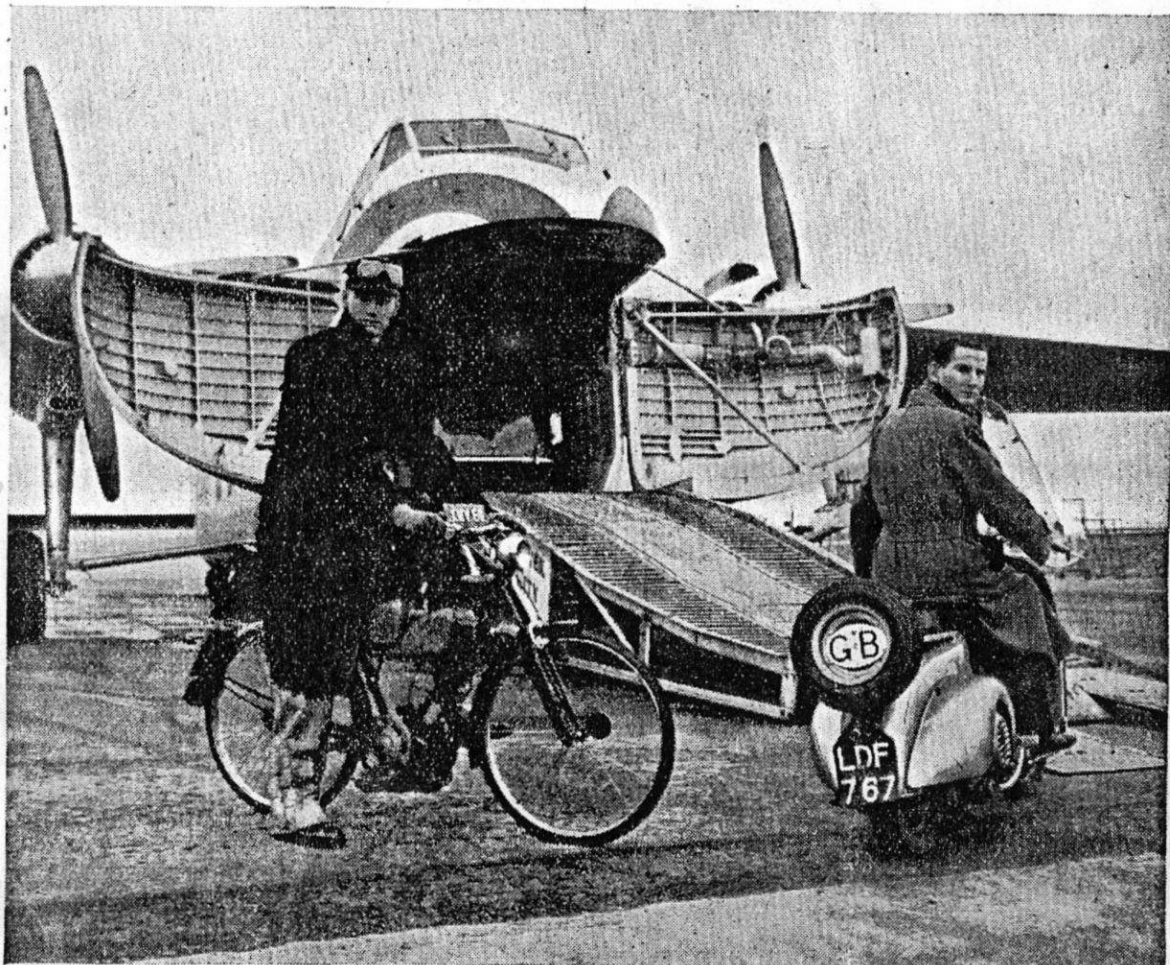


APRIL, 1953

MONTHLY 4<sup>D</sup>

# POWER & PEDAL

**The Journal of the Cyclemotor**



YOU CAN NOW FLY YOUR CYCLEMOTOR TO FRANCE BY SILVER CITY AIR FERRY FOR 5/-

## Cyclemotors Take The Air:

(ADVERT:)

*See story on page 9*

## "SHARE IN THE PLEASURE"

Wing Commander R. Alcock, O.B.E.,  
Royal Air Force,  
Larton,  
Wirral, Cheshire  
26th February, 1953

Messrs. Bob Sargent, Ltd.,  
Moorfields,  
Liverpool, 2.

Dear Sirs,

I enclose your account and my cheque in payment of it.

I have now covered some 2,000 miles of rough winter travel on my bicycle powered with a "Mosquito" engine. I have not had one single involuntary stop due to engine trouble, the engine has never failed to start easily, even in the coldest weather and I am really pleased with the engine.

I have used the cycle for journeys to Carlisle and back and often do seventy miles in an afternoon when I go to visit my Mother, in Wales. On one occasion I came 40 miles in deep snow with a blizzard blowing against me and the engine got me through.

I expected to have a power assisted pedal cycle but find that I have a light motor cycle, as it goes up all the local hills without using the pedals.

The advertised petrol consumption is 250 miles to the gallon, the actual figure for my engine is 240 miles per gallon which is just a little less than stated. On the other hand the advertised top speed is twenty miles an hour while I find that my average speed is 20, 21 and even 22 miles in an hour, which means that the top speed must be considerably more than twenty m.p.h. in order to achieve this average.

I service my engine exactly in accordance with the handbook which I consider to be very important. If the engine is not decarbonised at the right time it soon loses power. The last time I decarbonised the engine I timed the operation. It took me thirty-five minutes only.

I have no objection to this letter, or a copy of it, being shown to prospective purchasers as I would like other people to share in the pleasure that I get out of this wonderful little engine.

Yours faithfully,

R. ALCOCK,

Wing Commander, R.A.F.

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(From the "Power and Pedal" road test report  
March, 1953)

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## The Chancellor And Us

OF all the pipe dreams man has dreamed throughout the centuries, the least possible of realisation is a budget that will please everybody. Whatever the Chancellor is preparing for us at the moment will mostly displease most people and it is a tribute to our democracy that the unpopular business of paying taxes does, in fact, work so smoothly in Britain. The various interests will press their claims for favourable treatment, the claims will be considered, and politely rejected in the main, and the budget will be passed very much in the same shape as it was conceived. This, we firmly believe, is as it should be.

Apart from the burden we carry as ordinary citizens, we cycle-motorists are not big taxpayers as motorists go. Our economical machines use very little petrol and our annual rate of duty that was once a Road Fund Tax is the same as the smallest class of motorcycles. Our new bicycles are subject to Purchase Tax; but we do not buy a new cycle all that often that it kills us; and, on the whole, we cannot complain of hardship as a particular class of road users. But there are other angles than

hardship to be taken into consideration in fiscal policy and *Power and Pedal* feels strongly that the Chancellor might cast a friendly eye over our tax position as a factor in social progress.

The motor-assisted cycle has now definitely arrived in Britain and is making a serious contribution to the way of life of the country. Its lines of development, however, will depend very largely on the attitude of officialdom to the new means of transport. If encouraged, the riding of these machines will spread rapidly, if discouraged the spread will be slower but still take place simply because an economical, efficient and labour-saving means of transport is a badly needed necessity. But if the development is limited by artificial restriction or encouragement in the wrong direction the machines will not be able to make the contribution they should towards the social life of the people.

We have previously pointed out in these columns that the encouragement of a quiet, safe, reliable and economical machine will add to the safety and amenities of our roads by keeping people on cyclemotors

instead of faster and heavier vehicles that are less to the taste and safety of the non-riding public. Also a safety factor is the obvious corollary that new riders will be encouraged to get at least a year or two's experience of powered machines before embarking on greater responsibilities. We make no apology again for repeating that the present quite indefensible load of Purchase Tax on motor-assisted cycles that are built in one piece instead of as separate motors and cycles is an artificial and potentially dangerous limitation on what continental experience has shown to be a natural trend of design.

Taking these things into consideration, plus the factors of the rising average age of the population and the demand of Industry, accentuated by the current housing shortage, for greater mobility of labour, there would seem to be a very strong case for the Chancellor to make some concessions, costing little in themselves, that would encourage the development of the socially useful cyclemotor on the most socially desirable lines.

# COMMENT

by

## CLIP-ON

### Spring Crop

NOW that young Ice Age we have had instead of a Winter is showing reluctant signs of releasing its chill grip, many folks all over the country will be digging their cycles out of the garden sheds, brushing off the cobwebs, lamenting that modern chrome does not stand up to rust as well as the old-fashioned nickel used to do, pumping up the tyres and generally preparing to return to civilisation on wheels.

In the course of this emergence from the hibernation period most riders will find the need to pop down to the local shop for the odd piece of valve rubber, can of oil or new inner tube and it seems likely that many will see a cyclemotor engine in the agent's window and start on a new train of thought from there. This is all to the good and will bring literally a new lease of life to many riders as well as their machines, but I do hope that they will be well advised by the agents and friends with whom the project of buying a motor will be discussed.

Many letters have come to *Power and Pedal* asking for advice and those that have been published have brought some answers from other readers, but I fear that the word of the individual user on his own experiences is not always the best recommendation. Some people appear to have violent prejudices based on unfortunate experiences and even more violent prejudices based on pet theories without any experience. Such advice as these may tender is more dangerous than helpful.

