the handling of the machine on the road as is evidenced by the variety of loads one sees on cycles every day in baggage, tools, child passengers and tradesmen's deliveries of goods. Weight does, however, make a lot of difference when the machine has to be manhandled up steps and through passages as is often the case with cyclemotors in daily use. In these circumstances weight at either end of the machine or weight high up is awkward and uncomfortable as compared with weight low down in the centre of the wheelbase. But at the same time ground clearance is of vital importance for ease of handling and for avoiding damage to the unit over steps.

The cleaning and adjustment of cycle parts must not be made more difficult by the presence of the engine, local loads must not stress frames or other components so as to reduce the useful life of the machine, and the power unit with its fuel tank, pipeline and control cables must be clean and tidy enough not to detract from the neat appearance of the machine and rider.

It will be seen from the foregoing that hardly any cyclemotor unit in

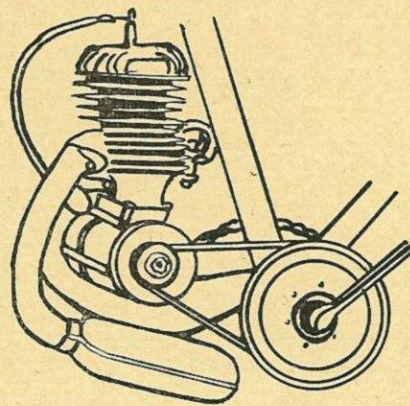
current use can be described as perfect for the job. All of them have some of the disadvantages listed and it may be reasonably claimed that the perfect attachment unit is an impossibility. This may be true and some years hence all motor assisted cycles will probably be made all in one piece and designed for the job throughout.

Nevertheless I am convinced that it is practicable to make a really good "clip-on" that will avoid nearly all the difficulties mentioned and I believe that we are not far away from it now. Let us see what is called for.

We want the weight low down and centrally situated but clear of our ankles and not at the expense of ground clearance.

There is only one place that provides all this and that is in front of the bottom bracket, the place to which nearly all continental designs are moving. From there a roller, geared down for good pulling power and light tyre wear, could only throw water and grit on to the ground. Alternatively a chain secondary drive can be taken easily to either side of the rear wheel.

The fuel tank fits logically over the down tube or under the saddle where it does not get in the way of rider or luggage and does not



The "Junior" clip-on with belt drive

detract from the appearance of the machine. Hanging the engine from the strongest part of the frame in this way reduces torque and vibration stresses to a minimum, while the unit itself is well protected from damage in the event of a fall. A further advantage of this position for the engine is that it does not interfere with the fitting of front or rear springing if desired.

We know that most of the one-piece autocycles now being sold on the continent follow this practice but can an efficient attachment unit be designed for this fitting? The answer is in the affirmative and some already exist. Our well-known *Cyclemaster* unit is being made under licence by the German firm of Rabeneik and the French *Junior* is the neatest little attachment ever, while in Britain we are familiar with the Italian *Cucciolo*, all in this position on the machine.

If I were making cyclemotors (and believe me, if I had the capital I would be. It's a wonderful field of opportunity) I would build one engine in two forms, both for fitting before the bracket, one simple geared roller, and one clutch and chain. These two would cover nearly all requirements, town and country, old and young and, with a sturdy two speed *hub* gear, long journeys or mountains. *It could be done with existing units or parts* —Try it Trade!

News from Germany

Two Interesting "Kreidler" Models

from Tempo

THE photos show two typical Moped Models now being turned out in their thousands in Germany. Taking the J.50 first we have a machine of some 70lbs. weight powered by a two stroke 50 c.c. engine. The tank is also the main curved tube of the frame and the tank filler cap is under the saddle which is hinged to make tanking-up easy. A choice of front fork springing rests with the buyer as an extra pound or two is required for a J.50 with spring front forks. A built into the headlamp speedometer is also an extra. Without pedal assistance, the model is stated to climb gradients of 12 per cent which is getting on for about 1:8. Tyres are of 23 x 2 size. A large saddle is fitted. Internal expanding brakes are on both wheels—front is about 7 inches (80 mm.) and the rear is about 8 inches (100 mm.) and foot operated. The engine is at the bottom bracket level with pedal mounting through the engine housing. Primary drive is by gearing and final drive by chain of substantial size. The makers claim a maximum speed of some 25m.p.h. (40 k.p.h.) and about 200 m.p.g. Neat cowlings covers the top part of the motor and a good chain guard runs from engine and along top chain run. Here are the details of the model, J.50.

