

# rohn you mustifilion Stands 1758 \& 196 

are sufficient reason why every car owner should pay a visit to Olympia. There are to be seen the exhibits of the two famous rubber firms-now amalgamated - Wood-Milne, Ltd., and George Spencer, Moulton \& Co., Ltd.

# WOOD-MILNE MOTOR TYRES 

The three types, "Gruvrib," "Steel-Studded," "Square-Tread," are distinguished by sound wearing qualities, perfect non-skidding devices, and phenomenal mileage returns. Designed to give most reliable and efficient service, and fully justify the confidence placed in them by makers and users alike.
WOOD-MILNE FOOT PUMP. A first-class engineering job, made as simply as is compatible with strength and efficiency. Known as the "Prince of Pumps"-not only of extreme value to the motorist, but easily adaptable where a hand pump is not suitable, or a power pump too elaborate.
WOOD-MILNE TUBES. To fit Wood-Milne Pnemmatic Tyres. With Patent "Embedded" valve pad, making leakage impossible. Made of the finest rubber obtainable and subjected to rigid tests.

## SPENCER-MOULTON MOTOR TYRES

The tyres for speed, reliability, for long life and economical service. In three types: "Three-Ribbed," "Steel-Studded," and "Plain-Square." "Their strength and endurance not only give freedonı from tyre trouble, but result in more mileage at less cost.
SPENCER-MOULTON TUBES. To fit Spencer-Moulton Pneumatic Tyres. Manufactured from rubber that has been tested and proved to be capable of giving the utmost satisfaction.
WOOD-MILNE, Ltd., and GEORGE SPENCER, MOULTON \& Co., Ltd., 42; 44, 46, Wigmore Street, London, W.l. Telegrams-" Wudmiln, Wesdo, London." Also "Spenmonl, Wesdo, London." Telephone-Mayfair 6789 and 6790 $\begin{array}{ll}\text { Manchester-21, Albion St. Gaythorn } & \text { Glasgow-io, Waterioo Street. } \\ \text { Birmingham-204, Corporation Street. } & \text { Leeds-68, Albion Street. }\end{array}$
Birmingham-204, Corporation Street.
Newcastle-on-Tyne-Haymarket Lane.
Dublin-69, Middle Abbey Street.
Bristol-14I, Victoria Street.

# Be sure to visit STAND 68 at olympia and inspect the <br>  

This is the first six-cylinder light car on the British market, and before you arrange to purchase any light car you will do well to inspect, the polished chassis on exhibition. Of this model, "The Motor" of Oct. 15th wrote: "The credit of first offering the public a six-cylinder light car falls to


Auto- Carriers (1911), Ltd. The outstanding feature of this six - cylinder engine is its extraordinarily clever design. The manufacturers intend in this model to produce a machine giving every luxury that the owner-driver can desire."
We repeat: Be sure to inspect this unique model at Stand 68.

AUTO-CARRIERS (1911), LTD. THAMES DITTON, SURREY.
Repair Works and Temporary Sales Department: 181-184, Hercules Road, Westminter Bridge Road, LONDON, S.E.1. Telephone ; Hop 310 and 311 .'

# It won'tstand thinkingabout At least, not if you want an ToI 

 Our Order Book is. filling up fast, Order NOW.so stop thinking about it and

## Loman Mater

 FOR
## L M

2-seater with dicky, 8 h.p., w.c., J.A.P. engine, seat starter, electric lighting, Michelin detachable disc wheels, Fully Equipped -

OUR STAND AT OLYMPIA 7th November to 15 th November. WILL
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Sall and
see us.

Send for Catalogue toLittle Midland Light CarCo.

## LIMITED,

Lynwood Road . . . . BLACKBURN.
Telephone-5713.
Telegrams-"ELM'
For Apency Terms appl
Messrs. J. E. WHITE \& Co. (Liverpool), Ltd..
(Liverpool), Ltd.
57 . The Albany, LIVERPOOL.

 Pungture Proof
Pneumatic Tyres for
Light Gars motorcycles are now fully under way, and early developments can be looked for.
NATCH THIS PUBLICATION

All interested in such a proposition are invited to enter into communication with the advertiser. This new device does not require a special cover, it is suitable for any make at present on the market, and is not too costly.



THE COMPARE THE C.C. of "A.V."-NAMELY, 654 C.C.
5-6 h.p. J.A.P. Engine, two-speed gear of epicyclic type, combined with multiplate clutch fitted to engine shaft, chain drive, Capac single lever carburetter with filter, cantilever springing, back and front, ThomsonBennett magneto, screen, Klaxon horn, complete tool kit, disc wheels.

Price $£ 130$, plus $12 \frac{1}{3} \% \quad$ Immediate Delivery.
BLENHEIM MOTOR Co.,Ltd.,15, Woodstock St.,w.1.
(Next BOND STREET.) Telephone-Mayfair 1981.
Sole Agents for London and Home Counties.