To the agents and friends who will be called upon to advise the newcomer to our ranks may I urge

the need for strict impartiality and a clear understanding of the needs of the particular individual being advised. It is no use recommending a sporting type engine set four inches from the ground to an obese sixty-year-old who only wants an engine to help him to be idle, nor will the tradesman who uses a carrier cycle have any use for a front driver, or the artisan with a carrier load of tools on the back be better off with the engine over the rear wheel, all this apart from such matters as cost and performance. There is real sense in the variety of cyclemotors on offer—make sense of it to buyers please.

### A Parson's Problem

Probably not many readers of *Power and Pedal* know of *Good Motoring*, the bi-monthly organ of the Company of Veteran Drivers. A letter appeared in its pages some time ago from a veteran driver parson in Yorkshire saying that he had taken to using a cyclemotor for his local runs and requesting that fellow motorists gave a modest toot on their horns when passing, as the noise of his rear mounted engine made overtaking cars inaudible and caused a "nervous start" as they loomed up alongside.

Personally I am one of those drivers who uses the horn very little and finds its use more irritating than helpful from others. I see the parson's point, of course, but is not the cure really to be sought in better silencing of the cyclemotors rather than more noise from the cars? Real silencing, that is silencing to the standard of the ordinary non-sports car, would

be a great safety factor for riders as well as a valuable contribution to the comfort of other road users.

### Too Many Pounds

A reader sends in a rather indignant letter which is, unfortunately too long and complicated for full publication in our correspondence columns. His main points are that cyclemotors cost too much and the cycles to go with them weigh too much. In support of the first contention he quotes the J.A.P. 125 c.c. engine with three-speed gear clutch and built-in lighting coils at £27.10.0 and considers £18 plenty high enough for the smaller and simpler cyclemotor.

I have not checked his figures against the book, but if they are correct, even approximately, there would seem to be the point of an argument there, at least as far as the cost of a gearbox is concerned. So far as the engine itself compares, I doubt if there is much saving, if any, in the smaller motor. Most of the cost of production is in the labour and machinery rather than material and there are as many ports to be drilled and bearings to be made and fitted in a 32 c.c. engine as in a one-two-five. It might even be claimed that the smaller engine is more fussy as to fine limits in finishing, since it has so little power to spare for the odd tight spot or rough porting that will pick up hard carbon. However it would be interesting to have some manufacturer's views on the subject of where the money goes in the making of a cyclemotor.

### Fashions in Pistons

Reading through that interesting (and almost legible) little journal



### THE CHIMP AND THE MINI

*THE WINNER, perhaps an all-time winner, in the readers' photographs competition is this zoo study from Mr. R. G. Neale of Mitcham, Surrey. It was taken at the London Zoo last December. (100th Sec. F.16. P.F.14. Flash)*

*The Independent*, the paper of the British Two-Stroke Club, I ran across a statement in the course of a road-test report on a scooter that the performance of this particular engine caused the tester to wonder whether the flat-topped piston was really an improvement on the older deflector head type or whether its present-day popularity was not due to the fact that it is a cheaper component to manufacture.

This is a hoary old perennial that can always be relied on to set the experts about each other's ears in any bar or clubroom gathering, but there must be many readers of

*Power and Pedal* who have never heard it argued. My own recollection of the introduction of the flat-topped piston is that it claimed only to withstand long spells of flat-out driving without seizure when it was first marketed, and it had to be admitted that the lop-sided chunk of metal on the crown of the deflector head type did sometimes distort through uneven expansion. However, times and manufacturing methods have changed since then and modern metals and casting processes have killed that bogey stone dead.

It has always been generally

accepted that the deflector headed piston gave better low speed pulling than the flat one although the latter could reach higher revs, and this plus the fact that all our tiny engines have to run cool whether they like it or not, seems to suggest that the "old-fashioned" idea might be the better for our purposes. We don't want high revving engines but we do want all the pull we can get at low speeds. I would like to see some manufacturers publish graphs of the power curves of their engines. It might be very interesting.

In response to numerous and repeated requests from readers we present a series of three articles on "How it Works". This is Article number 1

# HOW THE TWO-STROKE ENGINE WORKS

by  
**BROOK  
LISTER**

**E**NERGY is an indestructible thing. You can change its form but you cannot destroy it. It can be stored in many ways. Probably one of the simplest cases is when one compresses a spring, using energy to do so. When the spring is released, the stored-up energy asserts itself.

Releasing energy stored in different ways can be fairly complex. The internal combustion engine which we are about to consider is a device for releasing the energy stored in a liquid fuel i.e. petrol and changing it into rotary mechanical energy with which to drive a vehicle along the road.

Where did the energy come from in the first place? It was received from the sun by the vegetation of ancient forests and chemically stored as oils, gums, resins and the like. These forests eventually sank beneath the earth, were subjected to countless thousand years of heat and pressure, producing the coal beds and oil 'lakes' from which petrol is produced.

In short, when you buzz along the road on your cyclemotor you are using the solar energy of a sun which shone probably millions of years ago!

## Practicalities

A rather critical mixture of atomised petrol and air will explode if "fired", so releasing the energy we have been talking about.

An explosion is simply an extremely rapid burning, and the resultant expansion can be con-

veniently made to do work if the explosion is confined in a gas-tight cylinder which has one end closed and has within it a closely fitting piston free to slide in and out.

Note the similarity to a gun barrel and shell. The principle is the same, but in the case of the petrol engine we need a rapidly recurring series of explosions together with some means of making them turn a shaft.

Look at sketch (1). The object is achieved by attaching the piston via a "hinged" connecting rod to a crank. If you turned the crank of this arrangement, the piston would slide up and down inside the cylinder barrel. To reverse the idea, if we push the piston downwards each time it comes to the top, and arrange for the momentum of a spinning flywheel to bring it to the top again, we can produce rotary movement of the crankshaft from a series of "pushes".

The movement of the piston down the cylinder is one "stroke"—its return to the top is another "stroke", that is TWO STROKES. If we arrange for a power impulse every time the piston comes to the top our engine will be a two-stroke, i.e. two strokes per explosion.

## How is it done?

Now please consider sketch (2) which is the simplified lay-out of a conventional two-stroke petrol engine.

The crankshaft, moving clockwise, pushes the piston up the cylinder bore. This increases the volume of space in the air-tight crankcase, producing a partial vacuum therein.

## Induction and Crankcase Compression

The bottom (or "skirt") of the piston passes and uncovers a hole

in the cylinder wall called the inlet port, and atmospheric pressure (14.7 lbs. per square in. according to my old science master) pushes air violently in through the carburettor. In doing so, the carburettor (from "burett"—a measure) measures a precise quantity of petrol in proportion to the volume of incoming air, atomises it, mixes it with the air and so makes a potentially explosive mixture for storage in the crankcase.

Yes, other things have been happening above the piston. We will come to that later.

The piston has now reached the limit of its upward travel, the crank has turned over "top dead centre", and the piston is beginning to descend again.

As it descends, the bottom skirt again seals the inlet orifice. There is no escape for the petrol-air vapour in the crankcase and the descending piston in reducing the crankcase space volume "squashes" or compresses the mixture therein.

The gas in the crankcase has been really compressed when the piston top suddenly passes and leaves open a hole called the **TRANSFER PORT**.

The compressed gas, glad to find a way out of the crankcase, dashes up the channel and sweeps into the upper portion of the cylinder as shown.

Because of the peculiarly shaped hump on the piston crown the gas stream is largely swept upwards and not straight across and out of the exhaust port as one would otherwise expect. That's what the hump is for.

## The Second Stage

The crankshaft reaches bottom dead centre, passes beyond it, and the piston begins to ascend again.

FIG. 1

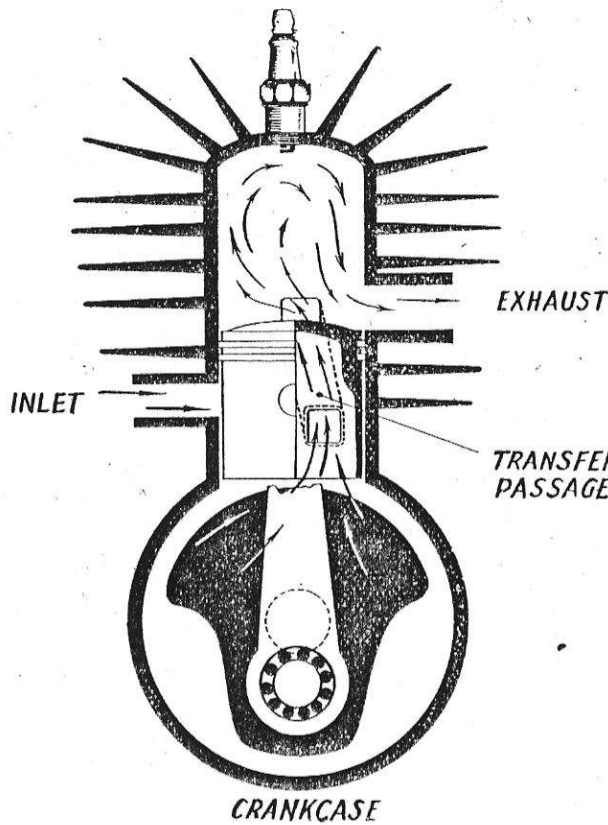
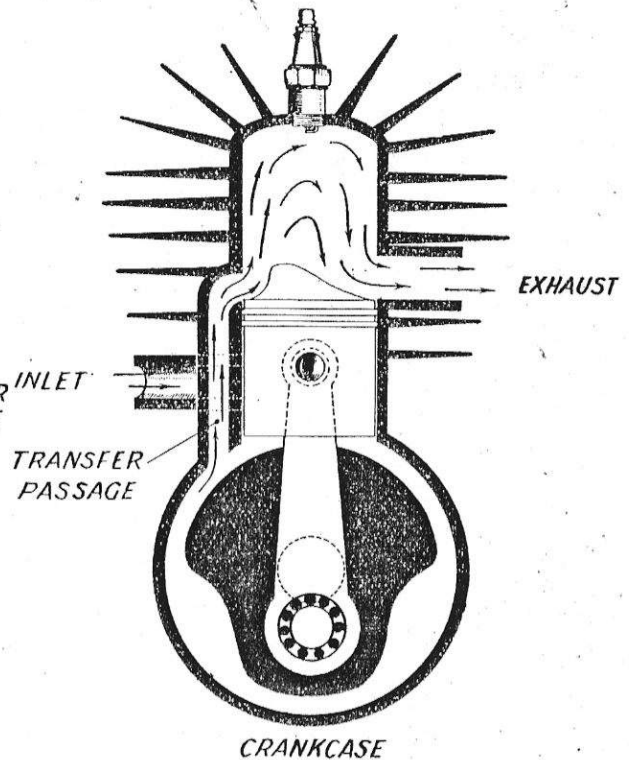


