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POWER & PEDAL

The Journal of the Cyclemotor

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ROADS

IN the last days of the last session of parliament, just before rising for a twelve week recess, the House of Commons debated the financial resolution concerning Traffic Congestion and Road Accidents.

Most people feel strongly about road accidents; few have the knowledge or access to the facts and figures that will permit a complete picture of the problem to be built up, and each individual tends to argue that the particular class of road user to which he or she belongs is least to blame for the admittedly terrible accident statistics on our roads.

Editorially speaking *Power and Pedal* lays no claim to objective superiority. This journal exists to further the interests of cyclemotorists and makes no apology for such candid partisanship. Nevertheless we have studied the report of the debate in conjunction with all the available official statistics for recent months and we believe that the point of view of the cyclemotorist is one that should be taken into consideration when road improvements are being planned.

Most cyclemotorists are already cyclists of some years experience, many are veterans and a surprisingly high percentage have driven other types of powered vehicle. With so much experience there it is not surprising that the safety record of the motor-assisted cyclists is very good, apart from the simplicity of control, light weight and modest speeds of the machines themselves. Their actual experiences have moulded their opinions and we find an almost complete unanimity of ideas among them as to what characteristics in roads make for safety.

All two-wheeler drivers without exception will place skid-free surfaces as the first and most important contribution to road safety. Even though actual skids may be comparatively rare, the nervous tension and inability to maneouvre freely imposed by riding on slippery surfaces are potential sources of trouble.

Careful observation and the questioning of riders made the point we have not seen mentioned elsewhere that very wide roads, especially in urban areas, tend to add to danger. It seems that the recent comments of the Ministry of Transport on the high accident rate of vehicles turning right are mainly applicable to wide roads which demand the crossing of two or three lanes of traffic to get into position for a turn.

Wide variations in the exposure time of the amber light seem to cause a lot of difficulty, but the worst trouble of traffic lights is that they are frequently so placed that few of them are visible to pedestrians waiting to cross so that they do not know when the stream of traffic is going to stop or start.

Fourthly, street lighting standards vary too much. We cyclemotorists can see where we are going but we cannot always be seen and reflectors as big as dinner plates will not save us from being bumped behind by car drivers who have just crossed some nameless boundary line between boroughs that means a switch from the shadowfree golden glow that is our best urban lighting to a spell of black-and dazzle that is still too frequent. This would not be expensive to rectify *quickly*.

These simple points are not flights of imagination or castles in the air and we do not claim that they offer anything new in themselves. But we believe that if the motoring, motor-cycling and pedestrian organisations each contributed a few practical points of this sort the result would be of real value. Probably more accidents are caused by careless, selfish and bad-mannered driving than anything else, but so far as the Minister's declared intention to spend the money available in tackling road improvements in black spots is concerned, we offer this contribution to the results we all hope will be achieved.

COMMENT

by CLIP-ON

Night Riding

ONE thing that Summer does for us is to make the nights saddleworthy. Whatever may be the charms of Winter riding in daylight, no-one can pretend to like it after dark, but at this time of the year the night can often be the best time for riding, especially for suburbanites.

The absence of most other traffic and the absolute quiet are big advantages themselves but the best part is the intimacy of one's only little piece of visibility as against the endless vista of buildings that form the townsman's usual scenery. In the light of a good headlamp normal cruising speed can be maintained without effort, the road unfolds itself a comfortable visual range ahead and the clean freshness of the night air after the fume-laden breathing matter of the day is a pleasure to the lungs.

In the country, of course, the pleasure is as great but the contrast with daylight riding over the same territory is not so marked and there are losses as well as gains in the limited range of view. To the urban rider who has not tried it I suggest a quiet midnight ride one warm night. I will wager it will not be his last by a long way.

Pillion Seats

The announcement in our last issue that the *Power and Pedal* insurance scheme would cover pillion carrying led one acquaintance to go forth to buy a pillion seat for his machine in order to provide some short distance utility transport for his young son. Then came the shock—there is, apparently, no such thing as a lightweight pillion seat of reasonable proportions designed to fit on a flat cycle carrier. Shop after shop has said no, and he is still trying to find " a proper seat securely attached " on which to carry his perfectly legal pasenger.

All that is required is a baseboard some 9in. x 5in. with a couple of " U " clips under it and a layer of sponge rubber on top. We used to buy seats like this for our motorcycles some years ago but they seem to have disappeared from the market. If some handyman cares to make up a few and advertise them he might do a good trade at a modest price. Light footrests, perhaps threaded to fit on to the rear wheel spindle, will be needed too.

Front Drive Springing

Spring forks are only a necessity on the faster machines in the cyclemotor class, *i.e.* those which cruise at over 25 m.p.h., but they are so much more comfortable at any speed and add so much to safety by improved wheel adhesion and braking power that even the slower riders will go for them sooner or later.

As the engine over the front wheel has a lot of advantages for the utility rider, especially the man who is not so young and supple as he was, there should be a front springing system that can be used, on front-wheel-drive machines. Our friends in Holland have one, a neat-looking parallel-ruler type job with rubber suspension, designed primarily for use with the *Berini* unit and it looks as though our *Webb* fork could be easily adapted in the same way. Will some manufacturer have a go at this market here ? The fork will not be needed for high speeds, only for comfort and safety, so it should be light and reasonably cheap to fill the need.

Otto Engines

Why they pick on me I don't know, but several quite knowledgeable types have jumped in to tell me that the information contained in our article " History " in the July issue was all wrong. Nicholaus August Otto, they say, made fourstroke engines, not twostrokes, and gave the name Otto-cycle to the fourstroke principle.

Actually these people are partly right. This was the Otto who built the first practicable fourstrokes but the first of these did not appear until ten years after the Otto twostroke engine as depicted in our photograph. This engine had a single inverted piston attached to a long bar with teeth cut in one side. The combustion head was at the base of the cylinder and ignition was by bunsen burner.

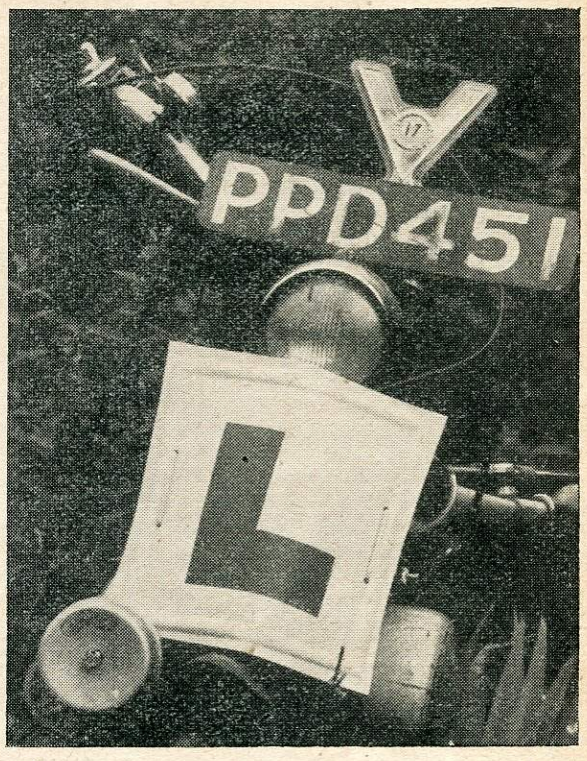
When the " bang " went off the piston and its toothed bar shot up to the top of its stroke, there the teeth engaged with a freewheel pinion geared to the flywheel and the work was done by the piston and con-rod descending under their own weight (one hundredweight, incidentally). I saw one of these engines in the museum of the well-known diesel engine manufactures, Crossley Brothers, Ltd. of Manchester a few years ago. It had been in use until the 1920's in a printer's works in the city and is still working now.

Without

Comment by Clip-on

Our favourite contributor's own favourite subject — "The Law is a hass" — here illustrated.

This Owner, a car driver whose Veteran Motorist's badge evidences seventeen years of accident-free driving, has to put up an "L" plate on his motor-assisted cycle because he has not passed the motor-cycle driving test.