## From the Standpoint of LUBRICATION <br> STAND 290

is the most interesting to visitors.

the world's best lubricant is exhibited.

C. C. WAKEFIELD \& Co., Limited, Wakefield House, Cheapside, London, E.C.2. MOVEMENT

## Calthorpe Continuity of Service.

THE Calthorpe owner will enthusiastically tell you he gets round about 40 miles per gallon -

That his average speed on a long run equals that of any car on the road, irrespective of rating -

That his coachwork is by Mulliner, his tyres Palmer Cord, and that his equipment includes Brolt electric lighting and starting (starter is not standard on sporting models), Smith speedometer and clock, and Duco spring gaiters.
But his greatest source of satisfaction is that his Calthorpe keeps going week after week, month after month, with very rare need of attention or adjustment.

Write for circular and address of your District Agent.


CALTHORPE MOTOR Co. (1912), Ltd., Bordesley Green, BIRMINGHAM.


# Secqueville-Hoyau (England) Ltd., REGENT HOUSE, REGENT STREET, W. 



The Secqueville-Hoyau at the Paris Salon.

## Extract from <br> The Times

Dated October 15th, 1919.

- A Light Car whose makers are more concerned with detailed finish and perfection than price is the Secqueville-Hoyau, which uses a four-cylindered motor, bore and stroke 60 by iro mm . respectively, developing about $18 \mathrm{~h} . \mathrm{p}$. at its most effective speed,


## OLYMPIA SHOW <br> Stand No. <br> $9-$

 and which impresses one as being a junior Rolls-Royce. The car is well designed and the details have been worked out with obvious care. As with every other welldesigned chassis, the coachbuilder is able to supply most pleasing and proportioned bodywork, the enclosed cars on view on this maker's stand being an example of effective lightness and the use of every available inch of space."


## RADIATORS.



## R.R.C.

 productions are efficient - of the smartest designs and the finest workmanship.

Send your inquiries to-
Cheylesmore, Coventry.
'Phone : 675.
'Grams: "Coolers, Coventry.'

## EHDELD-(QN) "MADE LIKE A GUN." IMPORTANT ANNOUNCEMENT

We beg to give notice that it is not our intention to appoint at present any exclusive agents for the sale of the

## 10 H.P. RADIAL-ENGINE LIGHT CAR

Orders-subject to a strict "Fixed Price" basis agreement -will be accepted through any Motor Dealer on the Motor Trades Association List.
The price will be $£ 350$ nett at works, with either a fourseated body, complete with hood, screen, lighting set and spare wheel with tyre, or a two-seated body with dicky seat similarly equipped.
Owing to the wonderful results obtained in exhaustive road-tests, we have decided to devote our entire manum facturing facilities to the production of the $10 \mathrm{~h} . \mathrm{p}$. model, and to withdraw the $15 \mathrm{~h} . \mathrm{p}$. model for the present.

Enfield-Allday cars will be exhibited at the Olympia Show - Stand 77 - and demonstration cars of the $10 \mathrm{~h} \cdot \mathrm{p}$. model will be available in London during the Exhibition.

## complete specification on application.

ENFIELD-ALLDAY MOTORS, LTD. (Dept. H), SPARKBROOK, BIRMINGHAM.


## WINNER

of more Open Hill Climbing Competitions in 1914 than any other Light Car or Cyclecar.

## $\underline{\text { Reliability }}$

# BUCKINGHAM LIGHT CAR (New Model). 

## Famous $90^{\circ}$ Twin Engine, Shaft Drive.

WRITE NOW FOR PARTICULARS, WHICH WILL BE FORWARDED AT EARLIEST POSSIBLE DATE.

> J. F. BUCKINGHAM, DOVER STREET, COVENTRY.


"DEEMSTER" Touring Light Car. $10 \mathrm{~h} . \mathrm{p} ., 4$-cyl., four-seater, 440 Guineas complete.

"DEEMSTER" Standard Model. 10 h.p., 4-cyl, two-seater, 345 Guineas complete.


THE OGSTON MOTOR CO. (1918), LIMITED, OGSTON WORKS, ACTON, LONDON, W.4.

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Drip! Drip! Drip! If accident puts a leak in your petrol tank, you quickly notice it. The evidence is plain.
But there is another much more serious, and far more common form of leakage. That is leakage of the fuel charge past the piston rings.
No. You can't see it. Nor is there usually any tell-tale sound. Everything seems the same as usual. But gas is leaking-leaking steadily.
How? Between piston, piston rings and cylinder wall is a small clearance. When you use the correct oil in your engine this clearance is sealed. The oil closes it up, effectively retaining the fuel charge above the piston.
But suppose the body of the oil is incorrect. What happens? Only a partial oil seal results. On compression, part of the fuel charge escapes down past the piston rings. On the power stroke, part of the explosion escapes by the same path.
True, the leakage per stroke is small. But multiplied by over 20,000 piston strokes per mile in the four-cylinder engine, and the total leakage is clearly a factor to be reckoned with. It tells plainly in petrol consumption per mile. Gargoyle Mobiloils used as specified in the partial chart here published often cut previous fuel consumption figures from to per cent. to 20 per cent. Almost invariably the oil consumption also drops immediately.