FIG. 2



Drawings by courtesy of Hepworth and Grandage, Ltd.

We know all about the vacuum this will create in the crankcase immediately the transfer port is closed, but what about the gas now above the piston?

The top of the piston soon passes and closes the transfer and exhaust ports and the upper part of the cylinder is now gas tight, with a piston ascending in it. This compresses the petrol gas-air mixture very tightly indeed. This is called "Cylinder Compression".

If you compress a gas its temperature rises. If the engine under consideration were a Compression-Ignition one, advantage would be taken of that feature to actually ignite the charge.

In our case the temperature rise is somewhat lower, but does serve to make the mixture "ripe" for the critical moment when it is fired by

an electric spark leaping across the electrode gap of the spark plug.

The timing of this spark in relation to piston position is critical, for were it to occur too soon there would be a tendency to force the crankshaft backwards before it had reached top dead centre. If the spark occurred too late, i.e. after the piston had begun to descend, it would be firing a mixture whose pressure and temperature had fallen below a desirable peak.

In addition, we should be using the expansive force of the explosion for a shorter portion of piston stroke resulting in less power output.

#### "Tying it Up"

The explosion then, for purposes of practical demonstration, occurs as the piston rocks over top dead

centre and drives it violently down the bore. If you look at the diameter of a cyclemotor piston you will realise what force is being withstood by your connecting rod and crankshaft. The explosions are more powerful than is generally realised.

The piston, then, is driven forcefully down the bore, turning the crankshaft in order to do some work. When the descending piston top uncovers the exhaust port the hot and still expanding products of combustion begin to rush out through the exhaust pipe.

What we now have to appreciate is that when the piston was ascending to compress the charge, we have just fired, a fresh charge was AT THE SAME TIME being drawn into the crankcase.

continued on page 8

This crankcase charge has now been compressed down there by the explosion-driven downward movement of the piston and is ready to come up the transfer port to the cylinder.

It will be noticed that the piston crown is a little lower on the exhaust port side so that the exhaust gases begin to pass out before the transfer port opens.

The piston, still moving downwards, now uncovers the transfer port there is little back pressure left in the cylinder proper, so making it easy for the new charge to enter. In entering, it helps to push out the old burnt charge, for the exhaust port is now fully open.

Further assisting in the task of replacing a used charge with a new one is the momentum of the outgoing exhaust gas which, as gas has weight, is acting rather like a piston going along the exhaust pipe creating a vacuum behind itself tending to draw in the new charge.

This characteristic is so marked with some engines that the writer experienced a case where merely changing a longish exhaust pipe for a short one seriously affected the power output of the engine.

The significance of the hump on the piston crown will be fully appreciated. Were it not for this, the incoming mixture would hit the hot outgoing flame and probably ignite. As it is, the new charge

goes to the top of the cylinder filling it from the top downwards.

#### Flat Topped Pistons

This is where someone gets up and says "Ah! But the piston in my engine has no 'hump'." Fair enough! We will try to explain.

Sketch (1) shows the idea, and a very clever one it is, in my opinion.

There are usually TWO transfer ports from crankcase to cylinder so arranged as to lead two jets of incoming gas at such angles that they impinge upon one another well up the cylinder and unite into a common stream aimed right to the top of the cylinder space, so obtaining the desirable feature of filling the cylinder from top downwards.

This system has the advantage of enabling a lighter, better balanced and more easily machined piston to be made, the reduction in the weight of reciprocating parts (to and fro bits) usually resulting in a higher speed engine.

Opponents of this idea claim that its disadvantage is that it is more easy for the incoming mixture to swirl about and for some to pass out and be lost with the exhaust stream. I wouldn't know, for I am not an engine designer.

There seems to be no end to the variations of design embodying the fundamental two-stroke principles outlined. At least one maker of motors for cycles arranged for the inlet and transfer operations, in-

stead of being controlled by the piston skirt and top, to be handled by a rotary valve mounted on the crankshaft. It will be seen that this enables the designer to plan for these operations to occur anywhere in the crankshaft arc irrespective of piston position.

Most two-strokes develop their best power around the 2,800-3,000 revolutions per minute mark. At these speeds, the cycle of operations has taken me well over a thousand words to describe what is happening about 50 times per second.

Bearings which are hammered at that frequency have to be good, and it will readily be seen that without oil their life would be a matter of minutes only.

I first ran two-strokes in the early 1930's. They were way ahead then, of course, against the ones which had preceded them, but without selecting any particular make for mention, to-day's products are without doubt as reliable as man can make such a piece of complex equipment commercially, and given fair service and maintenance, will render thousands of miles of yeoman service.

Learn all you can about your engine. If it's going, leave it alone. If it stops, use your knowledge to solve the problem, thinking of SIMPLE THINGS FIRST and if you do any dismantling GO GENTLY; your engine is a precision instrument.

YOU CAN GO ANYWHERE ON A



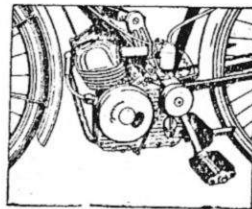
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# TRIAL BY CUCCILO

How Mr. Arnold W. Jones (Technical Department Britax Ltd.) followed "THE EXETER"

THE expressions of surprise at check points and the remark that "A Special Medal ought to be given to me" were caused by the fact that my machine in the Exeter was none other than a 48 c.c. *Cucciolo* mounted on an ordinary bicycle fitted with the luxury of spring forks.

Certainly an unusual mount for such an event, but nevertheless it gave me the opportunity to follow this time-honoured trial and enjoy a most memorable week-end at the cost of a few shillings.

So many people have asked me "How did it go?" that perhaps my experiences may be of interest to others and may encourage the more sporting cycle motor owners to "have a go" at main road trials.

The Exeter as most people are aware covers some 300 odd miles of main and secondary roads and includes some several not too severe Trial Hills with a few miles of "continental" going. Competitors start at 10 p.m. and ride through the night finishing at about 3.30 p.m. the following day. During

this time an average speed of about 20 m.p.h. has to be maintained and as usual marks are lost for being early or late, and failure on the hills. On the night run no difficulty was experienced in maintaining the set average. The excellent *Cucciolo* lighting equipment proved entirely adequate except in the heaviest mist, and greatly assisted in maintaining the schedule. A hectic two wheeled slide on a patch of ice caused quite an exciting moment, but the lightness and natural stability due to the position of the motor unit ensured no loss of control.

Using a normal road gear the machine was quite capable with bottom gear engaged of tackling all hills encountered except the actual trial's hills themselves; these had to be pushed up while the clutch was being slipped, but these drastic measures did not have any ill effects on the clutch which required no attention throughout the trip.

Motoring over rough tracks and through mud and water was rev-

elled in by the little machine and the fact that no damage was suffered by the cycle frame tends to disprove any theories that cycle motors are too powerful and heavy for normal cycles.

The brakes which were of the normal internal expanding type were more than adequate even on the steepest descents which, in some cases, were of considerable length.

The normal size cycle tyres fitted proved adequate and due to the direct chain drive of the *Cucciolo* no excessive tyre wear was experienced.

Bournemouth was reached without real incident with the rider not unduly fatigued if a little saddle sore.

At no time did the engine give the slightest anxiety or appear any the worse for its journey. Just over one gallon of petrol was used and it would be difficult to find a cheaper and healthier form of entertainment.

Did somebody mention "The Land's End?" !!!

## READING - LONDON - PARIS—49/6½

THE rider of the *Cucciolo* depicted on our front cover in this issue is Mr. Martin Rendall of Reading who, by the connivance of a friend in the right place, spent his twenty-second birthday on an enjoyable trip from his home to Paris at a cost of 49/6½d.