The principle of the fourstroke engine was first put on paper as far back as 1838 by Barnett, but Nicholaus Otto made the first one that worked in 1876.

This Insular Race

My opposite number, the commentator in our Netherlands contemporary, *Fietsmotor*, has some amusing remarks to make about the obstinate way we in Britain do things differently just to be awkward.

"When at school," he says, "with much trouble we had learnt that ten times one makes ten, ten times ten a hundred, and ten times a hundred equals a thousand, in short, when we had more or less mastered the decimal system, our illusion that this world wasn't too bad after all was cruelly destroyed by our teacher when he told us that in England they don't hold with this system. There 12 pence make 1 shilling and 20 shillings 1 pound, a pound in weight isn't the same thing, and kilometres they don't have over there either. The British on their island count, weigh, and measure differently from anybody else in the world.

"Now that every where else 50 c.c. is being accepted as the maximum cylinder capacity for cyclemotors, in England they want to put it at 60 c.c.

"Really," urges this commentator with understandable sarcasm, "We must never let our freedoms be curtailed by any mere international agreement".

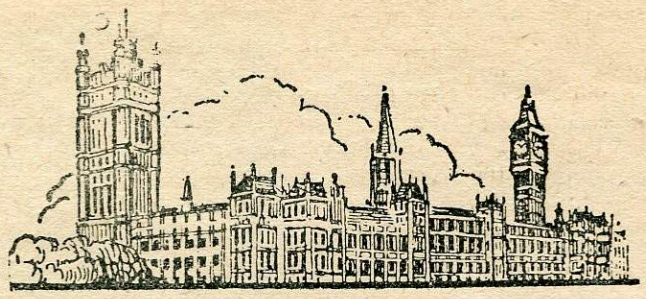
I have heard the story before that the British representative at the last U.N.O. Traffic Conference had plenty to say about regulations for cyclemotors and then refused to sign the draft agreement, so it is understandable that some of these foreign types find us difficult to get on with.

Engine Kits

My remarks a few weeks ago about a German firm who are offering a 25 c.c. diesel-type cyclemotor engine in kit form for the enthusiast to build up for himself at home have brought in a lot of enquiries from would-be buyers who want to know the name of the maker and the agent in this country. I am sorry but I cannot oblige as I simply don't know.

The information came from Dutch sources and these in turn had received it from Germany simply as a news item.

If anyone here or in Germany should know the answer and let me know I shall be glad to publish the information and assist contact.



A Parliamentary Wheel

There is nothing outwardly significant about my *Cyclemaster*. It is not new, it is not fuel-injected, it hasn't made a record-breaking continental tour. But as *Cyclemasters* go, it is among the most privileged in the country, for it has permission to enter and stand in one of London's most exclusive parking grounds—New Palace Yard, at the House of Commons.

Spectators clustered at the gates for a glimpse of our leading legislators' limousines have often gazed, amazed, and then raised a smile and a wave as my 25 c.c.s. popped past, sometimes in the wake of a Cabinet Minister. Always the friendly policemen, whose duty it is when Parliament is in session to ensure that the M.P.'s have free access to the House, stem the busy flow in Parliament Square when my *Cyclemaster* comes and goes.

You will have read many accounts of all-night sittings of the House, and heard that M.P.'s are as extravagant with the midnight oil as a veteran two-stroke is with petroil, but have you ever wondered how the reporters who wrote those stories reached their beds ? No ? Neither had I, until I joined the Parliamentary staff of a London daily newspaper.

The "normal" hours of the House are from 2.30—10.30 p.m., Monday to Thursday, and 11 a.m. —4.30 p.m. on Fridays. BUT, when certain business is discussed, the hours of sitting may be extended for an hour, or two hours—or indefinitely.

There is no reliable means of forecasting when the House will rise, and the last train leaves Westminster at 48 minutes past midnight.

During my first year at the House, on the many occasions when debates ended in the early hours, I covered the eleven miles to my home in the suburbs by tedious methods, expensive taxis, and at the expense of my feet, often starting the trek after twelve or fourteen hours' work. Sometimes I would miss the last train by a platform's width ; at others I might catch an earlier train, only to miss the last bus home from the station. Despite my even temper I was invariably provoked to unparliamentary language at such times.

However, I reminded myself that several of my Press Gallery colleagues living in the Home Counties were "stranded" for the night if they missed trains as early as 11.30 p.m. "Consider yourself lucky", I thought. "At least you don't have the prospect of chair dozing, with Big Ben booming at you every fifteen minutes". Then I would reflect on the cheerful, back-slapping fellows who had a Utopian 24-hour train service to Much-snoozing-on-the-downs, fifty miles from London. "*Good*-night old man", they would laugh, unwittingly bestirring the devil in me.

The climax came on a cold, wet night in March. The House adjourned at something like ten minutes past two, and the policemen in the corridors took up the traditional cry, "Who goes home ?" which originated in the days of the footpad, when London streets were no safer than in to-day's rush-hour, and when honourable Members banded together in parties to ensure a safe journey home. I gave a hollow laugh, remembering the train that had left half an hour earlier.

Every taxi in London had, it seemed, been spirited away. I plodded two miles to the nearest all night bus route, which runs to within two miles of my home . . . a red light was just fading away in the distance. One hour to wait in the rain. It was still raining when I got off the bus. I trudged up the long hill, tottered down the other side and crept into my house. The time : 4.40 a.m.—two and a half hours to travel eleven miles.

As I lay in bed, my thoughts turned to my bicycle, standing idle in the garage. "Couldn't you leave it at the station ?" suggested

my wife, but simultaneously we remembered that the station cycle store closed at midnight. A car was still a distant dream, and as for motor cycles, a 95 m.p.h. pillion ride still thundered unpleasantly in my memory! Then, as I began to doze off, there came the thought . . . one of those little out-board motors . . .

A week later I was bound for Westminster, navigating the sea of mid-day traffic, with a *Magic Wheel* at my heel. The hazards of that maiden voyage almost shattered my nerves, for I seemed to encounter all the most fiendish motorists and profane taxi drivers in London. In spite of 20,000 miles of war-time continental driving, I found that cyclemotoring was an art, which bore no comparison to pedal cycling or motor driving. I could have performed much better with six pairs of hands.

Nevertheless, when Big Ben chimed 2 a.m., and I set course for home along deserted roads, I could not have felt more independent of trains, buses, or taxicabs with a *Jaguar* XK120—and what was 100 m.p.h. difference in speed? Within forty-five minutes I was home.

That was more than two years ago. To-day my *Cyclemaster* has covered some 9,000 miles, and has a record number of "late sittings" to its credit.

Experience quickly taught me that full-dropped handlebars and a bone-hard saddle were uncomfortably incongruous on a powered cycle, and that celluloid mudguards don't really stand the strain. So far, I have coped with all maintenance myself, including five decokes, and, apart from the usual cycle-motorists' snags, performance has been increasingly good. I attribute this chiefly to branded petrol, regular inspection, watchfulness for wear or bad adjustment, and scrupulous cleaning.

By mapping out a route avoiding such nightmare stretches as Hyde Park Corner, Piccadilly, and Trafalgar Square, I have cut the time on the 11-mile outward journey to 40 minutes, and the return ride to 30, thus taking full advantage of the speed and power of this egg-cup engine.

Without embarking on the pros and cons of motorized cycling in London—a feature which *Power & Pedal* readers could no doubt debate indefinitely—I can say without hesitation that my Parliamentary cyclemotor is a first-class answer to the ancient question of "Who goes home?"

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

B.H.P. No Criterion

Mr. L. Smith, a writer in the August issue of *Power and Pedal* is, I am sure, of the same opinion as a large number of "Clip-on" fans, and seems very interested in actual B.H.P. figures for the various Power Units.

May I point out now that at least some of the engine manufacturers have deliberately incorrectly ported their engines to limit the top performance and improve M.P.G.