## Chart of Recommendations for Light Cars and Cycle Cars

Explanation.-"A" means Gargoyle Mobiloil "A"; "Arc" means Gargoyle Mobiloil "Arctic"; "B" means Gargoyle Mobiloil " B "; " BB " means Gargoyle Kobjloil "BB": "E" means Gargoyle Mobiloil "E."


Gargoyle Mobilofts are sold by dealers everywhere

## The CARDEN Engineering Co., Ascot, beg to make the following

Ennouncement that maris well-known TANDEM TWO-SEATERS and MONOCARS have been sold to Mr. E. A. TAMPLIN, of The Railway Garage, Staines, Middlesex, and that in future these models will be sold under the name of

We beg to inform our prospective clients that these cars have been regularly turned out since April last, and are renowned for hill climbing and reliability as proved by the Nailsworth Ladder ( 1 in $2 \frac{1}{2}$ ) Hill Climb and by the Gold Medal gained in the recent Junior Car Club Reliability Trial. Both absolutely standard models and gearing.

## SEE OUR CARS RUNNING OUTSIDE OLYMPIA.

All Inquiries should be addressed to:
The Tamplin Engineering $\mathbf{C o}$,, Kington Road, Staines,


IHE M-L Magnetos-of which 50,000 have been supplied to H.M. Government-embody a nuriber of special features, each of which makes a distinct advance on all previous practice and goes to establish the efficiency and superiority of the "M-L."

Among them may be mentioncd the M-L patent condenser, easily accessible terminals, very light weight, watertightness, new patent distributor and high tension brushes which can be detached without disturbing the magnetos.

## Quality Tells!

The type illustrated is $G_{4}$ for $4-\mathrm{cyl}$. Light Engines up to 25 h.p. $A$ similar type-G6-for 6-cylinder Engines up to 35 h.p. is also made.
"M-L" Motor Cycle types are Kr for Single-cylinder engines, K2 for Flat Twins, and KV for V Twins.

[^1]
# A GOOD CAR 

You have had the merits of the

## DUPLEX LIGHT CARS ${ }^{\text {put before you by }}$ the motoring Press

 on various occasions, and we can assure you that the advantages of the Duplex are such as every motorist welcomes-Silence, Speed, Lack of Vibration, but we want to do more than that, so have arranged that every car becomes part of
## A Good Insurance

 scheme. This comes into force at once, and, briefly, it is as follows:-Every DUPLEX LIGHT CARSpurchaser of D has presented to him a 12 MONTHS' COMPREHENSIVE TARIFF POLICY subscribed by the
Liverpool Marine \& General
Insurance Company, Limited. EDMUND GORMLY, General Accident Manager.

Our present arrangements are that a minimum of 3,000 Cars will be delivered during the coming year, so that this will probably prove to be the Largest Single Motor Insurance Contract placed with any Insurance Company, and will tend to show that we are fully satisfied with the future of our car.

> THE BRITISH COMMERCIAL LORRY and ENGINEERING COMPANY, LIMITED (Sales De68, Bridge Street, MANCHESTER. Teeptonese Dorks: TRAFFORD PARK,



HELP THE by letting advertisers know that their advertisements

## BRITISH

## TYRES

## For Long Mileage and No Skids.

$A$ TYRE is worth the mileage you get out of it. To get long
mileage, your tyre must grip (a slipping cover gets worn through quickly-filed away by the road) and it must be well and truly made.

The finest materials and workmanship go to the making of BELDAM AllBritish Tyres. The design is based on sound theory which has been proved right. The tread is deep and narrow- (assuring speed and resiliency); rubber is thickest where wear is greatest. The " $V$ " shaped projections prevent both punctures and skidding.

If you would know the mileage value of a tyre you must ask a user of that tyre. Many users of Beldam All-British Tyres have recorded their experiences in a little booklet entitled "Testimony," which will be sent post free on request. It will help to make clear to you why "Once used, always used" applies to Beldam Tyres, and that


# WILTON <br> <br> High Grade Gars of PROVEN MERIT <br> <br> High Grade Gars of PROVEN MERIT <br> <br> 1920 MODELS. 

 <br> <br> 1920 MODELS.}

DELIVERIES COMMENCE DECEMBER IN ROTATION.
11'9 4-cylinder Engine. Mechanical lubrication
3 Speeds, Large Gear Box.
Gate Change, Nickel Chrome Gears.
Silent Worm Drive.
Extra large Steel Axles and Bearings.
Irreversible Steering.
Long Cantilever Springs.
9 ft . Wheelbase, 4 ft . Track. Detachable Wheels.

$$
5 \text { Palmar Cord Tyres, } 710 \times 85
$$

4 large Brakes in rear axle, large double-friction clutch.
High-class New Type Coachwork.
C.A.V. Electric Lighting, 5 lamps.