This remarkable feat was accomplished by riding via London to Lympne Airport, flipping across the channel to Le Touquet by Silver City Airways ferry plane and then riding on to Paris to finish the trip with still a drop of petrol left from the gallon taken on. (Note that extra petrol tank)

The actual expenditure for the trip was 35/- passenger fare (Winter rate), 5/- cyclemotor ticket, 5/- Ministry of Aviation Tax and 4/6½d. for the aforementioned gallon of top grade petrol. It is an outstanding example of the economy of the cyclemotor for touring as well as a tribute to the farsightedness of Silver City Airways, Ltd. in fixing their rate for motor-assisted cycles at the same modest figure as that charged for pedal cycles.

Naturally interested in this story, *Power and Pedal* sought details and we are advised that the Summer

Services, which start to operate on April 1st., will offer a plane every 15 minutes from 8 a.m. until dusk every day, including Sundays, at fifty bob all-in—£2 passenger, 5/- machine and 5/- tax. Except at peak holiday periods when the Service is fully booked the rider can simply appear at Lympne with his passport (No visa necessary for France) and board the next plane off without formality. Flying time is 20 minutes. Booking, however, is advisable and as a service to our readers a supply of forms will be held at this office.

# HOW LAMP BULBS ARE MADE

A first hand report on a visit to the North London factory of VITALITY BULBS LTD. to see the fine art of lightmaking.

## The Filament

**M**OST people, of course, know that the part of the bulb which glows is made of tungsten wire and is called a filament. When you look at it normally, it seems awfully thin, but when you actually see it before it is wound in a coil, and you will only see it if you have good eyesight, it is finer than any girl's hair.

To ensure that the turns of this coil are even it is wound round a softer wire which is later dissolved away by acid. Every reel of tungsten wire differs in some slight way from another, and to make sure that all bulbs made of a particular rating give the same light the first filaments wound from a coil of tungsten wire are made into finished bulbs for laboratory tests while the coiling machine is stopped. Only if they pass the rating and light emission tests is the machine allowed to continue coiling the tungsten wire into filaments.

The little coils of tungsten left are mounted on an electrode—two pieces of wire which are separated by a glass bead and the top ends flattened and bent into hooks to hold the end of the filament coil. The hooks are clamped flat to hold the filament firmly in place.

## The Glass

While all this has been going on a lot of highly skilled girls have been blowing the glass balloons which are to go round the filament. Not actually puffing away as in the old days but using compressed air controlled by a foot pedal. The shape of the bulb comes from the shape of the mould the glass is blown into.

Vitality blow them thick, not thin — this saves a lot of hurt fingers when you are in a hurry to change bulbs in the dark.

These balloons are blown from tubing and after blowing they are examined against a lighted screen to see if the glass is clear. If they are satisfactory the balloon is then cut off from the rest of the tube with a short neck about  $\frac{1}{4}$  in. long.

The filament is now inserted into the glass balloon. After which the bulb is again examined against a lighted screen to ensure that the filament is in the correct position.

## The Vacuum

The other end of the 2in. length of glass tubing is then put into an air-tight connector which is part of a manifold holding some 36 bulbs. and all the air is pumped out. The actual air pressure inside the bulb after pumping is as low as .00001mm Hg (as measured on a Macleod Pressure Gauge). This is very roughly about one eighty millionth of normal air pressure and is as perfect a vacuum as it is possible to secure. When the operator is certain that the vacuum is as good as possible she then picks up a hand gas torch which throws out a high temperature flame. This she points at the glass tube just below the neck of the balloon, and as the glass begins to melt the bulb seals up retaining its perfect vacuum, the balloon tapering off to a short tail of glass. At this stage the bulb can be lit up by making contact to the wires sticking out of the glass tail, and the bulbs are now tested to see if their rating is correct.

## Finishing the Bulb

The bottom tail of the glass is put into a metal cap. In the cap there are two holes through which the ends of the wires leading into filament go. By soldering these protruding ends contacts are

made to get the electricity into the bulb. And now you have a finished bulb, but it is again tested for its correct rating and a good vacuum. After this the bulbs are handed in to the Packing Department, but before stamping the bulbs with their correct rating and putting them into cartons they are again tested—to make sure that no bulb has been damaged in cleaning and that no dud bulbs go out.

## Cyclemotor Needs

The bulbs normally recommended for use with cycle dynamo lighting sets are based upon an average cycling speed of 12-15 m.p.h. with a power-assisted cycle unit; of course, these speeds are very low and different bulbs should be fitted to stand up to the increased output of the dynamo. A rough guide is to fit bulbs of a combined wattage of half a watt higher than those normally recommended. An example will perhaps make this clearer. Say that for normal cycling speeds the recommended head bulb is 6Volt 3Watt and a 6Volt 0.4Amp (0.24W) tail bulb. This adds up to a combination of 3.24 Watts. On using these dynamos with power-assisted cycles you should keep the same head bulb but use a 6Volt .15Amp (9.9Watt) tail bulb. The new combination adds up to 3.90Watts which is roughly an increase of half a watt. The new combination of bulbs while still giving the same beam of light at the front will provide a tail bulb which will stand up to the higher cycling speed, and also stand vibration better.

I was most surprised to learn that it takes three months and in some instances six months training before a girl can really do her work properly. It is good to know that there are firms who do use human skill and care in the making of their products, and who do not churn them out on mass production machinery as is often the case today.

# ARE YOU LOOKING FOR THE *BEST* MOTORISED BICYCLE?

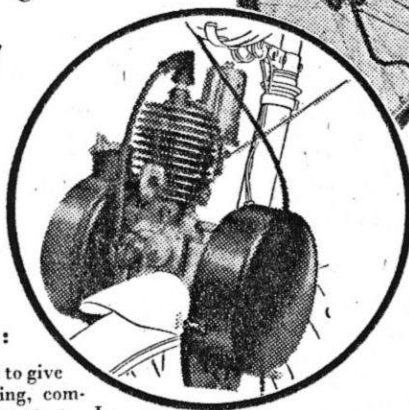
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Please send me full details of the VELOSOLEX and name of nearest stockist.  NAME.....  
 ADDRESS.....

# Focus on CYCLES

by

VELO

ONCE upon a time there was a man who lived in a country where there were no swans, but he had heard much of these beautiful birds from travellers in other lands and was deeply interested in them.

It came to pass that the opportunity arose for him to travel once to a land that abounded with swans but he was able to spend but a short time there and that time in the capital city, so the only way he could see swans was by visiting the zoological gardens where, of course, they kept only those swans that were unusual to them—black ones.

So the man went back to his own country saying, "All swans are black. With my own eyes I have seen them." And all those who heard him also believed this, since they knew him for an honest man and were prepared to accept the evidence of his own eyes.

Unfortunately many buyers of bicycles are in the position of that traveller looking for swans. If we get bad beer from a pub or bad service from a tobacconist it does not matter overmuch since we simply don't go to that pub or shop next time. But an ordinary man probably only goes bicycle buying two or three times in his life and bad service there will spoil his pleasure and colour his outlook for years. We of *Power and Pedal* know only too well those manufacturers who do not bother to answer enquiries and those "agents" who keep their cycle stocks hanging from the ceiling to be out of the way of the radio sets, perambulators and mobo-ponies, and

cannot even price the machines they are supposed to sell without reference to catalogues:

But there really are more white swans than black in the Trade and if the prospective buyer is firm and remembers that Britain makes the best cycles, even if she sells them badly, he can still get the machine that suits his needs *provided he knows what he wants.*

The experienced clubman and racing type will already know what he wants and probably be on friendly personal terms with his regular dealer. Furthermore he, as an enthusiast with an interest in cycles that looks to ordinary mortals like fanaticism. But even this man may make mistakes if, unlikely event, he chooses a cycle for use with a motor attachment on the lines with which he has been familiar in "pure" cycling.

Generally speaking weight becomes less important, within reason, wheel strength and rim and tyre section more important and riding position quite different, for cycling with a motor. Individuals, however, will want their motorised cycles for very different purposes and it is this matter of the use to which the machine will be put that is the most important factor in choosing both cycle and engine.

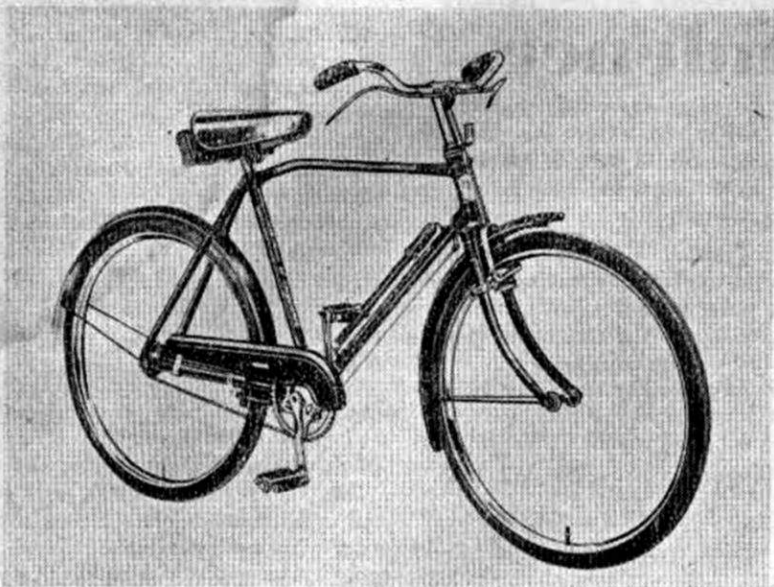
If you are a tourist with long cycling holidays in mind the "dreadnought" type of machine will not appeal. The "feel" of a light and lively cycle is just as pleasant with the motor on as without and for such a rider the standard sports-type frame giving a fairly low riding position relative to the handlebars and fitted with wheels having extra strong spokes and a 1½ in. rim and tyre at least on the driving wheel, will provide all the pleasures of real cycling

with an ample margin of safety and comfort to match the extra speed and range afforded by the engine.