I have actually proved this on my own Mini-motor by modifying the porting (not just enlarging the exhaust port as many people think will do the trick). Its pulling and accelerating power is now well in advance of any other cycle owner unit in the district, and although the top speed is not fantastic (36 m.p.h.) this being partly due to the bore stroke ratio, it will accelerate to this speed without delay, and will also accelerate up a gradient of 1 : 15.

Although it is not advisable to ride for long periods at this speed it is nice to know that the power is there when required. I am not connected in any way with any of the manufacturers but I do think it a little unfair to judge the merits of the particular units on the market to-day in terms of their B.H.P.

T. WOODERSON

Camberley.

Two-Stroke B.H.P. Figures

Mr. Smith's letter (August issue) quoting B.H.P. of two 49 c.c. engines is the answer I had expected from him, for I was, of course, aware of the figures attributed to these two machines by *The Lightweight Motorcycle Manual.*

However, my experiences with engine design and power output, lead me to be a little sceptical of *most* published figures, expecially when quoted on sales leaflets.

I accept the figure of 1.25 B.H.P. for the *Ducati* product because it seems to my mind to be reasonable to do so, bearing in mind that the engine is a high performance overhead valve unit, and that the B.H.P. quoted is at 5,250 R.P.M.

Having accepted the *Ducati* figure, I find it very difficult to believe that a 49 c.c. Two-Stroke is capable of producing even an equal B.H.P. at only 3,000 R.P.M.

I would remind Mr. Smith that the Italians are renowned for producing high B.H.P. from small capacity engines, and in this connection I should like to refer him to the Road Test Report of the *Itom* in the June issue of *Power and Pedal.*

The performance as given in this report of a 48 c.c. Two-Stroke engine is second to none. To quote *Power and Pedal* "it is going to set new standards in performance and cause many of us to revise our ideas of what can be got out of a pint pot" yet only .9 B.H.P. is claimed at 3,500 R.P.M. and I accept this figure, simply because it seems to me to be reasonable to do so.

I ask Mr. Smith to read the report carefully, and note the advanced design of the *Itom* (a product of modern theory) and may be he will have second thoughts on B.H.P. or may be he can see something in the design of the two engines he mentions to give them an additional .4 B.H.P. over the *Itom.* I certainly cannot.

No, Mr. Smith, I do not accept figures quoted on sales leaflets at their face value, but prefer first to examine the design in conjunction with the figures quoted and draw my own conclusions as to whether the B.H.P. claim is reaonable, or has been arrived at by high pressure salesmanship.

This will be my last letter to *Power and Pedal* on this subject as I do not wish to waste too much of your most valuable space on a "storm in a tea cup".

My registration number is LXC 563, and if Mr. Smith should at some future date see me on the road, I shall be very glad to have a chat with him. Best of luck to Mr. Smith, and to you Mr. Editor for the continued excellence of your journal.

L. S. ROOKE

S.E.6

Fuel and "Flats"

I have only recently discovered your magazine at New Street Station and have now placed a regular order for it. It is just what I have been asking for and I congratulate you on its publication.

May I be permitted to ask your readers the following questions.

Do they find garage people willing to sell less than a gallon of petrol? I recently rode from Birmingham to Matlock and had to take a gallon of petrol with me—I fastened the tin by straps to my cross bar—it looked most unsightly. If there are half a million motorised cycles why doesn't some enterprising firm make a ¾ gallon clip-on tank for our use? This would mean that with the quart in the tank and the ¾ in the reserve tank long distance travel would not be so difficult.

I have a *Cyclemaster* and have done over 1,500 miles with one

decoke so far. My average speed is 20 miles on the flat—one occasion I did reach 38 ! ! ! I was in a hurry —it was pouring with rain—it was down hill !

Have other *Cyclemaster* users come up against this snag ? I had my first puncture the other day and being only half a mile from a cycle shop I wheeled the cycle to the shop. That short push meant that the whole weight of the engine was on that 'flat tyre'. This meant a new inner tube (the original was gashed by the rim of the wheel) the charge was 6/7d. for a new tube and 3/- for fitting. Can any reader suggest a means of overcoming this real difficulty ? I couldn't mend the puncture on the spot, as usual it was raining heavily at the time and I was on my way to a meeting.

Mr. Smith's idea for a *Power & Pedal* Club is excellent.

Again thanking you for this wonderful journal and hoping that you will be able to forward me the back issues.

Smethwick (Rev.) L. GAMSTON

Another " Foreigner "

I have a cyclemotor of continental design which has no clue as to the makers and I have no idea as to the agents in this country.

It is registered as a *Speedwheel*, is of 38 c.c., and is fitted with an AMAL 308 carburettor and a *Novi* flywheel ignition and lighting set magneto.

The motor is in the front hub with the magneto on the left hand side with lead going over the wheel.

I have written to Messrs. Amal's but they are unable to assist me in identification.

I find this a quite reasonable engine except that it is inclined to fourstroke a lot, also I am unable to get a good joint between the cylinder and crankcase.

I should be pleased if you could identify the motor for me and supply any information available.

WILLIAM C. BRADLEY

Grantham

Likes and Wants

Many thanks for a fine Journal —Although the title is " natty " it would be better to call it " The Cyclemotor " and so would immediately catch the eye of all those who do not yet know of its's existence. More articles like those of " Arquata ", please, and why not include Auto-Cycles in your Journal ? I

would like to see it on the style of "The Miniature Camera World", which is the "topnotcher" in the photographic world. I am hoping for an index and inexpensive binder at the end of volume one—.

Could we have more articles on cycle components by the Manufacturers please? also an article by the "Redex" people on their product.

A. HAMMOND

Ipswich.

Conversion Idea

Having read Mr. Elton's article on "32cc Power", I am contemplating the changing of my front-wheel roller engine, (Cymota), to a rearward mounting and driving the cycle through my 3-speed hub. Also I wish my pedals still to drive through the 3-speed hub. This entails the use of 2 freewheels on the right-hand-side of the machine and some other fitting to enable me to start the engine. Therefore I would welcome, with "Open Arms" any advice on the possibility of chain drive with my engine.

Pontefract. "AWKWARD"

P.S. Double the size and publish more often. It would be worth it.

Mini-Motor Performance

Re your correspondent H. E. Gregory from Essex and his Mini-Motor.

We think he would be interested to learn that our Mini-Motor is fitted to a *Sun Tandem* and that we have reached a speed of 29 m.p.h. quite regularly, using *Esso Extra* fuel, carrying the combined weights of my wife and self, 9½ stone and 11 stone respectively.

All this on level roads and hardly any wind to talk of; our consumption to date is 160 miles per gallon.

Please keep up the excellent work with *Power & Pedal*, its the "Tops"

Wirral A. P. WHITERUP

Otto Engines

The article and picture of the *Otto* engine on p.14 of your July issue is very interesting. But surely the author is mistaken in his statements to the effect that it is a 2-stroke engine. Otto was the inventor of the 4-stroke cycle of operations and the 4-stroke cycle is commonly referred to as the *Otto* cycle in text books on thermodynamics. Clark was the inventor of the 2-stroke cycle which used to be commonly referred to as the Clark Cycle. Clark did not apparently visualise crank-case compression and in the diagrams of the Clark Cycle, compression took place in a separate cylinder, larger than the working cylinder. I do not know whether Clark actually made any engines or whether his engine was purely theoretical. Nevertheless his cycle of operations was exactly the same as those of the modern 2-stroke engine.

Seaford G. H. WHITAKER

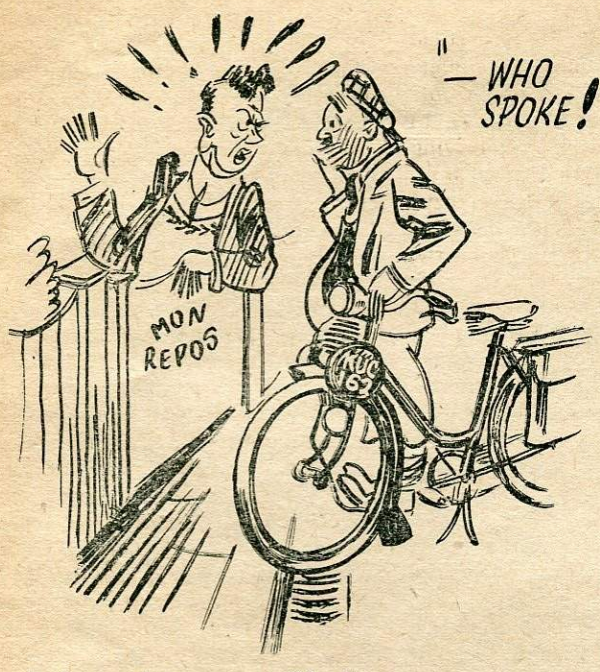
(*See Comment p.*4—ED.)