Watford Speedometer, Clock,
Horn, Tools.
Wide 2-Seater ( $\left.\begin{array}{c}\text { dick buill } \\ \text { in boal }\end{array}\right)$ Hood, Screen.
Complete, £410. 4-Seater, £430. Coupe, £450


Agents in Principal Cities.

BIo HELP THE by letting advertisers know that their advertusements MOVEMENT

YOU know what discomfort the bad roads involve to you personally, but you may not know how they damage your car and tyres, although it is obvious that they cannot be doing either car or tyres any good.

All the discomfort can be eliminated by fitting J-M's, for they make rough roads feel smooth. They save the car from premature disintegration, and the saving in tyres alone in the first year will more than cover the cost of the J-M's.

Write for booklet, and state make, year and horse-power of your car.
Streatham Engineering Co. Ld.
47, Streatham Hill, LONDON, S.W.2.
Telegrams-' Jayemshoka, London.'
Telephone-Streatham 2010, 2011.


[^2]

> HIS Standard of Comfort, Stability, Easy Control, Efficiency, Economy, and Ample Power.

Send your name and address for full particulars.
The Standard Motor Co., Ltd., Coventry.
London Showrooms - . . 49, Pall Mall, S.W.1.

## Owners' Opinions.

16/10/19.

"On the first thousand miles the car has used (including that used in house, etc.) 26 gallons of petrol, working out to an average of $38.5 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. This I think is excellent, especially as she is absolutely new.
E.S.

23/5/19.
"Here's the history of my 'Standard'-maybe I shall never find its equal-except perhaps in a younger brother. It was a 1914 model, with the real 'Standard' hit on the engine. Being so compact and easy to drive I used it for shopping, theatres, etc., to say nothing of thousands of miles on the open road. The petrol shortage came and the car had the inevitable rest.
My husband's business was in connection with airerait production, and he took the car for the business. Then, came the great test for the 9.5 car. Small parts, large parts, lathes, milling machines, etc., were carried for hundreds of miles, sometimes of a weight greater than the little car itself-bua it never failed. Of course, it was driven with care. For pleasure it was "comfy"-quite a lady',s car-and for business it was reliable to the extreme."
S.G.

17/4/17.
"I bought a car from you July 7th, 1913, and still believe I have one of the best small 'Standards' on the road. Have covered over 23,000 miles, and confess I would sooner liavé my preseht car than many other new cars. Can get over 50 miles out of it at any time. Fact!"
J.R.

28/1/19.
"I am pleased to inform you that I am again rumning my 9.51914 car, and after 30,000 miles it is going better than ever, and is one of the quickest cars in Leeds. I wouldn't change it for any light car on the market."
P.R.F.

3/12/18.
"It has been the most satisfactory car we have ever owned, and now, after having done at least 50,000 miles, the engine bearings are as sound as when she was first furned out, and also the rest of the transmission."
W.S.C.

24/6/17.
"I have driven the car for 17,000 miles, winter and summer, since August, 1914, and she has given me no trouble."
G.S.

23/1/18.
"I consider the little 'Standard' one of the best-designed and sweetest-rumning light cars I have yet had-and I have orned most of the leading makes."

G-E.B.

## Special Features



The dash has a tray for the nanay currying of gloves, maps, etc. Instruments, Spaedometer and $S$ witchboard, are fitted flush.


Note the method of packing away the patent side curtains (which open with the door) behind the back cushion.


Gcdbolis.

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Morganizing" back to health. Lt. Holyroyd, a well-known Midland motorist suffering from shell shock, is trying to regain his health by touring on a Morgan cyclecar.

## WHAT OLYMPIA WILL REVEAL.

## Will the Show Come Up to Expectations?-The Effect on British Industry Opinions of Well-known People.


#### Abstract

As the interest in Olympia is immense, we have asked several well-known people in the motoring world to give our readers their views as to what Olympia will reveal. We give extracts below from their replies, and it will be seen that the opinipns expressed differ considerably. When wellinformed people seem doubtful as to secrets that will shortly be "out," it is not surprising that the public at large have a very hazy idea on the same subject.