Engine: *Kreidler* air cooled two-stroke with flat-topped piston in hard chrome lined light metal cylinder. 38 mm. x 34 mm.—50 c.c., b.h.p. at 5,000 r.p.m. equals 1.5.

Ignition/Lighting: D.C., 3.3W with headlamp 2.7W.

Carburettor: *Pallas*.

Drive: Primary, gears. Final

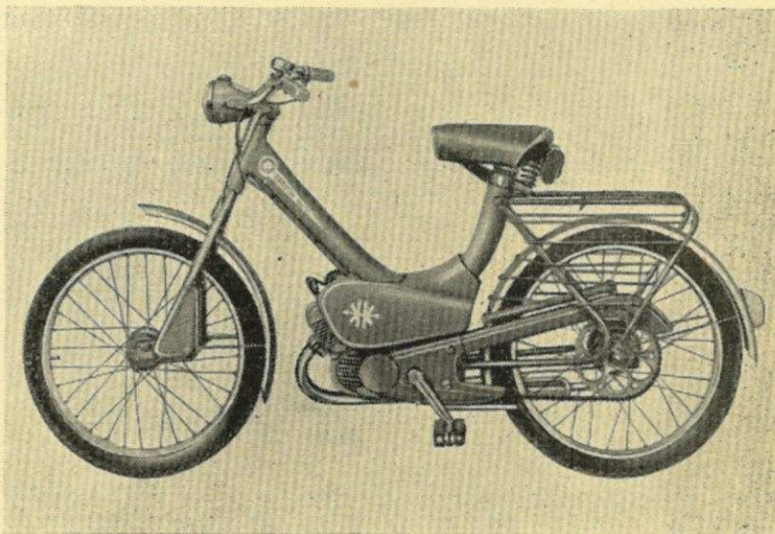
drive, chain of $\frac{1}{2}$ in. by $\frac{3}{16}$ th in. Clutch, handlebar operated.

Frame: Modern design with main curved backbone designed to hold about $\frac{3}{4}$ gallon petrol. Frame appears to be both neat and rigid, and the first half of the rear wheel is fitted with dress guard of substantial proportions.

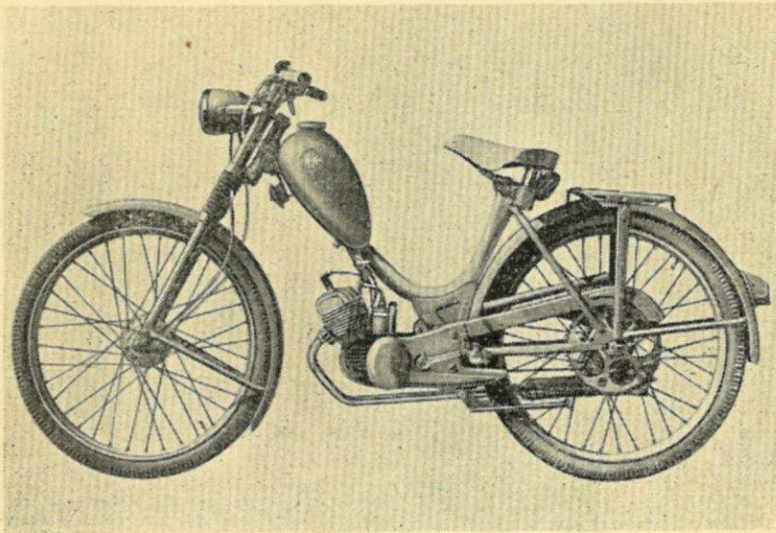
This model, is, of course, not liable to the usual motor cycle taxation in its homeland.

The K.50 is slightly different. For one thing, its weight, some

90lbs. almost takes it into the lightweight motor-cycle class and its fuel tank is more orthodox. It is to be had either "Standard" or "Luxus" according to one's pocket and tastes. Should one desire it, the pedals may be so arranged that a "kick start" action is obtained, but just what advantage there is in this, is hard to see. The brakes are similar to the J.50 model, and the chain size is the same. The makers claim that gradients of 18 per cent can be climbed on this model before resorting to pedal assistance.