Transmissions and Cycle Wear

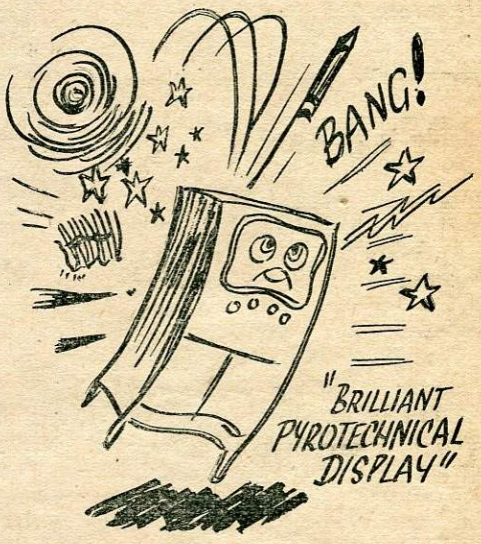
During the past 4 years I have practically ridden a *Cyclemotor* every day in all varieties of weather on business journeys. In this time I have owned two types of cyclemotors, my first being the original *Mini-Motor* model which I eventually decided to dispose of as being a constant source of expense in replacements to my cycle and the cyclemotor itself. I found that, with the method of transmission, my machine during the winter months and in wet weather was constantly caked with mud and being the London variety, had a very damaging effect on my cycle and caused very premature wear to the component parts. My second machine was the *Cyclemaster* which, as you know, follows orthodox methods of transmission, which type has been very much more satisfactory and I predict that, with more new and more modern units coming on the market there will be a demand for them.

I venture to suggest that it would be a fine idea if makers could be persuaded to give practical demonstrations on the servicing of Cyclemotors manufactured by them. A small admission charge to cover part expenses could be made and I am certain that the response would be enthusiastic and well worth while and allow the owner rider to give more expert attention to his standard servicing and upkeep problems.

Thornton Heath E. A. BURT



The SUPPRESSION of PILGRIM



by
Arquata

I had run into a spot of bother with my machine arising from the fitting of a new gasket between the cylinder barrel and the crankcase.

This necessitated dismantling the exhaust, taking off the tank and what not. I had completed these manoeuvres previously, but this time failed to take the very necessary care as on those earlier occasions. I know at one period in this last gasket fitting lark, I found myself trying to fit the petrol feed and outlet pipes into the wrong holes in the pump.

Anyhow, having cleaned out the exhaust and tidied up, I went to try her out, anticipating the lively snap and bite of the engine which follows a spring clean of this sort.

But all I got was a very half-hearted effort, the cause of which just couldn't be fathomed at all. I took all the orthodox steps (or so I thought) but, riding to work the next day felt uneasy the whole journey: little power and occasionally "yes I will, no I won't" from the engine as we went along. Then, coming home in the evening, she just faded out, and I had to pedal it the rest of the way.

After tea, I tried various dodges: inspection of the jet to see if it was blocked and putting in a clean plug. All I got when I took her out again was a spiritless struggle to begin with and then a final flat refusal altogether.

For some considerable time I had been up and down this level length of road near home (my own road is too hilly) when I came abreast of a character looking over his garden gate, who spoke.

I gathered he was referring to the compression on the bike being at fault and (always ready to listen to advice—especially when in trouble) I assured him that this was satisfactory and went on to detail its other symptoms of disorder. He then made some other observation which I couldn't fit anywhere into the conversation and after further discussion like a cross talk Music Hall turn, it dawned on me that his only interest in my troubles was that I should fit a SUPPRESSOR to the engine as, for the last fifteen minutes or so, I had been flooding his television screen with a brilliant pyrotechnical display!

After that we got very matey. He fixed me up with a new plug, for which he firmly refused payment and the next day I fitted a suppressor (1/6) and then quite by chance discovered the cause of the trouble. I had been content with a rough visual inspection of the jet when replacing the engine parts and now careful examination revealed that it was still partially blocked. This was put right with the aid of a cycle pump, after which all went well.

Moral—The other fellow's point of view may be interesting too.

Cameracraft

CHOOSING A CAMERA

By

T. Waymouth Pringle

IF you want to get really good photographs, walk. Cycling comes a good second but if you fit a motor to your machine your range of activities is greatly increased and many subjects will present themselves far beyond the range of a pedal cycle and without the effort. It may be thought that as you are no longer pedalling that a lot of extra gear can be carried but this is true only up to a point. When cycling on ordinary roads one can avoid most of the bumps at normal riding speeds but when a motor is fitted and the speed is increased this is not so easy and there is also the problem of vibration.

A camera is quite a delicate instrument and constant vibration will very quickly damage it, so there is only one place for the camera and that is in its case slung round the shoulder. If you use a photo-electric exposure meter this must go in one of your pockets together with any filters. All that can be carried on the cycle or in the saddle bag is the tripod and any articles not easily damaged, so that in point of fact a Cycle-Motorist cannot carry a great deal more than a pedal cyclist. The real advantage of having a motor fitted is that you can get to a certain place far more quickly and with very little effort, also you can get to so many more places in a day's run.

Now to choice of camera. I have been asked on many occasions which is the best universal camera. There is of course no such thing. The camera designed for architectural work is certainly not the one you would use for ordinary snaps.

It has often been stated that a Box Brownie will give as good snaps as a more expensive camera this is true up to a point. Given the right conditions a box camera will turn out quite good snaps but it is limited as to apertures and shutters speeds; a more expensive camera will have a full range of these, so that photographs can be taken under conditions hopeless for any box camera, not only that, having a better lense, enlargements can be made of the negatives and it is not until you enlarge a photograph that you can really appreciate its full beauty.