AFTER six years' interval it is only natural that the great body of motorists and all those who hope to become motorists in the future, anxiously await the opening day of the Show. Doubtless they are wondering if the light cars and cyclecars of 1920 will differ to a large extent from the older models.
Immense experience in motoring matters has been gained during the long and trying period of hostilities and many lessons will undoubtedly have been learned. In addition the aeroplane has advanced almost to a degree undreamed of and English engine manufacturers have produced some of the best examples of aeroplane motors extant. It is impossible
to imagine that this unique experience will be allowed to go to waste, but will be reflected in the design of engines as fitted to light cars and cyclecars, for in these máchines weight as in an aeroplane must be kept down to a minimum.
It must be remembered, however, that manufacturers have been working under very great difficulties during the reconstruction period. Lahour troubles have beset them almost ceaselessly, and even at the moment of writing a moulders' strike is still in progress. It is certain therefore that many interesting models will not make their appearance, and others will not be seen in the greatly modified forms in which they were intended to be displayed.

## WHAT OLYMPIA WILL REVEAL (contd.).

To help our readers in their conjecture as to what Olympia will reveal, we have asked some prominent people in the new motoring world to give their opinions of what will be seen at the Show, and also as to the future of the light car morement. The following are a few extracts from replies received:-


Major W. G. McMinnies, R.A:F., A.F.C., winner of the Cyclecar Grand Prix, 1913:-
"I imagine that we shall see very great improvements in the power weight ratio of light cars-I hope that we shall see much more attention paid to road stability and springing, so that it will be possible to drive a light car at $50 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. without feeling that one might be bumped off the road altogether. I hope to see more thought given to the driver, who has not much time for filling up grease cups, oil tanks, etc., and making numberless adjustments in inaccessible places. The point I look for is the turning out of a car complete as a carriage with such things as lamps, tyres, tool-boxes, etc., incorporated in the design. The ordinary car which at present one sees on the road always reminds me of the 'White Knight' in ' Alice in Wonderland,' or a gipsy van festooned with all kinds of articles stuck on the running board, back of the car and wings, etc--makers should turn out standard cars, spare wheels, tool-boxes, petrol cans, ett., concealed and incorporated in the design. I have great hope in the future of the cyclecar as apart from the light car, and if only some big manufacturer with a reputation for first-class workmanship were to take up one or two makes of oyclecars that I know at present are on the market and make them at motorcycle and sidecar prices, I am convinced that they would be successful."

## wethorminies



Sir W. Joynson-Hicks, Bart., M.P.,
Chairman of the A.A. and M.U.:-
"With regard to the future of the light car movement, I am convinced that these cars are only in their infancy and that before many years are over they will be almost as numerous as the bicycle was 10
years ago."


Mr. L. Mantell.
"It is difficult to form any very confident anticipation as to what the Show will bring forth in the way of innovations. If war experience in engine design is any criterion, one would expect to find aluminium pistons with floating gudgeon pins throughout, roller-bearing big-ends fairly general and overhead valves an absolute Shibboleth; while, on high-grade
productions, one might also expect to find aluminium cylinder blocks with steel liners and separate combustion heads of aluminium with cast-iron valve seatings, etc. Knowing well the conservative methods of our dear, old, sleepy country, however, all I really expect to find are details of improvement in accessibility, manufacturing convenience, and accessory fitments. The monobloc engine, with its cast-in pipework, will probably be in greater evidence, as will the unit system of combined engine and gearbox. Lighting and starting sets will doubtless be much more general, and I should imagine that, in their absence, methods of starting from the seat will be incorporated in many cases. Finally, as regards the probable effect of the Show on British trade. No doubt the potentialities are great, but as to our being able to take full advantage of them in these troublous times of labour disputes, that, in my opinion, is quite another matter. My sentiments can be summed up in a short remark-which I would like to have made-only, Mr. Asquith unfortunately made it first."
Smantel.


Lt.-Col. Chas. Jarrott, the well-known motoring celebrity.
'I think that few exhibits at the next Motor Show will show any material advance on what we have seen six years ago and during the war. The experience gained ir the manufacture of engines and other war requisites will not help the manufacturer very materially in the direction of producing a better light car than he was able to produce in pre-war days. For instance, those manufacturers engaged on the manufacture of aeroplane engines were concerned in superfinished goods, which were entirely uncommercial, and such finish could not be employed in the manufacture of a light car to be sold commercially in large numbers. I had an opportunity of seeing some of the later productions at the Junior Car Club's Efficieney Trial, and, with one or two exceptions, I considered that the cars of pre-war type more than held their own with the 1919 productions which were appearing then for the first time. I consider that there is a vast future for the light car, but I think it should lie in novelty of design and not in the direction of producing a big car in miniature, which appears to be the policy adopted by most of the light car makers. With regard to the importance of the forthcoming exhibition in respect of British trade, I must frankly admit I do not attach much importance to it. The exhibition which will, presumably, be held in 1920 will, I think, give evident signs of the fierce competition which will have to be met in this country in connectiou with the sale of cars, and I think by that time most of the British manufacturers will have realized their methods of manufacture and sale will have to be changed if they are successfully to meet their foreign competitors, but while there may be some very interesting and novel productions at the Exhibition of 1919, I do not think that the holding of the Exhibition or otherwise will make very much difference to business. For the next 12 months production will require more effort than the selling of cars."