On the other hand the man who is going to use his machine solely for daily journeys to and from work, with perhaps a well laden trip to the allotment on week-ends, will require the strongest machine he can find and will be little concerned with weight. For him the sturdy roadster with an oversize tyre on the driving wheel is the natural buy. Any well-known make with local agent service will appeal to him equally well and all he demands to his machine is absolute reliability with the minimum of maintenance. Appearance will not be of prime importance and, if he is a sensible man, he will prefer celluloid bars and good enamel to lots of chrome.

But there is a third type of rider somewhere between those two and it is this rider who looks like being the real mainstay of the cycle-motor business. This man (or woman) is attracted to the cycle-motor chiefly as a time, money and labour saving means of transport but uses this transport for both business and pleasure and from choice rather than necessity. To such a rider the cycle-motor is part of a way of living and has an importance greater than its mere usefulness. Higher standards of compromise in design for the particular job of motor-assisted cycling are thus demanded.

Comfort and safety will rank high in the requirements of these people, reliability must be taken for granted and cleanliness and neat appearance too. This question of appearance must also apply to the rider as well as the machine, so that the riding position has to be dignified as well as comfortable, mounting and dismounting must be



*THE NORMAN CYCLE, specially designed for cyclemotor use, looks conventional but has many unusual features for strength and safety.*

easy in normal clothes and the luggage-carrying basket, carrier and/or panniers must be permanent and usable features of the machine. It is to these riders that the special built-for-the-job cycles will most appeal, whether built in one with their engines or separately and, because this is still a new part of a new market, the range is not yet wide.

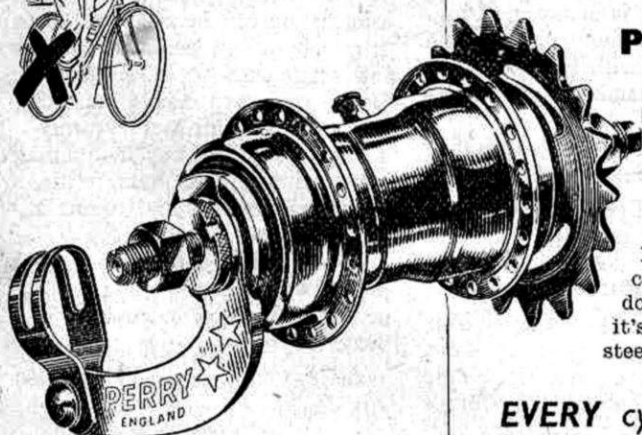
At one end of this range is the real "special", an obviously new and different kind of cycle with no attempt at traditional appearance. The *Phillips* machine pioneered by that enterprising young-old dealer, Mr. Holt of Ilford, is a good example of this type. It has a strong all brazed-up frame, very stiff at the rear and with a curving top tube dropped at the seat end. Spring forks are standard as are hub brakes, and the saddle and handlebars both follow autocycle practice. Such a machine is neither very light nor very cheap, but it

*Continued on page 19*



**ALWAYS CYCLE IN SAFETY—FIT A**

### **PERRY Back-pedalling Brake**



**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.

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**—all the safer to cycle with!**

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# 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*

## More on Free-wheels

First of all, I wish to congratulate you on the excellence of your new magazine—it certainly fills a long-felt want. It has already rendered me a service with its information that there is a Cyclemaster Workshop Manual to be obtained—something I did not know existed.

In your editorial comment in the issue for February, you mention that your pages are open to information regarding what is available and what is wanted in the cycle-motor field. One thing which I think is required—particularly by Cyclemaster users—is a spare petrol-can carrier. There is one available I know, but have you ever lifted one? It appears to weigh a ton even when empty. Yet, whilst in Paris last summer, I notices that at least half the motorised cycles there were sporting a very light-weight spare can carrier, to which one fitted one's own can, resulting in a light-weight, useful job. I bought one myself for about 7/- and have now fitted it up with an old quart-size oil can, which looks quite smart when painted. Now, why cannot some English manufacturer produce such a thing?

Regarding rapid wear on the ratchet of a free wheel, which you state is a new story to you (see February issue, letter from Harry of Nottingham.) It isn't a new one to me! Goodness knows how many times I have replaced the springs in the free wheel of my wife's cycle which is powered by a Mini-motor. The ratchets are also going, now.

Funnily enough, it is not a trouble to which the Cyclemaster

seems prone. Can it be, I wonder, due to the liberal spraying of mud and water from wet roads, which is picked up by the tyre roller of the motor?

Even a hockey stick guard does not stop it.

All good wishes for the future,  
Orpington. L. WALKLIN.

## Front Drive Advantage

May I thank you for a long-felt want? A magazine for P.A.C.'s. If there is any fault in it, it is that it is too small, and is not issued frequently enough. May I suggest a bigger one at 6d. and out twice a month. Re the trouble with a free-wheel. It seems to be common with rear motors. I run a front-wheel motor (Cymota) and a three-speed gear and I find it perfect. I use low gear to start up cold on a hill, but after starting I change to top and you can imagine how easy it is in top gear, and even with a rear motor there would be no trouble with mud and dirt as it is enclosed and only the sprocket is outside.

Here's hoping for a highly successful year.

Newcastle-on-Tyne CYMOTA.

## Manufacturer's View

With reference to the letter from Mr. Kemp in your February issue, I would point out that Mr. Kemp is quite right about the trouble with the ordinary ratchet free-wheel used with a cycle motor. The ordinary free-wheel is designed for occasional use only, but of course with a cyclemotor it is free-wheeling 95 per cent. of the time and there-

fore must be kept very well lubricated, but even then the ratchet soon wears out.

For this reason, with the latest Cyclemaster model with the back-peddalling brake, the free-wheel is of the clutch type and when free-wheeling is absolutely free with no ratchet operating. There is, therefore, no wear.

Yours faithfully,  
Cyclemaster Ltd.  
CALLCOTT REILLY,  
Managing Director.

## A Reader Likes

I have just bought *Power and Pedal* No. 3 from a local book-stall and intend to place a regular order with my newsagent. May I congratulate you on a really first class job, especially the title page the size of the type and the interesting way in which all the articles are written. After reading No. 3 (several times!) I am very disappointed at having missed the first two numbers and I wonder if it is possible for you to supply me with a copy of each of them? (Yes—from Horace Marshall and Son—Ed.). Reference your Editorial Announcement regarding readers' letters, may I suggest that they must be increased if possible as much information can be obtained from them about personal experiences and suggestions. The "Service Dept." was especially interesting to me as a Mini-Motor owner—it is an excellent way of obtaining information from manufacturers about maintenance and recent improvements.

In conclusion may I wish your journal every success—it is going to be very useful to cycle-motor owners.

Wallasey L. F. DOWLER

## Four-stroke Engines

If my interpretation of Mr. L. Smith's letter (Correspondence Feb. issue) is correct, he is advocating that your most excellent

journal be devoted entirely to the Two Stroke Cyclemotor.

If this is so, I sincerely hope his letter will not be taken too seriously, for whilst I agree that most of your readers will be using the Two Stroke engine, there must also be many readers like myself who find nothing complicated in the 48cc Four Stroke *Cucciolo* engine and prefer it for its higher output and greater efficiency.

No, Mr. Editor, let us have all the "Gen" on all types of Cyclemotor, after all, one does not have to read what one does not understand or is not interested in.

L. S. ROOKE

#### Trade Please Note

I should like very much to take this opportunity of congratulating you on your excellent publication, *Power and Pedal*.

It is just what the cycle-motorist has needed and, in my opinion, will prove invaluable as regards keeping the cycle-motor owner and prospective owner up to date with accessories and the various modifications of the different types, as well as the other topical features.

I sincerely hope that this pleasing little magazine will flourish.

Sutton-in-Ashfield R. SWANN.

#### Ninety-eights

Like so many of your readers I have just discovered your excellent little magazine on a station bookstall. It fills a long-felt want since so little space can be given to very light machines in the motor-cycle journals. At the same time as the owner of a *Bown Autocycle* I feel that there should be some catering for this type of machine as they have many points in common with the motor-assisted bicycle—more

than with the motor cycle. I agree with your correspondent in the February number who asked for plenty of technical advice. Whilst it is true that these engines are remarkably simple I have found that there are plenty of things which puzzle me especially with regard to the electrical side of the machine. I am looking forward to future numbers with high hopes that we 98 cc owners may not be left out in the cold.

Sidcup.