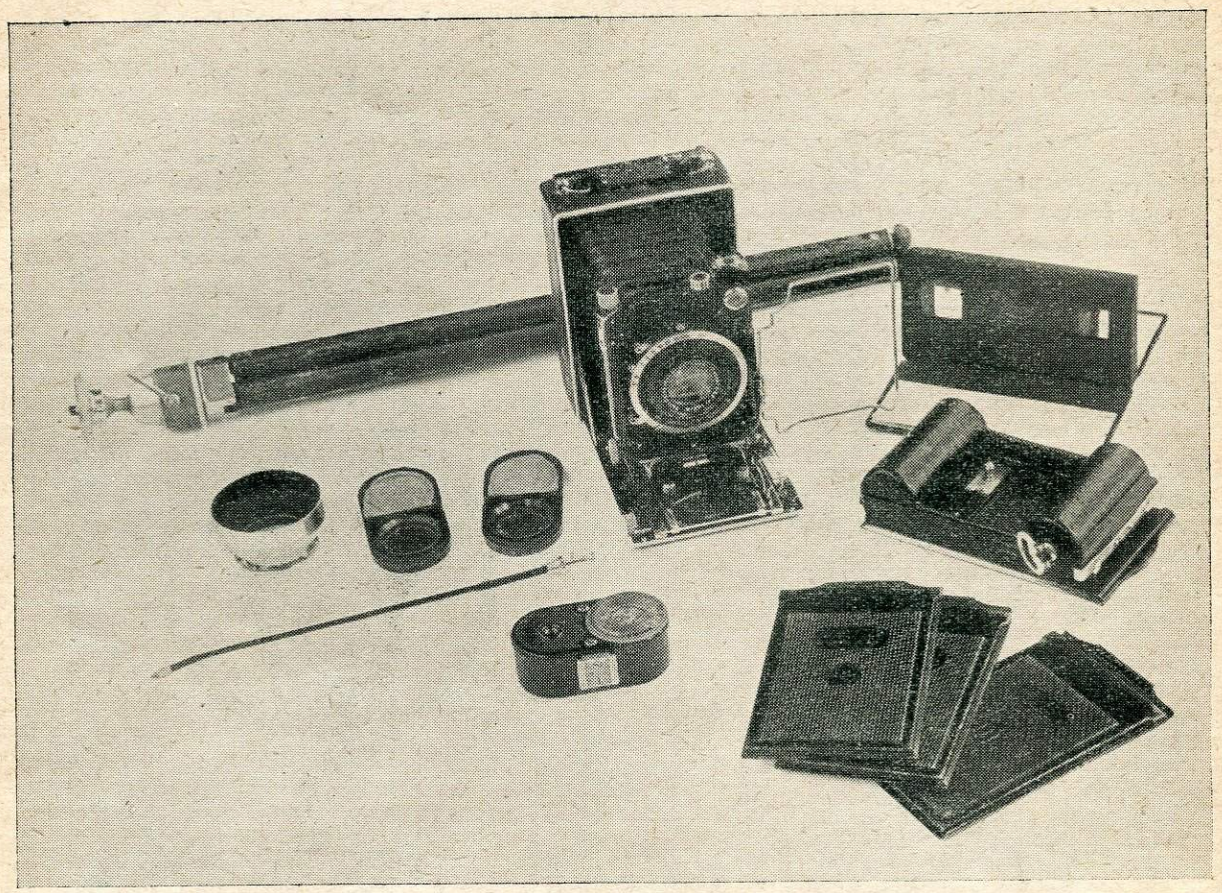
The really serious photographer will be best equipped with a plate camera. With a plate you can make one exposure, process it right away and, with an enlarger, make a print before the negative is dry, whereas with a film camera you have to wait until the whole roll is exposed or else waste the rest of it. Even more important, plates can be given the individual treatment that each picture demands in development against the roll of film which has to take an average that may not give perfection in any one picture.

Against this, plates are bulky and heavy and if you drop them they break, while films are light and compact, a large number can be carried in the saddle bag and the camera can be loaded quickly and in daylight. The great disadvantage of plates is that you cannot carry them in dark slides in the saddle bag even when cycling and when a motor is fitted it is fatal owing to vibration. You will find that little bits of glass will chip off and adhere to the emulsion, giving you a healthy crop of dust spots.

Most amateurs want a camera capable of taking photographs of their families and friends and, when out for a ride, snaps of the country through which they pass; churches, pubs, etc. The best all-round camera to tackle these subjects is a folding one to take $2\frac{1}{4}$in. x $3\frac{1}{4}$in. at 8 exposures on a 120 film. This size is reasonably cheap to run and gives a print that can be comfortably viewed with the naked eye, whereas anything smaller than this requires a magnifying glass or an enlargement. Do not be misled into thinking that a smaller sized negative is cheaper. By the time you have had them enlarged so that you can see them the cost is greater than the 120 film. Whatever you do avoid a miniature unless you can go to the expense of a *Leica* or *Contax* at £100 plus. Unless a miniature camera is precision built the results are hopeless. Precision has to be paid for. A good rule is to buy the best you can afford of the type for your purpose.

I cannot suggest a make of camera but one of the type I have suggested can be purchased at under £20 with a really good lens and shutter equipment and a camera of this type will tackle any normal subject.

If you want to specialize in the photography of buildings such as Churches, etc., a camera with a rising front becomes a real necessity. If you point an ordinary camera upwards to get in the top of the building the verticals lean inwards towards the top and the picture



looks false; a rising front will get over this trouble but it means the camera must be fixed to a tripod and focussed with a focussing screen and dark cloth. This may seem to be an awful lot of trouble but if you want to get really good pictures you must spend a certain amount of time and care in getting the right camera position and waiting for the best lighting conditions. If you go round snapping *ad-lib* you will waste an awful lot of negative material.

No plate cameras of this type are now being manufactured except in the larger sizes for Professionals and they are far too bulky to be carried on a cycle. In the 3½in. x 2½in. size a good secondhand model can be picked up with rising and cross front and double extension so that closeups may be taken. They are very neat jobs and no more bulky than a folding camera of the same size. They were made for use with plates but roll film holders may now be obtained so that they may be used as an ordinary film camera if required.

I use one of this type for practically all my work and can tackle any subject I like with it. It has a *Tessar* lens and *Compur* shutter with a delayed action device so that I can include myself in the picture if required, rise and cross front, double extension so that I can photograph flowers at full size, and as an added refinement, *Ziess Distar* and *Proxar* auxiliary lenses; with these I can shorten or lengthen the focal length of my lens, Many a time I have found that I could not get back far enough to include the whole subject, so, by attaching the *Proxar* lens I can get it all in. The *Distar* lens covers subjects that cannot be approached closely enough. I have a roll film holder so that I can carry colour film as well as monochrome plates and having an eye level view finder it can be used for ordinary snap work as easily as a film camera. There is no subject that I cannot tackle with it and it is to my mind as near to the universal camera as possible. Any reader going in for photography seriously could not do better than search the dealers for one of this type.

Continued on page 20.

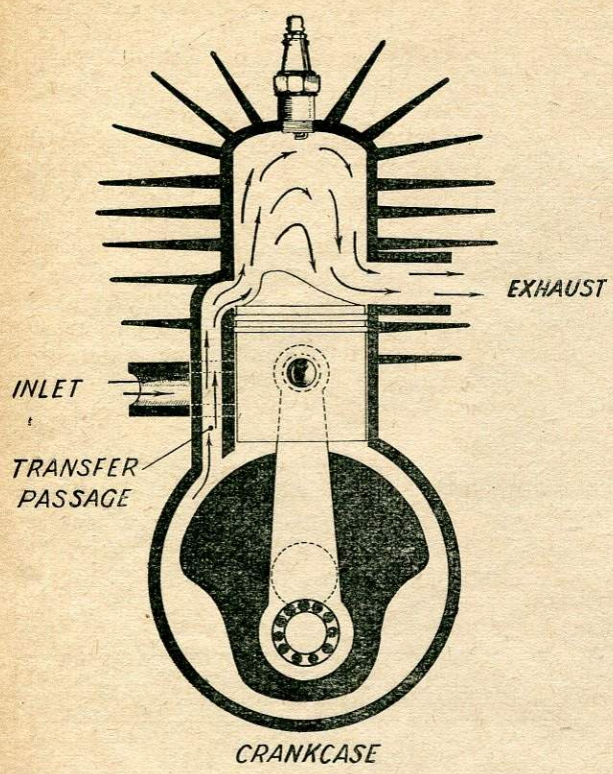


Fig. 1.

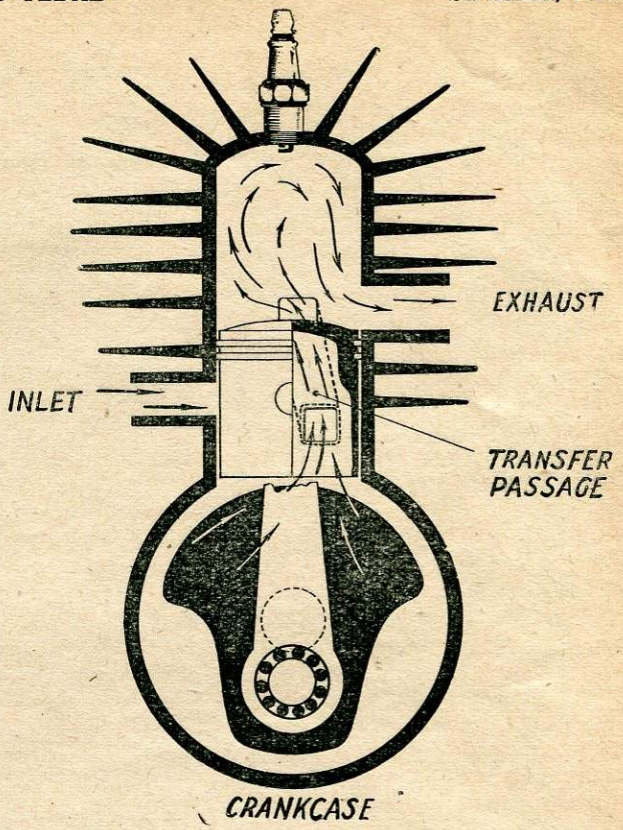


Fig. 2.