WHAT OLYMPIA WILL REVEAL (contd.).


Dr. A. M. Low, the well-known scientist and inventor.
"Opinions are, as the Army instructions say of bombs, very dangerous things, and it is, I fear, only human to wrap them up like the forecasts in a certain almanac which make them ' Moore' than difficult to understand. What I expect to see at Olympia and what I shall see are, no doubt, very different. I am a ware that there have been a couple of wars or so, but design is not a question of time. Surely we can hope for a few carburetters that carburet, surely we can hope for easily-worked pumps and automatic inflators? If we see nothing else, I shall look hard for a car which does not stain if not perpetually and expensively washed, and I shall search for cars that do
not expose springs, shackles, and brakes to grit and mud. Expensive light cars should all start electrically, and cheap cars mechanically from the seat.
"Dynamos will, I hope, not be so often added as an afterthought, and one-man hoods will (let us be. lieve) open at once and still let passengers out easily. Surely one car at least will not have important greasers and universals that cannot be reached, and many others will not need lubrication every 250 miles? As regards actual chassis requirements, I should dearly like to see a quantity production chassis and body. I should expect to see a small sleeve valve engine for silence on a luxury miniature coupe, and truly multi-cylinder engines, both two and four stroke, for smoothness of torque. The cheap cyclecar has come to stay, and I shall long to see more than one which does not smell, knock, or require frequent tuning because it is air-cooled.,


## TWO SPECIAL NUMBERS OF THE "LIGHT CAR AND CYCLECAR."

THE next issue of The Light Car and Cyclecar will be the first special Show number and will be greatly enlarged. It will be published on Friday, November 7th, and will thus appear on the opening day of the Show. Besides numerous interesting features contained in this issue there will be a complete illustrated Buyers' Guide giving details of the light car" and cyclecar exhibits to be seen at Olympia. A number of pages will be devoted to accessories and equipment. This feature will also be well illustrated. and the subject dealt with in an attractive manner. Important advice will be given to the wouldbe purchaser so as to help him to choose his machine froin amongst the numerous exhibits. This will prove of great benefit to a number of people who visit

Olympia with the object of making their selection for next year's machine.
The second Show number will appear the following week and will contain a complete and fully illustrated report of the light car and cyclecar exhibits. In addition there will be a critical review of light car and cyclecar design and equipment from the pen of a well known authority.
The exhibits will also be dealt with from the ladies' point of view, and a special article dealing with electrical equipment will be published. In addition to these special articles, most of our usual features will appear. In order to ensure obtaining a copy of these numbers orders should be given well in advance to a newsagent.

## Average Prices of Second=hand Light Cars.

The figures given are merely the average for six weeks of the prices at which second-hand light cars and cyclecars are offered in our advertisement columns, and do not necessarily represent the actual value of the cars.


## Notes, News and Gossip of the New Motoring.

## A New Coinage.

According to the Manchester Dispatch, for driving a motorcar in a dangerous manner a defendant was fined $\frac{3}{4} 3$.

## Cheers in Court.

When a jury at Carnarvonshire Assizes brought in a verdict of "not guilty" in connection with the trial of a young chauffeur, the charge being one of panslaughter, the decision was greeted with cheers.

## Watching the Watches.

A motorist who was summoned at Harmondsworth for exceeding the speed limit complained that the three watches of the officers all read different times. Despite this, however, he was fined £1.

## More Benzole.

The Motor Legislation Committee is urging that amendments should be made to the Electricity Supply Bill now before Parliament, with the object of increasing the production of home motor spirit and other valuable by-products.

## Our Front Cover Picture.

Every Frenchman has a strong artistie temperament, with the result that when he decides to erect a statue, whether of a permanent or temporary nature, it is usually a thing of beauty. As a symbol of the triumph of the automobile during the great war the French erected the imposing temporary structure seen in our front oover picture this week. It was placed outside the Salon where the Motor Show was being held and was made of plaster. It takes the form of a whippet tank, surmounted by the headless figure of Victory. In the foreground is seen one of the latest models of the Majola light car.

## How a Fire Begins.

When a car catches fire it is not always due to the highly-inflammable liquid from which power is derived. The cause of a car fire which occurred at Longton, Staffordshire, was due, in the opinion of the owner of the car, to a lighted cigar or cigarette which had been thrown down, this setting fire to the carpet or rug.

## Where Caution <br> \section*{is Necessary.}

Motorists should remember that the first and second convictions do not always appear on a licence. A defendant in a recent case at Uxbridge stated that he had a clean record, but a sergeant of police who was present re minded him that he had been fined at Bow Street. The defendant admitted the conviction, but said that it was not on his licence.