DEREK G. YIRRELL

#### Do You Agree?

May I congratulate you on your new Magazine. I chanced across the February issue in a Railway bookstall and found—to use a well-worn phrase—that it was just what was required to fill the gap. However, I have one small complaint, namely, why not advertise your magazine? Had I known

## POWER and PEDAL

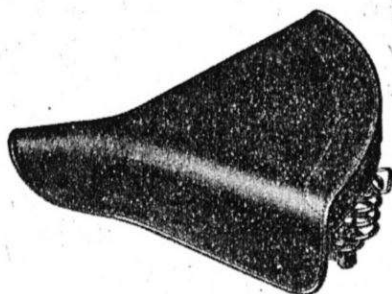
**PLUS COMFORT\***

### ★ FIT THE LYCETT S. 186

To enjoy to the full a power-assisted bicycle, a larger and more resilient saddle than normally fitted to a pedal machine, is an essential.

The LYCETT S.186 is ideally suitable having a spring mattress suspension and wider seat surface, and is specially designed to facilitate pedalling should this be necessary. The girder frame has two rear coils and the padded top is made of non-cracking waterproof material.

THE S.186 REQUIRES NO SPECIAL FITTING, JUST PLACE ON SEAT PILLAR AND TIGHTEN NORMAL CYCLE SADDLE TYPE CLIP IN THE USUAL MANNER.



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Where **COMFORT** counts, choose a

# LYCETT

LYCETT SADDLES LTD., BIRMINGHAM,

of the publication of *Power and Pedal* I would have been in" at the first issue.

As to suggestions, more pages would be the first, even though this does raise the price to 6d., one article I could suggest to utilise the extra space is a monthly page on "Readers' Tips". One other article which I think would be appreciated would be a "short" on the hazards of passing the Driving Test. There is a vast field left to you and although I may not envy your task I do wish you every success in the future.

GEORGE ROWLANDS.

### What Cyclists Think of Us

Recently I have received copies of your excellent publication.

I was very pleased with it but like some others would like to see a dearer and more comprehensive publication, costing say a shilling and being issued fortnightly.

Prior to hearing from the M.A.C. Section of the British Two-stroke Club that there was such a publication as *Power and Pedal* I had been relying on the motorcycling press for bits and pieces of news concerning cyclemotors.

"A short time ago a letter appeared in the "Editor's Correspondence Column" of one of these motorcycling journals "tearing a strip off" cyclemotorists. The following is a quotation from that letter.

"A person who fits a motor to his machine is no longer a cyclist, and he must resign himself to being considered the lowest form of mechanically propelled life. The great majority of these cyclemotorists are simply people who cannot be bothered to push an unroadworthy machine to work each day. One just cannot help noticing how some cyclemotorists neglect their machines, especially with regard to brakes and lighting."

Now surely it is up to us as owners and riders of motor assisted cycles to prove to every section of the community that this is not the case and I am sure that with the help of the hints and tips *Power and Pedal* will give to us, will do a great deal to assist us to achieve this end.

Wishing you, Sir, and your journal every success in your efforts to give cyclemotor enthusiasts a firstclass journal,

W. N. STEWART,  
Member of the B.T.S.C.  
(M.A.C. Section.)

### Our Role

A few days ago, in search of something interesting to read on a somewhat tedious train journey I bought a copy of your February issue which I read from cover to cover before the journey ended and sincerely congratulate you, first of all, on filling a gap in Motoring

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A WORD IN YOUR EAR

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Not a clip-on, but part of your cycle

1. Fitted to your cycle free of charge
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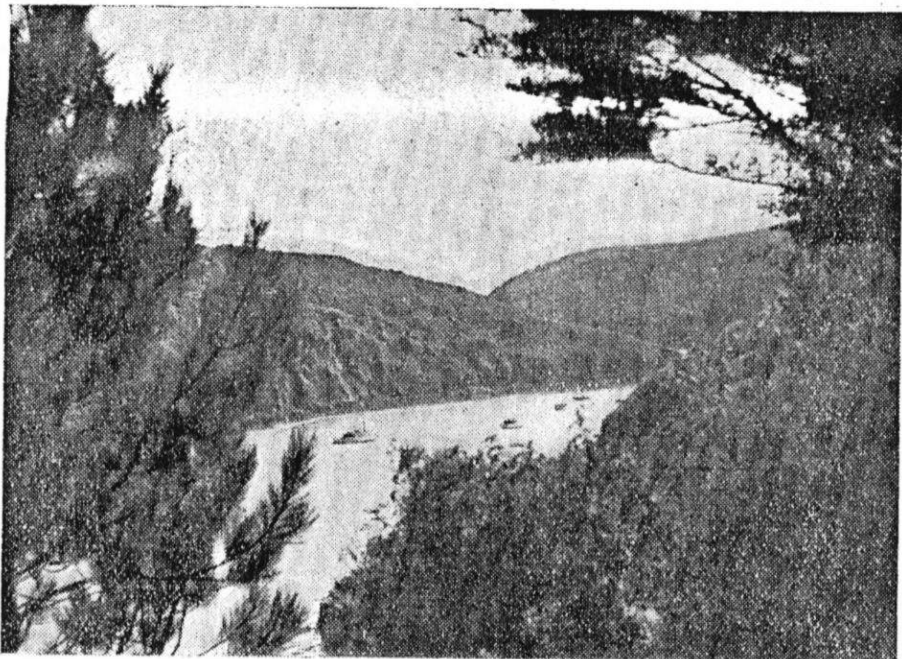
Your Leading Motor Cycle and Sidecar Dealer

All Leading makes in stock

Another very attractive  
scene in  
SOUTH WALES,  
a green and sheltered  
haven,  
SOLVA HARBOUR

Photo by:

ERIC FREEMAN



Literature which has existed all too long; next on the sound, practical and easily read articles and last but by no means least on the very apt title. A keen cyclist and angler since schooldays, but with the half century mark now well behind me, I have been interested in Cycle-motors for some time. With a view to eliminating some of the "PUSH" out of "Push-biking" I intend buying one before the opening of the next angling season, by which time I hope, through the help of *Power and Pedal*, to know enough about the various makes to make my choice. I have already placed a standing order for *Power and Pedal* with my newsagent and should be pleased if you would send me issues 1 and 2 for which I enclose P.O. for 1/-.

I agree with J. W. Jordan re articles on two-stroke engines, Hints and Tips, etc., and also support L. Smith in his plea for continued simplicity and would be delighted to see some British manufacturer develop a diesel-type unit on similar lines to the German unit recently made avail-

able in this country. In conclusion may I wish *Power and Pedal* all the success it deserves.

Wolverhampton. F. S. JORDAN.

#### A Club

It was with pleasure that I was lent a copy of *Power and Pedal*.

It has now been ordered so that I shall get it regularly. You might be glad to know that we have formed a club in Brighton with the idea of Runs and Socials, etc. We have about a dozen members and generally go for a run Sunday mornings.

We have all found it great fun to belong to a Club as we can sort out one another's troubles so much better.

I have several Photos taken when we have been out and would be glad to lend them to you to publish if you care to.

Wishing your journal all the very best of luck.

Brighton and District Power Assisted Cycle Club

E. G. HOREMAN.

## Flashes

### AUTO CYCLE UNION TRIAL

The A.C.U. Motor Assisted Cycle Demonstration Trial for 1953 is being arranged for April 26th. And the venue will probably be the same as last year, Wembley Stadium. Regulations and entry forms will be available from the A.C.U., 83 Pall Mall, London, S.W.1. during April.

### Former B.C. M.C.M. & T.U.

#### Chief Honoured

At last week's Investiture, Major H. R. Watling received from the Queen the insignia of the C.B.E. conferred on him for his services to the bicycle and motor cycle industries during the last 30 years as Director of the Manufacturers' Union.

## WE ASKED THE MAKERS:

Suggestions for

Improvement of Bicycles and Components From :

### NORMAN CYCLES LTD.

Ashford : Kent

Your remarks have been noted in connection with the D/MA and C/MA Models, and your reference to the fact that they differ little from standard roadsters. We would, however, point out that the C/MA and D/MA Models have been designed to take either friction drive or the Cyclemaster with attention being given to more stability bearing in mind the vibration and additional speed expected with an engine fitted. The C/MA and D/MA frames are fitted with carrier type chain and seat stays to the rear frame, heavier gauge tubing is employed, and the front fork is of the carrier type giving additional strength to withstand vibration. The riding position has been improved by the introduction of the curved top tube on the Gent's version and the fitting of a large auto-cycle type saddle does tend to give greater comfort bearing in mind that the cycle is not pedalled for very long periods. Attention has also been given to mudguarding and the deep dome mudguards are now fitted with double nutted stays for additional strength, and front and rear number plates are also included in the specification, although these were not illustrated in our catalogue, but a separate leaflet is being prepared with these improvements. The demand for this machine has been exceedingly good over the past 6 months, particularly the model required for the Cyclemaster, which we supply less rear wheel for this purpose, but we are quite sure that the introduction of a light version of the auto-cycle fully equipped would sell in large quantities, providing (a) that the price was kept within reasonable limits, and (b) that the engine of same was efficient and troublefree.

### H. HOLT

Ilford : Essex

HAVING had over half a century of manufacturing and repair experience, I advocate: all metal frame lugs of sufficient strength, likewise all tubes, and of good quality; that all tubes be brazed into all lugs and not welded by hand or machine to make a frame that is going to receive an "attached" engine, especially when no springs are adopted in either frame or front forks.