The "Kreidler J50", a 500 c.c. Moped with "Kreidler" engine, and fuel tank in the curved frame tube. Engine cowlings is neatly carried out. Top speed about 25 m.p.h. Costs roughly £44 this model here. Note front fork springing. The filler cap is under the hinged saddle.



The "Kreidler K.50" Verging on to the light motor-cycle class it has a 50 c.c. engine developing 2.2 h.p. Speed is stated as about 35 m.p.h. Note the telescopically sprung front forks. Costs roughly £54 ("Standard") and £57 ("Luxus"). Kreidler also make a very pretty 50 c.c. scooter

That is about one in five. It was on such a model, well loaded too, that a rider made the trip from Munich to Morocco and back—8000 kilometers!

Here are the details of the K.50. Engine: Air cooled two-stroke of 50 c.c., 38 mm. x 44mm., b.h.p. 2.2 at 5,000 r.p.m. Flat topped piston.

Ignition/Lighting: D.C. 18W lighting, headlamp fitted with 15/15W dipper bulb which is operated from switch on handlebars.

Carburettor: Pallas 14.L.11., 14 mm. jet and air filter.

Drive: 2 speeds through control on handlebar, top gear 1:1.7 with freewheeling in first gear. Pedal mounting through engine housing and final drive by $\frac{1}{2}$ in. x $\frac{3}{16}$ in roller chain.

Frame: Main tube curved and carrying fuel tank at steering head

end, tele. front forks with 4in. movement (100mm.), tank holds about 14 pints (7 litres) and is fitted with reserve tap and filter. Tyres: Extra heavy 26 x 2in.

The K.50 is stated to do some 40 m.p.h. (50/55 k.p.h.) and uses petrol at a rate of 1.7 litres to 100 kilometers.

The prices given are for the German market and here they are The J.50 costs DM385 with spring front forks (about £44) and the K.50 "Standard" DM. 588 (about £54) and the "Luxus" DM.620 (about £57). The Kreidler concern last April, produced their 10,000th K.50 after one year's output and then proceeded to enlarge their works at Stuttgart in order to produce even more! Makers—Kreidler Fahrzeugbau, Kreidlers Metall u. Drahtwerke G.m.b.H. Kornwestheim bei Stuttgart, Germany. They also make motor cycles and Rollers (scooters to you!).

VETERAN CYCLISTS ASSOCIATION

The V.C.A. have decided to admit cyclistmotorists to membership. I am sure you will be interested to hear of this, also your readers, particularly as we are the first cycling organization in the country to do so.

A Nottingham section has been formed and is known as V.C.A. Nottingham Cyclomotor Section. We hope to hold our first trial at Whitsun. I will let you know as soon as it is fixed also all other news that may be of interest to you.

Membership of the Association costs 5/- a year, and all members receive a lapel badge and transfer for cycle also a quarterly magazine is issued free to all members.

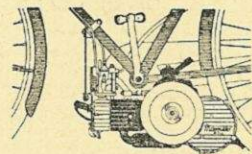
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How Long is a Tour?

With Photographs

by

ARNOLD E. BENSUSAN

This is London

The boats lying still on the gravel bed at low tide or riding gently at anchor when the water is high, remind one of a little fishing village. But this is London, a mere five miles from the centre of the metropolis.

In the background of the upper picture can be seen Kew Bridge and this place itself is called Strand-on-the-Green. There are trees and grass here, some seats overlooking the river, and the atmosphere is not the noise and hurry of London Town.

The picture on the right is the same view but looking down river. Behind it from this vantage point, quaint whitewashed cottages mingle with stately Georgian residences. Timbered facades are embellished with elaborate wrought iron bell brackets and old ships' lanterns.