The clean design of the Diable three-wheeler is very apparent from the above illustrations of the front and rear of the chassis.

## LIGHTING-UP TIMES

for Saturday, November 1, 1919.
London
5.3
5.0

Edinburgh ... 5.8
Newcastle ... 5.0 Liverpool ... 5.10
Birmingham 5.9
Bristol … 5.13
Dublin
... $\quad 5.53$
Lighting-up time in Ireland is one hour atter sunset and in Scotland half-an-hour after sunset. Lighting-up time in England and Wales is half-anhour after sunset.

MOON-First quarter on the 1st.

## A Heroic Action.

Although pinned under an overturned car, a chauffeur succeeded after considerable effort in reaching the switch and stopping the engine, thereby, probably, saving a fire.

## New Cars.

Will readers and advertisers in The Light Car and Cyclecar kindly note that in future advertisements of new light car's and cyclecars will appear under a separate heading in the pages of this journai?

## M.P.H. and £ s. d.

 For offences against motorcar acts in Surrey, principally for travelling at excessive speeds, motorists paid in fines during the past quarter $£ 2,9916 \mathrm{~s}$. 3d. Epsom contributed £661 2s. 1d., whilst the total for Kingston was $£ 628$ 7s. 3 d.
## Solving the Garage Problem.

The latest effort to solve the garage problem is in the form of a design by Mr. Eugene G. Higgins for a garage holding 700 cars. It is built in the form of a tower with spiral drive ways, and is specially suited to congested city areas. We think the oldfashioned garage. however, will die hard, even across the herring pond.

## A Heated Discussion.

During the hearing of a case wherein a motorist was summoned for driving without displaying a red rear light, a police constable stated that the lamp was "cold" when he examined it. This remark led to a "heated" discussion and the defendant was eventually fined 10 s . and costs.

## A Woman Chauffeur.

The War Office recently recorded a vote of thanks to the women motor drivers who have worked so hard during the war and who have now been disbanded. M a $n$ y hundreds of semiskilled women drivers are therefore "out of a job," and it seems more than probable that the near future will see the proper inauguration of the private lady chauffeur. She might not be able to do intricate repairs, but she has proved her worth as a driver over and over again.

## NOTES, NEWS AND GOSSIP (contd.).

## New Benzole Booklet.

A new booklet on benzole, written from the motorist's point of view by Capt. E. de Normanville, can be obtained on applying to the National Benzole Association, Horseferry Road, Westminster.

## R.A.C. Facilities at the Show

Members of the R.A.C. will be accorded special facilities in connection with the Olympia Show. The Princes Rooms will be available, as on previous occasions. On application to the Secretary, the Royal Automobile Club, Pall Mall, S.W.1, members may obtain a special ticket admitting them to Olympia on Thursday, November 13th (10s. day) at half-price.

## Doubtful Bargains.

"A bargain" in the shape of a magneto, carburetter, or other accessory offered by a comparative stranger who is not in the trade should be viewed with great suspicion and inquiries made before transacting any business. At Bristol police court recently an ex-soldier was brought up charged with dealing in war material, the proprietor of a motor company stating that the man came to him and offered to sell is magneto, which he eventually purchased for £10. The Clerk asked whether the witness saw a Government mark on the magneto. The witness said he did not trouble to look, adding that a mark of that description was of no significance, because so many - Government cars were being sold. After the Bench had sentenced the prisoner to two months hard labour, the garage proprietor made an application with regard to the magnetos, saying that he could not give them up without an appeal. The Chairman, however, pointed out that they had come to their deoision and advised the unfortunate dealer to consult his solicitor.


The Eric-Camptell light car starting off on an officially observed $\mathbf{2 5 , 0 0 0}$ miles trial. Miss Sprake is the driver.

The Truth.
One naturally expects truth from Truth, and British. manufacturers might make a mental note of the following paragraph culled from the pages of the famons journal which emanates from Bolt Court, E.C.:"There is, I am convinced, something, radically wrong with the mental make-upıof the British motorcar manufacturer," says the motoring expert on Truth, "who does not realize even now that one of the greatest industries in America has been built up on the cheap utility car."


## Téchnical Offences.

Many new motorists are not cognizant of the various rules and regulations which the owner of a motorcar has to follow. We hear of drivers regarding a polico constable with blank amazement when he asks to see their driver's licence or expressing astonishment when they are told that they ignored the warning of some pollice constable on point duty! Motorists also should remember that when a motorcar changes hands certain formalities have to be gone through, the most important of which is to notify the authorities of the change. "At Rugby Petty Sessions recently a motorist who was sumnoned for failing to give notice of change of ownership stated that the offence was committed entirely in ignorance, and was fined 10s. 6 d . As a rule technical offences are not met with very heavy fines, but before taking up motoring the tyro would do well to study the legal section of any motoring manual which will give all the information he requires.