CYCLEMOTOR PISTONS

An Article from The Technical Staff of Hepworth and Grandage Ltd., makers of the famous "Hepolite" Pistons

THE rise of the cyclemotor over the past few years has been a phenomenon, and a very interesting phenomenon at that.

Although small auxiliary engines for bicycles have been made from time to time in the past in this country, it is only in the past four years or so that they have achieved popularity, and in this short period their numbers have increased enormously. The original basic reason was probably economic, but the auxiliary powered cycle is now used by many people who do not require, or do not desire, heavier and more powerful motorcycles.

Apart from their great economy, the other reason for the popularity of these hard working little machines is their reliability, a quality which was probably lacking in the designs of the past. Up-to-date materials, modern precision machining methods and greatly improved ignition and carburation equipment all contribute towards the reliable performance of the modern cyclemotor.

Hepworth and Grandage Ltd., are, of course, concerned only with the manufacture of pistons, including gudgeon pins and piston rings, and in certain instances cylinder liners for these engines. These products are supplied as original equipment to the engine manufacturers, and also for replacement purposes.

The production methods and materials used are contributory factors in making the cyclemotor a practicable proposition, and are much in advance of those in use when cyclemotors were tried in the past.

The majority of designs include a piston of aluminium alloy, although at least one famous make fits a cast iron piston. Hepworth and Grandage Ltd., manufacture the former type in Heplex material, an aluminium alloy of 12 per cent silicon content which is used for

almost all high duty purposes, including diesel engines. Heplex is superior to Y-alloy in that it has a low co-efficient of expansion, thus permitting small running clearances. Also it has better bearing qualities and is more resistant to gudgeon pin hole and ring groove wear.

These piston assemblies are in every way equal in quality to those manufactured for cars, motor cycles and diesel engines. The rings are manufactured from special cast iron, and the gudgeon pins are machined from solid high grade case-hardened steel bar stock

In the lightweight motorcycle field the two-stroke engine is as popular as ever it was, but over the years quite a number of erstwhile well-known makes have gradually disappeared, until at present there are only three or four firms building these engines on any scale. Their output is proportionately large and they satisfy the demand.

It is certain, however, that the advent of the cyclemotor has stimulated fresh interest in two-stroke design. The two-stroke cycle is well known and does not require full recapitulation here but here is wide variety of ideas on design. The disposition of the inlet, exhaust and transfer ports and the shape and general details of the piston in a two-stroke are of course interdependent.

In pre-war days pistons with deflector type crowns were almost universal in two-stroke engines, and many cyclemotor designers have adhered to this type, e.g. Power Pak, G.Y.S., Solex, etc.

As is well known, the purpose of the deflector, as its name implies, is to deflect the incoming petrol/air mixture upwards into the combustion space, thus scavenging and driving out the exhaust gases of the previous charge (Fig. 1).

In recent years, however, most of the two-stroke motorcycle engine manufacturers, probably under the influence of certain continental designs, have gone over to a design of engine using a flat or convex (dome) crowned piston. Some cyclemotors follow this trend e.g. Cyclemaster, Berini, Mosquito, Cyclaid. In engines of this type the scavenging of exhaust gases by the incoming charge is effected by the position of the ports in the cylinder wall. Which gives direction to the incoming flow. (Fig.-2). Deflector plugs screwed into the ports are sometimes used to control the direction of the flow. This method was pioneered by D.K.W. in Germany under the name of the "Schnurle" system.

It will have been noticed that some cyclemotor pistons have ports in the skirts, and the purpose of these seems to cause some confusion. Their function is connected with the design of the transfer passage (or passages—there may be two or even more). In the more familiar types the transfer passage leads from the crankcase to a position in the cylinder slightly higher than the piston crown at bottom dead centre.

In the ported piston type the transfer passages curve back into the cylinder at its lower end, and the charge enters when the ports coincide as the piston travels about bottom dead centre, i.e. the petrol/air mixture, then under crankcase compression reaches the transfer passages via the inside of the piston

There are two obvious advantages in this design.

(*a*) A cooling blast of mixture impinges on the underside of the piston crown on each induction stroke.

(*b*) The transfer passage is short and does not require to be run into the crankcase.

(*Continued next Month*)

CLUB NEWS. *Addendum.* London M.A.C. Section, Sunday 20th September. Delete Eastbourne run, Insert Scott Trial, Denham. Meet Marble Arch, 9 a.m.

This Oil Business

by *OLEO*

WHEN the "Focus on Oils" article appeared in our February issue the writer was of the opinion that most people knew something about the general principles of two-stroke lubrication and all that was needed was some discussion of the practical applications of the uses of modern oils to cyclemotor engines.

Since then, however, much oil has been poured into many tanks, letters have flowed into the *Power & Pedal* office and many people who should know much better have made some extraordinary statements on the subject of V.S.T. S.L., initials which will henceforth name the problem of Very Small Two-Stroke Lubrication. We have been startled and at times appalled at the casual approach of some people in quite high places to this matter. Even engine manufacturers' representatives have been heard to say in effect. "You're used to bunging half a pint of oil into a gallon of juice for two-strokes so you might as well do it with ours".

It seems that something like a pneumatic drill is required to get it into some folks heads that there is a difference between the lubrication requirements of more or less constant speed engines of 30 to 50 c.c. and livelier, faster and hotter running 125's and 198's. The proportion of heat-conducting metal area to combustion space in the cyclemotor engine makes it impossible to run it hot, even hot enough for real efficiency at the levels normally understood by the motorcycling fraternity. Cyclemotor engines can be locally overheated, of course, to the point of distortion and seizure, but the "natural" running temperature is different, the loads are different, driving conditions are different and engine design factors of porting and clearances are different in cyclemotors as compared with motorcycles. Hence the surely Obvious Fact that lubrication should be different too.

The primary function of a lubricating oil is to lubricate. This is not just a funny crack but a serious statement of fact that must be the starting point for any analysis of lubrication problems. There are other factors in the choice and use of oils. Heat ranges and carbon contents affect us vitally. But we must start with the business of oiling the bearing surfaces first.

In the case of petroil-lubricated two-stroke engines the oil, being mixed with the petrol, is not in itself the channel of the lubrication factor. It is the *mixture* that we have to examine to find exactly what lubrication material is going into the engine. It follows, therefore, that the grade of oil used will effect the proportions of oil to petrol required to represent any given lubrication factor. Nowadays the branded oils are reliably graded and marked so that it is easy to work to a definite table relating "W" numbers to quantities of petrol. For all normal two-stroke cyclemotor engines under 50 c.c. the table is as follows :

GRADE	OIL to PETROL
SAE 10	16 : 1
SAE 20	20 : 1
SAE 30	24 : 1
SAE 40/50	32 : 1

By sticking to this table a constant lubrication factor in the petroil mixture will be maintained whatever grade of oil is being used and these proportions will see to it that your engine is being properly lubricated.

On the face of it this would seem to suggest that it does not matter what grade or type of oil users put into their petrol so long as they get the proportions right, but it is not quite as simple as that. We are all rather shy of admitting it but most of us find that decarbonising time comes round a little more often than we care for and probably more often than the maker's handbook suggested, so we would like to find an oil that burns clean away and leaves no hard carbon in the ports.