ROAD TEST REPORT

A New British Unit

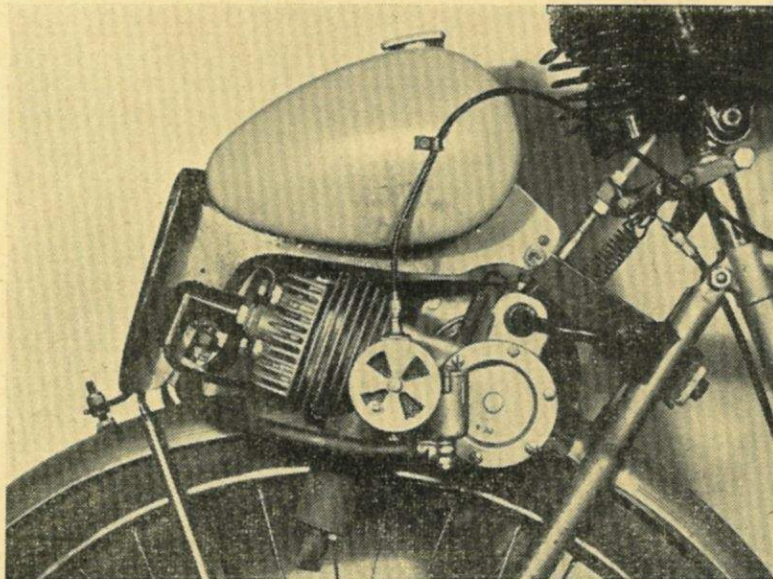
The 49 c.c. TEAGLE

THE new 49 c.c. *Teagle* is a cyclemotor with a difference, several differences in fact. It is low in price, light in weight, lively in performance. The engine has blower-assisted cooling, high grade materials and an established place in industry before coming into the cyclemotor field at all, and the sales are backed by a first class and already existing service for maintenance *ad infinitum*. Naturally we have been looking forward to testing this unique machine for some time and it is with considerable pleasure that we can now announce the results of our trial.

The *Teagle* is an over-the-rear-wheel unit with the engine set horizontally on the offside of the machine, cylinder rearwards. The cooling effect is given by vanes on the rim of the flywheel magneto and an aluminium duct shrouding the nearside of the engine and carrying the air back on to the cylinder fins, location at the engine end being by two of the cylinder head bolts. Apart from its usefulness, this also "cleans up" the appearance of the unit considerably.

The cylinder, crankcase and outrigger forming the backbone of the unit are all one single alloy casting, a detachable end-plate providing access to the crankshaft and big end, while the gudgeon pin is reached through the inlet port. The head is detachable, spigoted and needs no gaskets. The sparking plug is centrally disposed in the head.

A steel driving roller is mounted direct on to the outer extension of the engine crankshaft and is carried on journal ball bearings at both ends. The big end is a needle roller pressed into the RR alloy con-



necting rod. The expansion chamber is bolted direct on to the cylinder and points downwards with a short stub feeding into the atmosphere. Total weight of the engine, complete with magneto, cooling shroud silencer, plug and lead is only 8 lbs. With $\frac{1}{2}$ -gallon tank, cycle fittings, handlebar control, glass petrol filter, feedpipe and carburettor the total weight is just 15lbs., a very attractive proposition.

On the Road

Perhaps because of the accent on cooling, the *Teagle* takes longer to warm up than most cyclemotors we have tested. After about 3/400 yards from a cold start the engine settles down and fires evenly and pulls well.

Maximum mean speed on the prototype tested was 27 m.p.h.

rising to over 30 under favourable conditions. Main road hills were taken mostly at around 18 to 20 m.p.h. and the unit never seemed to tire even after hours of continuous up and down on almost full throttle. It took a really serious grade to bring the speed down to the 8 m.p.h. at which pedal assistance was called for.

Once warmed up the engine was very smooth and even in running with noticeable freedom from four-stroking even when running on down grades at quarter throttle. The exhaust is too noisy in our opinion but mechanical noise did not exist at all unless one counts the slight whine of the steel roller on the tyre. Acceleration from about 12 to 25 m.p.h. was very lively and other traffic could be passed in safety and comfort. The extraordinarily good balance of the

engine was demonstrated by the fact that when the throttle was shut off even at over 30 m.p.h. the engine could not be felt at all on the over-run. We can quite believe the maker's claim that test rigs with this motor have registered over 9,000 r.p.m. It is the best balanced single we have ever met.