The frame Seat-Lug should not have less than  $\frac{1}{2}$  in. slot to ensure its closing grip upon the saddle pillar by use of the bolt and nut.

Also the rear hub axles should not have any FLATS thereon; have a collar on axle to definitely fix the right hand cone position; be made of sufficient length to accommodate: 2 nuts each side of the frame (4 in all) 2 chain adjusters, 2 or 4 plain washers (not spring) provide for either a stand or carrier to be attached: because, rear axles are mostly made too short (Extension Nuts are bad as a substitute) by present day Manufacturers.

Cycle brakes even to-day are greatly in need of improvement, especially the cable type; these show their faults by: rust, cracked outer and inner wires, bad soldering, or fixing of inefficient designed nipples and wires not first greased at time of assembly.

The above suggestions I make because if Bicycle Manufacturers cancel their Guarantee when an engine unit is "attached", then they should make provision by improving and strengthening their designs to comply with power-unit-drive whether tyre, chain, gear or shaft is so applied, if they want to sell SAFE bicycles for the latter purpose, to which a Guarantee could then apply.

## THE "REX" CYCLEMOTOR

—But where's George?

YET another German cycle-motor is reported to us from the Irish market and a very neat and interesting-looking job it is.

Called the *Rex Bicycle Motor*, the engine is a 40 c.c. two-stroke with an aluminium alloy cylinder having a Perlit cast iron liner pressed in and a flat-topped, alloy piston and the usual flywheel magneto.

The really interesting part about the specification, however, is the transmission which is, so far as we know, unique. The engine is mounted over the front wheel and drives by endless Vee belt through a hand-operated clutch and a 4 to 1 reduction gear. It is claimed to give .85 horse power at 3,500 r.p.m. which is equal to about 18 m.p.h.

A neat petrol tank is mounted behind the handlebars and has a capacity of  $1\frac{1}{2}$  litres (approximately one third of a gallon) and the handsome, plated silencer carries a long exhaust pipe to take noise and fumes down to within six inches of the ground.

The Bosch magneto has lighting coils built-in and the machine is supplied complete with twist-grip throttle control, clutch control, spanners, tax disc and number plates at £30.

Our informant, the agent George Norton says of it: "The two outstanding features of it are easy starting, (you need only walk a couple of yards, release the decompressor lever and off she goes) and the fact that four-stroking is absolutely absent at all times."

Where is this George Norton? We just don't know. It would take an Irishman to do it, but we have his letter on headed note paper with the address 43, Ballybough Road, and the phone number 41330, but no town or city is mentioned. The postmark is *Baile Atha Claithe*, which may help some better informed than we!

## FOCUS ON CYCLES

—continued from page 13

is built to travel quite fast with comfort and safety, especially useful with Mr. Holt's pet engine, the lively *Cucciolo*.

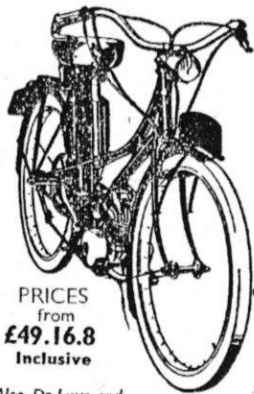
A special with a completely different approach is the *Mercury* model produced to match up with the *Cyclemaster* wheel unit. This has quite a normal-looking frame but a startling departure from standard cycle practice in its huge balloon tyres which afford great comfort over bad roads and must save the machine as well as the rider a lot of wear and tear.

Very interesting by reason of its careful design that caters specially for the needs of the critical cyclemotorist whilst retaining an almost completely conventional appearance is the *Norman*, illustrated on page 13. The maker's own description is given below and it has an obvious strong appeal to the discriminating newcomer to power-assisted cycling.

Sooner or later even Britain will have to abandon the present quite inexplicable division between the cycle and motor invoiced separately and those built and sold in one piece. When that happens such machines will be of special interest to the person who makes the cyclemotor a first choice as personal transport. At the moment there are two on the home market, *Mobylette* and *VeloSolex*, and they are officially classed as auto-cycles although the latter in particular, with its friction-driven front-end motor, is more a true motor-assisted cycle than some of the "clip-on" assemblies sold as such. It is interesting, therefore, to note that this design, one of the most widely used in the world, differs from the conventional cycle only in such items as grease-packed hubs (to reduce maintenance) and a built-on carrier, the frame wheels, brakes, etc., being special only in their designed ability to provide long and troublefree service.

The general conclusion must be, therefore, that the bicycle as we have known it needs little or no modification to basic design to be adapted as part of the complete cyclemotor, given good materials and proper attention to detail design. With 1½ in. wheels as standard, weight and cost need be little higher than normal pedal cycles. A saddle that is a real seat is essential and the makers cater for this adequately, while spring forks are available as a luxury extra to fit most machines. If the buyer searches the agents diligently until he finds a white swan and then orders a machine to suit his own specific requirements he will have safe and happy cyclemotoring for years to come. But the market has as yet received little attention from the cycle Trade as a whole and we may yet see innovations that will change the picture and widen the rider's choice of cycles for motors.

*A little money goes a long way  
... if you GO BUY*



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Weight 65lbs. One simple control.  
Tax. 17/6 per annum. 200 m.p.g.

"Mobylette" solves ALL your transport problems

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## Motorised Cycling 15 miles for 3d.

With a petrol consumption of 240 m.p.g. the "Berini" is the answer to motor assisted cycling.

Light, reliable, fitted with declutching device and can be fitted to any make of bicycle.

32 cc. 2 stroke engine. Weight only 15½ lbs.

Trouble Free  
**BERINI**  
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# MOTOR IMPORTS COMPANY LTD.

158 STOCKWELL ROAD, LONDON, S.W.9 Phone: BRlxton 6251

## FOCUS ON CLOTHES : ECHO

Following on our article on the problem of clothing for cyclemotorists in the March issue, Messrs. Pride and Clarke of Stockwell, well-known as providers of almost everything for road-users, contacted us to admit that they also knew of nothing that quite fitted our demands for really weather-proof clothes that were also strictly conventional.

They offered, however, details of their "Manx" suit and "Alaska" three-quarter-length coat, which they claim can fill much of the bill presented.

Both garments are made of



Left:  
Manx Suit



Right:  
Alaska Coat

Lovat green Wigan material and have all the seams taped and sealed for absolute water-proofing. The coat has a full-length lining, concealed zipp in front, deep storm collar and button cuffs. The two-piece "Manx" suit is also zipp-fronted, no fewer than five pockets and a self-supporting elastic waistband to the over-trousers.

### WEE JEANNIE DUNLOP

At the luncheon meeting of the Pedal Club in London on March 11th, Mrs. Jean McClintock, daughter of John Boyd Dunlop, told a gathering of members and guests the fascinating story of how she as an eight-year-old girl had watched the birth of the pneumatic tyre at her Belfast home.

She talked intimately of her famous father, her brother, whose tricycle inspired and tested the first tyres, and her mother, whose Scottish caution led her to syphon off the money that came in from the tyres and sent it to finance the sheep

farm in Australia which still provides most of the family income. It was a fascinating story and a moving one, and we will have pleasure in telling it in full, with illustration we hope, in our next issue.

### THE "ITOM" CYCLEMOTOR

A couple of years back a rear-drive motor of Italian origin made a brief appearance on the British Market and a few were sold. Now the *Itom* has grown up, or rather down, under the bottom bracket and makes a neat and effective unit.

A short test run shows a truly remarkable pulling power at low speeds from the 48 c.c. 2-stroke engine and there is a neat, foot-operated, engaging lever to aid control. *Power and Pedal* will have this machine on test in the next week or so and will make a full report in an early issue.

The importers are Amandi, Ltd. of Brixton Road, and the London Agents, Barry Bros., of Paddington.

### THE BRITISH TWO-STROKE CLUB—M.A.C. SECTION FIRST EVENT—A CYCLEMOTOR RALLY Sent in by Mr. Bert Evans, (Temp. Hon. Sec.)

The Section is organising a Rally of Cyclemotors to be held at the *The Old Ship Hotel, Tatsfield, Surrey*, on the afternoon of Easter Sunday, April 5th. The Rally will be preceded by a run to the venue starting from a meeting place at Keston Ponds (on the road from Bromley to Westerham) at 3 p.m.

Anyone with a cyclemotor will be welcome, including the four-stroke types, and there will be various competitions, etc., open to all, to stimulate interest in the machines and equipment. Representatives of Cyclemaster, Ltd. will be on the spot to demonstrate their famous wheel unit, and there is good news for users of this *marque* that the firm have just arranged courses on the Cyclemaster wheel to A.A. Scouts.

It has been decided to try to hold Club Runs monthly from the London area and those interested are asked to contact me with their ideas on how long such runs should be. 50, 100 and 150 miles have all been suggested for a day's riding and these also set a choice yet to be made between all-day and half-day runs. If riders will let us know what is wanted we will endeavour to organise it.

H. E. EVANS.

10, Elia St., Islington, London, N.1.

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### WHEN CYCLE DYNAMO SETS ARE USED



The same head bulb as recommended for use with the dynamo on pedal cycling should be used, but higher rating tail bulbs must be fitted to stand the higher output of the dynamo due to the higher cycling speed (For example 6v .15a instead of 6v .04a tail, the price for which is 9d. plus 2d. P.T.)