Generally speaking the heavier oils have a higher carbon content in proportion to their gravity than light. Conradson figures supplied to us by the chief research chemist of a major oil concern that favours "straight" oils for air-cooled engines shewed a big jump in weight/per cent of carbon at about SAE 30 leading to an even higher proportionate content in the heaviest grades. Even allowing, therefore, that the SAE 40/50 would be used in half the quantity per gallon of the SAE 10 the lighter oil would shew up to great advantage in the matter of hard carbon deposit and would be especially suitable for cyclemotor engines whose tiny ports are so easily blocked up by "curtains" of carbon.

The lighter oils, to have another basic advantage in petroil lubrication in that, other things being equal, they mix more readily with the petrol thus providing an evenly proportioned mixture right down the can or tank. Some people too contend that heavy oils have a

tendency to separate out after mixing and leave the oil at the bottom of the tank. The writer remembers that this did happen with some oils used about twenty-five years ago, oils that should not have been used for petroil engines anyway, but nowadays there is little chance of oil breaking out of the solution and sinking to the bottom *once it has been properly mixed.*

However, the heavier grades of oil have their points. The producers get their oils in different weights and viscosity grades by heat processes, the light oils coming off first and then the others level by level. This means that the heavy oils retain their viscosity standards at much higher temperatures than the light ones. In other words, they can go on lubricating the engine properly when it is really hot, even when a lighter grade of the same oil would break down.

As we have already pointed out, cyclemotor engines are cool-running jobs inside, whatever the fins feel like when you put an unwary hand on them, and high temperature oils are not needed. All the same an engine that is so fitted to the machine as to be screened from the flow of the outside air will obviously run hotter than one which is fully exposed and may be happier on an oil one grade heavier than the cooler runner. Engines with a high power output per c.c. can be assumed to be hotter runners than more lightly stressed units and therefore demand a little more "body" in their oil. The variations are not, however, very great.

On the whole it would seem that the use of the lightest oil that will do the job is desirable as the basic practice for V.S.T.S.L. (see above). There remain, however, the special oils turned out for two-stroke engines and which many users swear by as the answer to all the questions. The table of proportions given above applies to these as well as the more popular branded oils and we have noticed that some of the labels and literature turned out by the special oil makers still give the proportions for two-stroke motor cycles. These are too heavy for most cyclemotor engines. In the case of these special oils the relatively high viscosity ratings do not imply any disadvantages in carbon content and miscibility factors. They are made for use as petroil mixtures and both the selection and blending of the oils and the additives used go to ensure that they will mix well, burn freely and do their lubricating job over a wide range of temperatures.

A good oil is worth its price whatever the label on the tin. Buy it good ; use it in the right proportions, and when in doubt choose it light.

ROAD TEST REPORT

The VINCENT "*FIREFLY*"

A New British Unit

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

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

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

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

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

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

The Cycle

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

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

On The Road

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

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

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

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

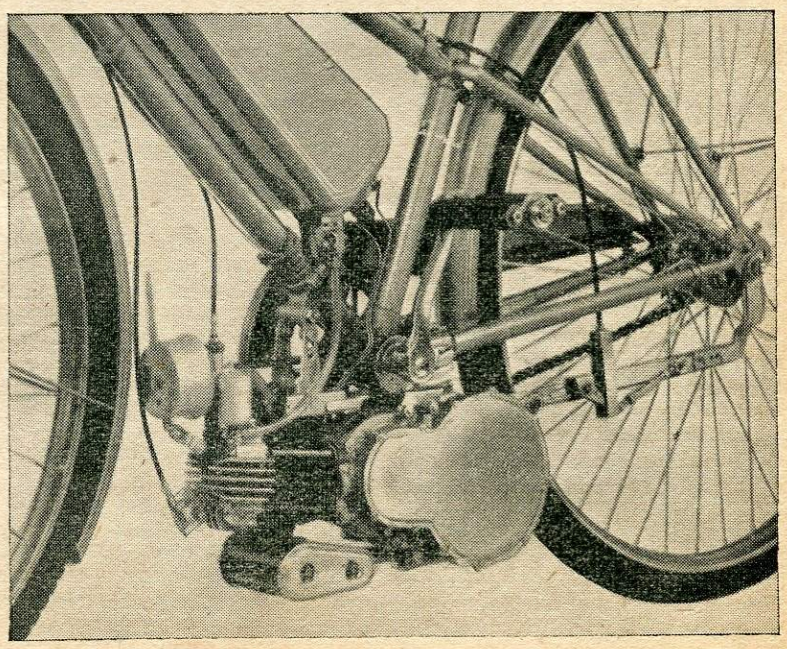
As received for test the Dunlop "*Motorette*" rear tyre held a pressure of 34lbs. which, while no doubt quite nice for the tyre, was not too comfortable for the rider or good for the machine. This was dropped to 24lbs. and later went down to 20lbs., within which range, comfort and performance were well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

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

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

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

The "Firefly" is neat, compact and firmly attached



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

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

Summary

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

Specification

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

Flashes

Vitality Bulbs for B.S.A. Winged Wheel

VITALITY Bulbs Ltd., Neville Place, London, N.22, advise us that its recently developed exclusive Vitality design bulb for use with cyclemotors is also applicable for the B.S.A. Winged Wheel and recommends the following combination :—

Head Bulbs : Either Ref. 944 *6v. 8w. gas-filled Tuba or Ref.* 945 *6v. 8w. gas-filled Tuba M.A.S. S.C.C.*

Tail Bulb : Ref. 421 *6v. .2a 1.2 w. clear M.E.S.*

The advantage of this combination is that an 8w. head bulb will give considerably more light than a 6w. thereby securing a far better beam of light in front while the tail bulb will still give sufficient illumination for the average size number plate and road safety.

Reduced Mocyc Prices

THE Cairns Cycle and Accessory Manufacturing Co., Ltd., makers of the *Mocyc* cyclemotor and a well-known range of bicycles, announce that a streamlining of production methods has enabled them to reduce the price of the engine to £16. 16s. 0d. and the complete motorised cycle to £28. 15s. 6d., the latter figure including P.T. on cycle.

French Petrol Prices

THE average cost of petrol is now Frs. 64.20 per litre for the standard grade and Frs. 67.10 per litre for *supercarburant*, approximately 5/11 and 6/2½ per gallon respectively.

Prices vary slightly down or up in different districts.

Cameracraft—continued from p. 13.

Having dealt with the camera there are one or two items of equipment that I consider a real necessity.

Lens Hood

Make a habit of using one for every exposure: the hood prevents any stray light from striking the lens and the prints will be ever so much brighter. If you wear glasses you will know how difficult it is to see if the sun strikes across them. If you shield them with your hand you can see quite clearly; the lens hood works on the same principle. They may be obtained in all sizes and are made to take filter glasses so that a number of these may be carried.

Tripod

I rarely take a photograph without using one. Using a camera at eye level, camera shake can occur even if you are using a shutter speed of 100th sec. This may not be apparent in a contact print but if you wish to enlarge to any size at all a tripod is a real necessity. By using a tripod you can set up your camera in the best possible position and leave it all set up to wait for the right lighting conditions, or if you wish it, for some human interest to come along knowing that the camera is in the best position for the picture you require. As it can easily be carried on the cycle, weight is of secondary consideration so buy the sturdiest and tallest that you can.

Flexible Cable Release

To avoid moving the camera at slow shutter speeds always use a flexible release. Get one at least 9in. long and hold it slack while using it, never use the silly short ones issued with some makes of cameras.

VYNIL PLASTIC STORMCOAT

THE problem of finding suitable clothing for cyclemotorists is one that we have discussed several times in these columns and, in so far as we have been able to reach any conclusion at all, we have suggested that the new synthetic (plastic) materials offer the best solution.

Most people nowadays are more or less familiar with the material known generally as P.V.C. in various spheres of use and particularly in the form of those fascinating ultra-lightweight "plastic macs" which fold down literally to pocket size. They are valuable portable showerproofs and have the merit of being really cheap to buy, but they are not real waterproofs and they tear very easily which makes them unsuitable for use on anything as plentifully provided with catching points as a bicycle.

Some attempts to attach the Vynil sheeting to fabrics with adhesives have been more or less successful but the real answer to the problem has now been produced in the range of "plasticised cotton" materials. In these the fabric is impregnated with the plastic material and becomes part of a single unit of strong, waterproof stuff that is almost ideal for our purposes.