No decompressor is fitted and starting is a matter of getting the cycle just moving and pulling in the hard "clutch" control on the left bar. No great physical effort is involved in this and there is the usual trigger control to lock the lever into position. A refinement on the *Teagle* is the provision of a ratchet with alternative positions so that the roller can be run under light load for favourable conditions and pulled in another notch for additional tyre grip in wet weather.

With the roller free the unit could hardly be felt at all on the cycle, thanks to the light weight and the fact that the well-shaped tank is carried well within the wheel-base of the machine. This, of course, is the great advantage of the roller drive machine, that it does not spoil the bicycle as such. The *Teagle* is certainly good that way. No effect on the steering could be felt either free or under power.

This prototype was noticeably reluctant to run at very low speeds and could not be persuaded to "tick over" in neutral but we understand that the production

models have already been slightly modified in this respect. Apart from this and the exhaust noise already mentioned there is little indeed to criticise in this newcomer. A slight tendency to roller slip in wet weather made gentle use of the throttle advisable on the get-away, but the downward slinging of mud which is the common criticism of rear mounted engines was not so bad as most by quite a long way, partly because of careful screening and partly because the roller is only fractionally wider than the tyre tread.

Past and Present

The *Teagle* has an attractive bright red tank and that gives a clue to its parentage, for it comes from the country and belongs to an already well known agricultural family. The engine was originally designed for agricultural purposes and has been used very successfully for a long time in a hedge cutting machine and as a stationary power plant for pumps, generators and the like.

In this field it has taken far tougher treatment than any cycle-motor is ever likely to get, and has proved itself almost indestructible. It is in this background too that the servicing system has been devised that enables the makers to offer an over-the-counter exchange engine service through dealers at £4 a time or, if the rider prefers to hang on to his own engine, the

overhaul can be carried out at the works in three days plus postage time at a *maximum* cost of £4.

This is a very real service and the fact that it is already established and working means that it can be relied on from now and not some time in the future. It adds a lot to the attractions of this light but tough little motor and we think there will be quite a lot of those tractor coloured tanks on the roads very soon.

Last but not least, the price is right. The "Super" model as tested retails at 17. 10s. 0d., complete with a set of high grade spanners and a pair of number plates. There may later be a "Popular" model at a still lower price without the blower cooling, tools and number plates. Either can be 10/- cheaper still without lighting coils.

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ANOTHER "DIESEL"

WE still get so many tender enquiries after the little German compression-ignition engine that made a brief appearance here in 1952 that it is obvious that there is considerable rider interest in this type of unit. The advantage of having no electrical works at all to pay for, maintain and carry around is felt by many people to be the clue to the search for the perfect cycle-motor. It was, therefore, with considerable interest that we heard of an Italian unit of this type coming over and we hastened to arrange to see and test it.

The unit is called the *Lupetto* and it is an under-the-bracket job of 39 c.c., using a geared down steel roller drive on to the rear tyre. Despite the fact that it is extremely robustly built, the complete attachment, including the 3-pint petrol tank, weighs under 19lbs. and, when fitted, makes no difference at all to the feel of the cycle.

Tested in brand new condition the engine gave a mean maximum of about 25 m.p.h., a figure that would no doubt go up as it was run in. Pulling power is good over a wide range of revs. and there is a nice feel of certainty about the way the engine slogs up hills at 10/12 m.p.h.

The chief problem in marketing this type of unit is the comparative complexity of the control system and the *Lupetto* shares this problem. The throttle is a lever under the right hand, a double-acting twist grip on the left controls the compression, the carburettor has a finger operated flooder and a "choke" (actually a mixture control) that is best worked by the left toe, all this in addition to the engaging lever in a neat "gate" mounted half way up the front down tube of the cycle. Whatever Italian riders may think of it, this system needs simplification to appeal to the British market.

The unit tested was too new and stiff to start easily from cold, but once warmed up and free it came in with ease and certainty every time. It was found easiest to leave the throttle lever open and drive on the compression control, the sound of the engine providing all the information needed to keep the engine at optimum performance.

The manufacturers of the *Lupetto* do not intend to export it to Britain but are anxious to find a British manufacturer to take it up for the home and Commonwealth markets. We hope that one will be found with the interest and the plant capacity to develop this very promising unit.