★ Vitality bulbs are available in a range covering all types of dynamo lighting. ★

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## THE SERVICE DEPARTMENT SAYS:

*A monthly feature provided by manufacturers' service departments on machine maintenance.*

### GENERAL

1. Every new motor is supplied with a detailed Instruction Book, profusely illustrated, and given a thorough perusal before opening the tool box, will save much time and temper! Copies of this book can be obtained from your Agent, or direct from Mosquito Motors, Ltd., Moorfields, Liverpool 2.

2. The unit is a first-class Italian precision engineering job and will give lasting satisfaction for intelligent handling and regular care and attention. Spares, service and advice are always available and in case of difficulty, contact the above address before 'tearing the unit apart'. Surprisingly enough, our Service Department *do* receive some "butchered" motors.

### FITTING

Many new owners prefer to fit the motor themselves, and with the Instruction Book *open*, there is very little to the job.

1. Hold the motor up under the frame, and check that the near side pedal crank does not foul the fly-wheel—if so, fit the special extended bottom bracket axle to give the required extra clearance—available at a cost of 4/9d.

2. Have motor horizontal or slightly nose-up, and *do* keep the gap as small as possible between roller and tyre, with lever in "off" or rear position—usual is  $\frac{1}{4}$  in. There will **never** be any roller slip if this, and the tyre pressure and spring tension are kept correct.

3. Do not overtighten the rear main mounting nut, it is held by a spring washer, and 'ham fistedness' will only mean buying new alloy blocks.

4. Do not cut off any excess of the front mounting spring strip at the top, bend it over slightly—you may require the same engine on a different frame sometime!

5. Mix half a pint of *clean* oil (see Instruction Book for grade) with 1 gallon of *clean* petrol in a separate container, then fill fuel tank. Do not be tempted to add that little extra oil. The Tank vent hole should be clear, and the fuel turned *on* before attempting to start unit.

6. Stand back from the job when the motor is fitted—if it looks right, it is right—if the unit is not square with either the frame or wheel, don't say "That'll do".

### RUNNING

Do use mixture control marked "Avviam" (Rich) and "Marcia" (weak), put to rich for starting, and hill climbing, find best operating position on the road. (Please note—this attachment is not a car type choke, but a true variable running mixture device, and should be used as such).

Do **not** ride below 4 m.p.h. under power, the Gears will last a lot longer if you don't. 4-20 m.p.h. is the range under power. Some owners say up to 30 m.p.h. but we turn a 'blind eye' to that—and praise the Italian workmanship!

### MAINTENANCE

This section of your Instruction Book, should not be 'skipped', dear reader, but inwardly digested. To save your pennies:—

DO clean the plug properly and regularly (150-200 miles).

DO clean the filters (two), one in tank, on the end of the fuel tap, the other in the carburettor top (300-500 miles).

DO examine and adjust, and clean, contact breaker points—.020" (300-500 miles) if required.

DO keep tyre hard.

DO keep fuel pipe away from frame parts, a small clip is cheaper than a new pipe.

DO decarbonise the unit, don't

## THIS MONTH

# MOSQUITO

put this really simple job off—it has been done in half an hour by an ordinary owner like yourself! Exhaust port and pipe included—most important.

DO have gears cleaned out and slightly smeared with fresh grease regularly, if used every day in wet weather. Any "Mosquito" agent will undertake this task reasonably and quickly, he has the tools for the job (Mosquito Motors Ltd., can supply to the private owner desirous of doing *all* maintenance work himself, a set of workshop tools upon application, at reasonable cost).

DO NOT remove, or even attempt to remove, the two alloy blanking (deflector) plugs in either side of the Cylinder, these are pressed in, and need not be disturbed ever.

DO NOT use incorrect sized spanners, metric sized can be readily obtained from your agent, and will save their cost in no time.

If your Silencer is the original long tubular Italian type, wash the glass wool frequently and at every decoke. New Glass wool can be obtained direct from your agent, or from ourselves.

Owners of English (Crossley) units, who desire to change the original Bletchley Carburettor, for an Italian Dellorto, can do so under the special exchange scheme now in operation. Much improved two-stroking and general all round performance will result.

### FINAL

1. Spares price lists cost 6d. from your agent.

2. Advice is freely given at all times.

3. The guarantee is for six months; providing the parts have not been tampered with and that the engine has not been used improperly—so, send, or take your unit

(Continued overleaf)

## Question and Answer

Address your queries to Q & A, and enclose SAE if postal reply is required. Full information must be given if our replies are to be helpful.

**Q.**

Do you recommend the second-hand buying of cyclemotors? Many people have definitely warned me against doing this but I would like to hear both sides of the case.

J. R. B. FISHER.

Bradford-on-Avon.

**A.**

If you buy a secondhand cycle-motor and have it overhauled by the makers Service Department you will have a machine as good as new for less money, but with a much lower re-sale value than a new one.

There is also the point that, although at least one popular make does incorporate all improvements to be brought up to date, most models change and you may be left with an obsolete type even when overhauled.

On the whole you will just get what you pay for either way, no more and no less, but it is nicer to buy new if you can afford it:

**Q.**

My bike has a Mini-motor with a decompressor just fitted and the last tyre gave me 1,700 miles wear. Is that reasonable? The wheel is 26 x 1½ and the tyre a tandem one.

H. I. JONES.

Ealing.

**A.**

Your tyre mileage is not good enough although not bad in view of the very small section of the tyre and the fact that it is not really the one for the job.

You do not state the type of roller used but we can advise the

correct tyre if we know that. We suggest you have the wheel rebuilt with a larger rim size, say 1½ in., and use the oversize tyre.

## MOSQUITO SERVICE

(Continued from previous page)

direct to your agent, without "opening it up" to see what makes it tick, or otherwise.

4. Don't always condemn the motor—it may well be YOUR fault. Cultivate "feel" on the road, help on hills when required, and do spend your maintenance time in the shed, not on the road-side.

5. MOSQUITO MOTORS LTD., are enthusiastic folk and will always be pleased to receive comments, adverse or complimentary. DO NOT HESITATE TO SEEK ADVICE AT ANY TIME, WE ARE KEEN TO SEE CONTENTED OWNERS. SAL-ES AND SERVICE:— MOSQUITO MOTORS LTD., MOORFIELDS, LIVERPOOL 2.

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CUCCILO  
EARLS COURT  
1953 MODEL**

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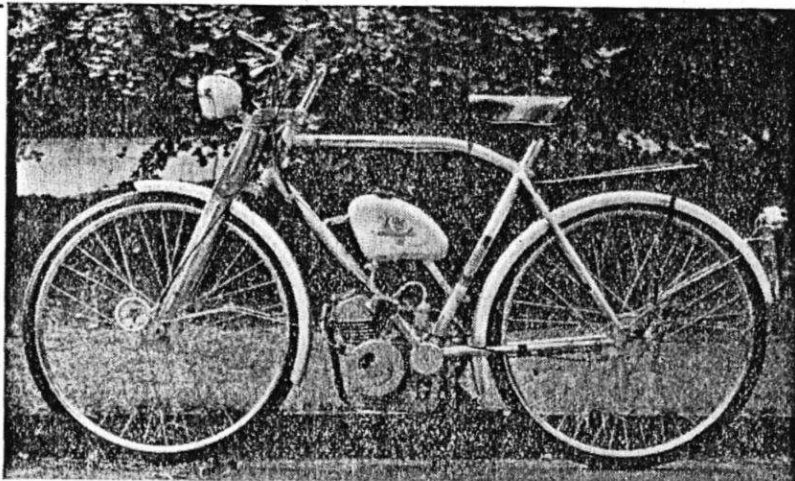
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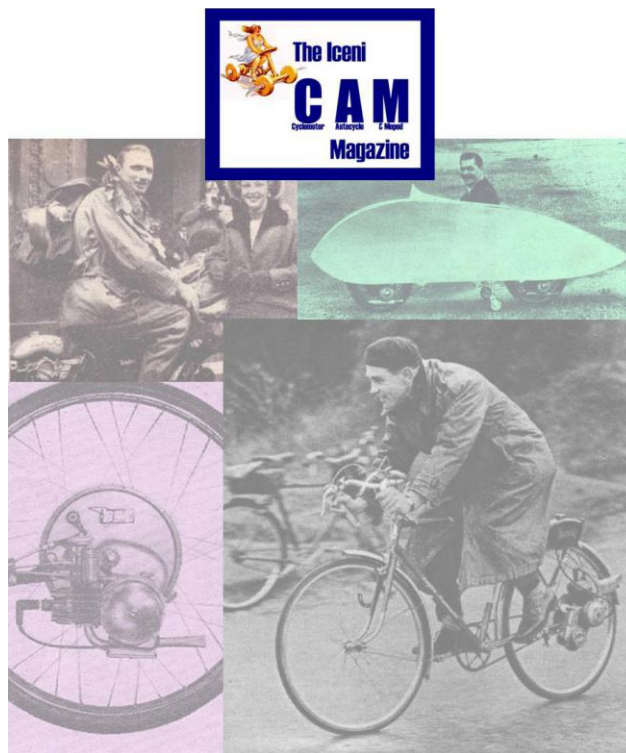
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