The Vynil products have effectively superseded oilskins in the Services and particularly at sea. They have the advantages of being oil and petrol as well as waterproof and they do not become tacky in hot weather nor brittle in cold. They are flame resistant to a remarkable degree which is a valuable added safety factor where petrol engines are concerned. A substantial coat of the normal raincoat style in this material is an obvious choice for the all-weather rider.

We saw some of these materials at the B.I.F. a few months ago and noted particularly an exhibit on the Dunlop Special Products stand, stormcoat by Tidywear, Ltd., of Croydon, illustrated herewith. We approached this firm for further information, and received the following comments:

"In view of your remarks it would appear that a coat made of a substantial plastic, belted, with a storm collar, would be an ideal garment.

For a waterproof article a plasticised cotton is the best garment. This is also highly resistant to oil, grease and petrol, and the proofing does not crack or need renewing from year to year.

This is available in Black or Yellow and retails for approximately 45/- to 50/- according to size. Cycle leggings of the same material are available priced at just under 20/-. A further advantage of this material is that it does not stick and can be rolled wet or dry without affecting the proofing.

TAILOR-MADE CYCLE

THE growing number of manufacturers who are offering special cycles for use with attachment engine units is a welcome sign that the Trade is taking the cyclemotor seriously and knows that its needs are not just those of the ordinary pedal cyclist. There are some people, however, who shy away from anything that looks in the least bit "special" although in argument they will readily admit the obvious need for something different to fulfil their different requirements as powered cyclists.

Such as these and perhaps others less conservative minded, will be interested in a cycle assembly made up by Barry Bros. of Praed-Street, Paddington. The complete machine is built entirely from standard cycle parts, but yet is suitable for use with any kind of motor.

The frame is a standard touring type and is available in either the diamond (gents) or parallel down tube (ladies) style. The wheels have tandem weight rims and 13 gauge spokes and the fitments such as mudguards, chainguard, etc: are of strong build and generous size.

A proper cyclemotor saddle, Wright or Lycett, is included in the specification and the handle bars are of the tourist type, fairly wide and with adjustment for angle, an important detail for comfort and control. Choice of *Alfa* or *Webb* spring forks is offered and the brakes may be either calliper or drum type to the customers requirements. The pedals are the neat, all-enclosed *John Bull* type to save gashed ankles and torn clothes.

The whole assembly looks attractive and, by virtue of the inbuilt quality of British cycle components, is obviously a sound mount to go with any motor. It is an added attraction that each customer can have his machine built-to-order in this manner.

CLUB NEWS

THE British Two-Stroke Club's London Motor Assisted Cycle section will be participating in the Club's Annual Scott Touring Trial at Denham, Bucks, on September 20th.

This trial takes place over a 50 mile circuit of pleasant by-roads and the awards are decided on accurate maintenance of time schedules only. The cyclemotors will have to maintain a steady 12 m.p.h. throughout, a speed which gives equal chances to all types. As this is a "closed" club event, only members can enter. Particulars membership and further information about the trial may be obtained from the secretary of the London Motor Assisted Cycle Section of the B.T.S.C. Mr. Bert Evans, 10 Elia Street, London, N.1.

London M.A.C. Section B.T.-S.C. Programme

Sunday, August 30th. LITTLEHAMPTON. Meet Jack's Cafe. Morden Underground Stn., 10.0 a.m.
Sunday, September 6th. NORTHAMPTON. Meet Welsh Harp, Edgeware Road, 10.0 a.m.
Sunday, September 20th. EASTBOURNE. Meet Jack's Cafe, Morden Underground Stn., 10.0 a.m.
Central meeting place for all club runs is Marble Arch at 9.0 a.m.

Brighton and District Power Assisted Cycle Club

The Brighton Club have decided to hold runs every 2nd and 4th Sunday in each month and will meet at The Cycle Shop, 24 George Street, Brighton, the club's H.Q.

BOURNEMOUTH I.T.A. PROGRAMME

Sunday 6th ALDERSHOT ROAD TRIAL. Iford Bdge. 8.30 a.m. (Commences at 11.45 a.m. from Waterloo Parade Ground)
Tuesday 8th. BADBURY RINGS, Bear Cross 2.30 p.m.
Sunday 13th SOUTHAMPTON RALLY (Speedway) Bear Cross 11.0 a.m.
Tuesday 15th. BAKER'S HANGING, Bear Cross 2.30
Sunday 20th. LIMBERLOST CAFE, Bear Cross 2.30
Tuesday 22nd. BOSCOMBE OVERCLIFF GARDENS Bear Cross 2.30 p.m.
Sunday 27th. BEAULIEU. Bear Cross 12.0 a.m.
Tuesday 29th. HENGISTBURY HEAD (Solent Road) Bear Cross 2.30 p.m.

The Solex Hondsrug Rally

When in 1951, this rally started, nearly 200 *Solex*-owners took part in it. Last year the number of participants had risen to 400 and this year, despite of heavy rains, more than 500.

The oldest participant was 81 years old Mr. Kooistra, who came by *Solex* from Leeuwarden, a distance of 74 miles. After receiving his prize, a silver cup, he told the press that he is very thankful to the power assisted bicycle, as it enables him to make trips in the province which would not be possible for him by bike. Oldest female participant was a 68 years old nurse, who uses her *Solex* for visiting her patients in the community where she works. She also received a silver cup. There were lots of other prizes, including silver watches, clothing, cameras, a radio set and a *Solex*, which went to the *Solex*-Club with the largest number of participants, the *Solexer* who had covered the largest distance and people who reached an outstanding result.

This successful rally, five years after world's first power-assisted bicycle has been sold in the Netherlands, proved once again that the cyclemotor has become a part of the Dutch traffic, where it is used by all kinds of people, to everybody's happiness.

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DECLARATION

I declare that I am the owner of the above cycle/s and that the above statements are true and complete in every respect and that the cycle/s insured will be kept in good and thoroughly sound condition. I further declare and agree that if such statements and particulars which I agree shall form the basis of and be considered as incorporated in the policy to be issued by the UNITED KINGDOM FIRE & ACCIDENT INSURANCE COMPANY LIMITED are in the writing of any person other than myself such person shall be deemed to have been my agent for the purpose of filling in same and the Insurer shall not be affected by the knowledge of such person, whether also an agent of the Insurer or otherwise.

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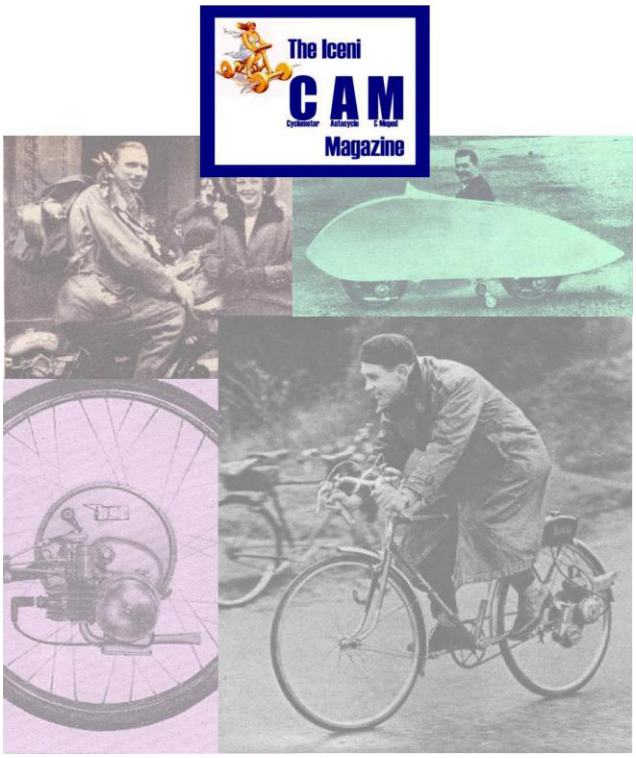

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