Manufacturers who may be interested in the production of the "Lupetto" engine in this country should address their enquiries to : Messrs. ADI-MAR, 26 BRIXTON ROAD LONDON, S.W.9.

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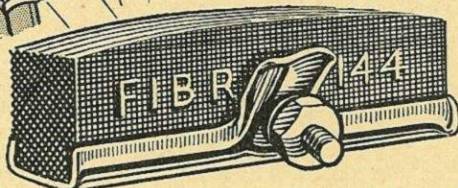
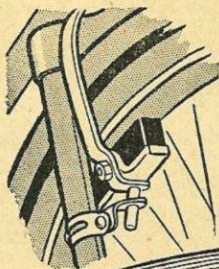
ROAD TEST REPORT

LOHMANN SADDLES

SOME of our readers were disappointed when they misread the little item in our "Flashes" column last month and thought we were announcing the return of the *Lohmann* c.i. engine to the British market, but none are likely to be disappointed with the thing that we actually have tested, a saddle of the same name with a springing system that really works yet is light and neat at the same time.

The *Lohmann* saddle has all mod. cons., a real leather or plastic top as desired, of conventional design and appearance, plus mattress springing underneath, plus also a large coil spring mounted horizontally above the seat pillar so that the saddle hinges at the nose and gives a wide range of movement when a real bump is encountered.

Because of this mounting it has to be noted that the saddle must be fitted very slightly nose down as compared with ordinary mountings. This brings it into a normal position when the rider's weight is



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placed on it. Once under way very little movement is felt but the road surface just appears to be improved as the combination of mattress top and steel spring absorbs the irregularities of the ground.

In size and shape the *Lohmann* differs very little from the ordinary touring cycle saddle and it will be particularly attractive to the cyclist

becoming motorised while still an active pedaller. Pedalling is not interfered with in the least by the extra suspension movement while the 9in. width at the rear of the saddle gives a comfortable seat for just sitting on while the engine does the work. Altogether a nice idea and a welcome addition to the range of cyclemotoring accessories "Built-for-the-job".

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T.S.L. MEANS
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Flashes

THE Queen has graciously consented to be patron of this year's Cycle and Motor Cycle Show at Earl's Court from November 13 to 20.

IN response to a widespread demand for a 26" x 1 $\frac{1}{4}$ " tyre for the hundreds of motorised cycles with that size of wheel, Dunlop are adding this size to their Motorette range, and are providing plant to make it. Riders and dealers will be advised when production begins.

T.T. RACES and Clubman's Trophy Races. The Official Guide and Programme for this year's T.T. and Clubman's Races, containing full information of all the events will be ready at the end of May and copies may be ordered singly or in bulk direct from the A.C.U. price 2/6 each, post free. Orders can only be acknowledged prior to the despatch of the programme if a stamped return postcard accompanies the order and remittance.

This pocket-size programme will comprise 72 pages plus a full-colour cover, a separate large-scale map (16in. x 10in.) and a separate 24 page scorecard booklet. It will contain articles by leading motorcycle journalists, a guide to the course and ample illustrations of interesting machines and outstanding drivers.

The programme is a most comprehensive guide to the Races and despite its size and the attractiveness of its contents, its price remains at 2/6.

THE editor of *Power and Pedal* was among the small group of cycling journalists invited to visit the new Waverley Works of the



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OPP. PADD. MAIN LINE STN.

B.S.A. Cycle Company in Birmingham recently. His impressions of the visit will be described in our next issue.

THE proposed new rules for reflectors and rear lamps have now been published. Those for reflectors will apply to all vehicles from 1st October, 1954. The rear lighting regulations will apply on new cyclemotors and autocycles from 1st October, 1955 and on existing machines from the same date in 1956. The M.O.T., however, expresses the hope that the public will not wait until the final dates to implement these important safety regulations.

Minimum sizes are laid down for lamps and reflectors for the first time but "for the present" the power of rear lamps on our vehicles will not be specified beyond maintaining the existing requirement that they shall be "visible from a reasonable distance".

NEW ELECTRIC HORN

A horn has been specially designed for use on lightweight motor cycles, auto-cycles and bicycles which have no electrical supply of their own. This horn, which is called the "Cadet Model 545", is manufactured by Clear Hooters, Ltd., and distributed by Wico-Pacy Sales Corporation at Bletchley.

It has been designed on modern lines with a silver finish and chromium plated front. It is operated by a push button which can be conveniently located at the rider's fingertips. The standard 1.7 volt dry battery is housed in the watertight body and is capable of giving up to 10,000 clear hoots.

The horn complete with switch cable and clip will retail at 16/6., and the sole concessionaires for the United Kingdom are Wico-Pacy Sales Corporation Ltd., Bletchley.

CLUB NEWS

THE LONDON MOTOR ASSISTED CYCLE SECTION OF THE BRITISH TWO-STROKE CLUB

Secretary's Comments

Here we are in May, with the Doreen Hundred ahead of us. For this event we shall need non-competitors to act as marshals, so if you don't feel inclined to take part in the event itself, then come along anyway and help us out.

For those who do wish to compete the entrance fee will be half-a-crown. I hope that there will be several entrants and that they will not be confined to the owners of the larger capacity machines.

The organising of the start of this event will take place at a cafe in North Weald. Details of the course will be made available later, but in any case there will be an opportunity of going over the course a week before the event.

Afterwards there will be a Social, when the "Doreen Trophy" for the winner, and second and third prizes will be awarded. Bring along your wives or girl friends, (or even both), only let me know beforehand so that arrangements for transport to the rendezvous can be made.

Club Tour in Wales

Next Month

A word about the tour to Haverfordwest in June. This will start on the 4th at 9 p.m. from Marble Arch, picking up en route at the "Better Cle" Cafe, at Isleworth, on the Great West Road (A4). The tour will be through some of the finest scenery in Wales. The return journey will be made on the Monday. Will members please note that the closing date for entries for the tour is May 15th; this is so that final arrangements can be made for accommodation,

Club Room Wanted

At the moment we are trying to find a Club room in North London where we can hold the fortnightly Club nights. If we are successful we will also hold an open social evening, as soon as our funds permit. I would be very grateful if anyone knowing of a suitable room at our disposal, preferably in a public house, would contact me so that I can make arrangements as soon as possible.

The Section committee is working hard to give members a full programme of social and sporting events, so please back us up and make our efforts worth while by giving us your support.

One other point: will members please forward their renewal subscriptions as soon as they become due. Later on it may be arranged to send out reminder notices to each member.

Listed below are the Section events for May.

SUNDAY Country run to Cambridge. Meet at Marble Arch 9 a.m.; "Georges Cafe", 30 Green Lane, Palmer's Green, at 10 a.m.

SUNDAY Run over "Doreen 100" 9th course.

SUNDAY British Two-Stroke Club, 16th Annual General Meeting.

SUNDAY The "Doreen Hundred" 23rd: competition.

Meet: Marble Arch 9 a.m.

Manor House Gate, Finbury Park, 9.30 a.m.; "Napier Arms", Woodford, 10 a.m.

"CUCCI" CLUB

NEW CLUB is announced in London, the Ducati-Cucciolo Motorised Cycle Club.

Notices of meetings, week-end runs, Trials, etc., are to be seen at Stringer's Garage, Bury Street, Edmonton, N.18. The Acting Secretary who writes us is Mr. E. L. Keats, 50 Vallance Road, N.22.



Hurrah!

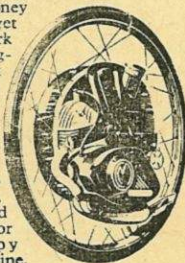
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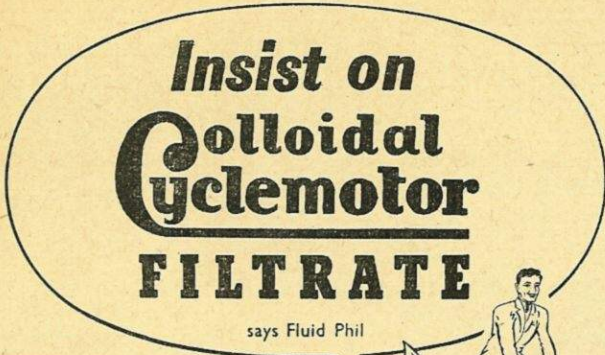
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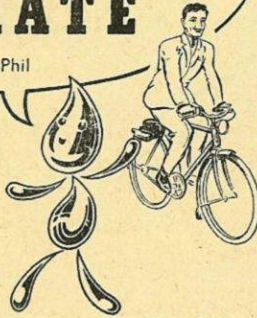
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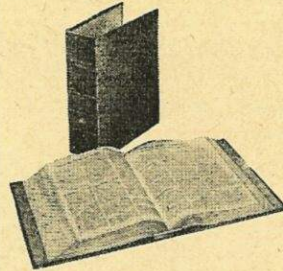


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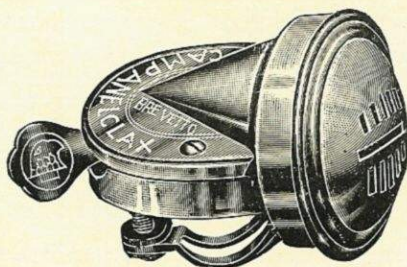
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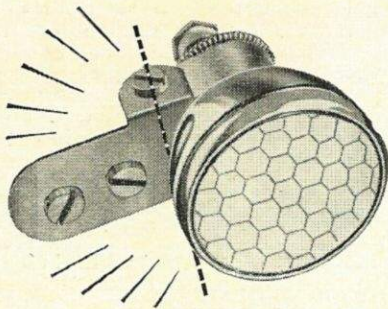
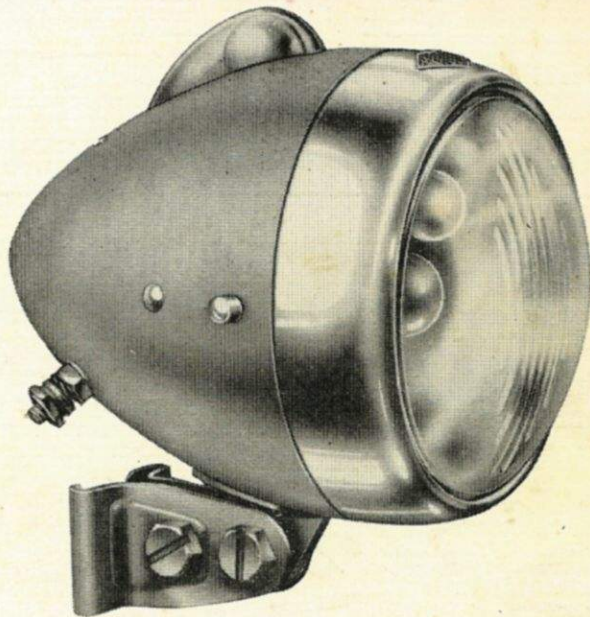
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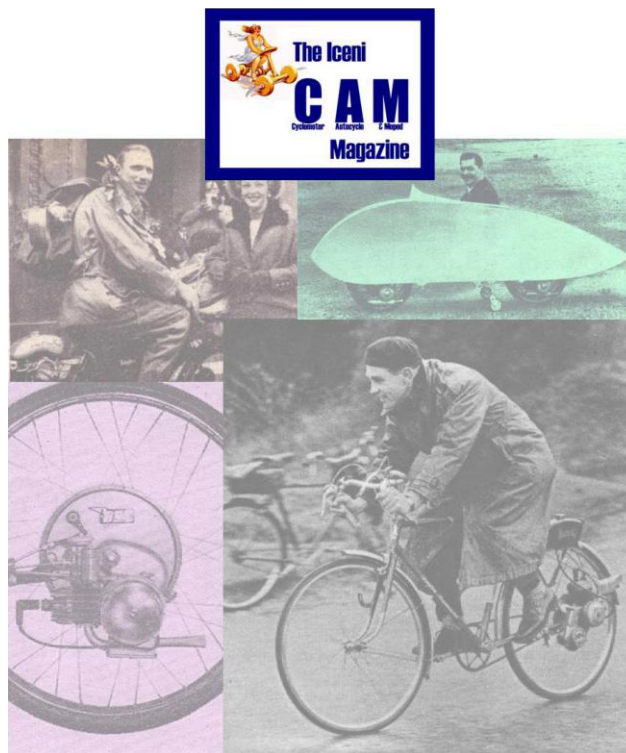


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