## An Extensive Tour.

A wide-world tour on an Eric-Camplell Hight car started on October 27th from the London offices of the manufacturers. The driver of the car is a lady-Miss Kathleen Sprake-but she will be accompanied by a mechanic. The following programme is mapped out:-Two laps of England, London, Bristol, Glasgow, Edinburgh, London, one lap of France, two laps of England, one lap of Spain, two laps of Eng. land, one lap of Italy and two laps of England. Finally the car will explore Northern Africa and will finish up the 25,000 miles in England. This tour is bound to occupy some time, but should prove very useful to manufacturers.

## The Next Olympia Show.

The next show, after the motor exhibition, to be held at Olympir will be the International Aero Exhibition. This promises to be the largest and most comprehensire display of aircraft, aircraft engines and their components that has ever been seen. Motorists are always interested in aircraft, and so should note the date of this exhibition.

NOTES \& QUERIES (contd.).

# A Vacancy on "The Light Car and Cyclecar." 

There is a vacancy for a genHeman who, possessing the necessary qualifications, would be capable of representing this journal on the business side. This is an excellerit opportunity for one who has had the necessary experience, and who has knowledge of the light car trade.

Applications covering essential details such as age, previous experience, etc., should be addressed personally to Edmund Dangerfield, Esq., Managing Director, Temple

Press Lid., 7-15, Rosebery Avenue, F.C.1. These should be marked "Private and Confidential," and will be treated by him as such.

## Junior Car Club Arrangements for Olympia.

For the convenience of members of the Junior Car Club arrangements have been made for parting their machines in a cul de sac at the rear of Messrs. Wilkins Simpson's premises, 11, Hammersmith Road, London, W., which is just opposite the Addison Road entrance to Olympia. A commissionaire has been specially engaged to look after members' cars while they are in the Exhibition. He will wear an armlet displaying the Club badge. Members should also have their machines equipped with this badge so that the commissionaire will be able to single out members' cars.

## Meeting of the I.A.E.

The second meeting of the session of the Institution of Automobile Engineers will be held at the Royal Society of Arts, John Street, Adelphi, W.C. 2 , on November ath, at 8 p.m. A paper on "Valve Failures, and Valve Steels in Internal-combustion Engines" will be read by Dr. L. Aitchison.

## Carden Development.

We are informed that the entire manufacturing rights of the Carden monocar and two-seater have been acquired from Captain Carden by Mr. E. A. Tamplin, Kailway Garage, Staines. Mr. Tamplin, has always been an enthusiastic driver of this particular machine, and did exceedingly well in the recent Junior Car Club Efficiency Trial.

## Outside the Limit.

Details of the new 1990 Calcott have just been issued, but as the engine dimensions have been greatly increased, thus bringing the cubic capacity over the $1,500 \mathrm{c} . \mathrm{c}$. limit, the machine comes outside the scope of this journal. We would therefore refer our readers to the current issue of The Motor, in which a description of this machine appears.

## Where are the American Cars?

The threatened invasion of American motorcars has received a serious check in the shape of the shipping strike and other labour troubles which the United States is sulfering from at the present trime. A British agent who expected to receive delivery of 4,000 cars hy next January, in batches of 100 cars, has not yet received a single car via New York, although some 2,000 cars should have been delivered already by this route.
B22


A side view of the 1920 Singer. Note the new design of windscreen.


LANDMARKS OF INTEREST TO LIGHT CAR GWNERS.
Top, left : Quaintly placed beside a pond is one of the oldest rustic lock-ups in England at Lingfield. Top, right : Ypres Tower, Rye, Sussex, which was erected as a watch tower in the twelfth century. Bottom, left: Land Gate, Rye, built when the walls were constructed by Edward III. Bottom, right : West Gate, Canterbury.

# THE COVENTRY-PREMIER THREE - WHEELER. 

Further Particulars of This Interesting Machine.

IN our issue of October 25 th we were able to give a more or less brief description of the new Coven-try-Premier three-wheeled cyclecar. We are now able to supplement the above with a more detailed description, together with some interesting illustrations. In constructing this machine, it has been the designer's object to produce a vehicle which shall be within reach of the motorist of moderate means, but which shall at the same time possess those refinements more usually confined to the higher priced fourwheeler. That this object has been attained is apparent from its construction.
The power unit comprises a 50 -degrees twin, having a bore and stroke of 80 mm . by 105 mm . respectively, giving a cubic capacity of $1,055.5$ c.c. and a R.A.C. ratifg of 7.9 h.p. Cooling is by water on the thermosyphon principle through a radiator of very pleasing appearance situated in the orthodox position at the front of the car. The construction of the engine follows standard practice in the main so far as the chief components are concerned. The connecting rods function on a common crankpin, one rod having a forked big-end whilst the other works within the fork. Roller bearings are employed at the big-ends, whilst the main shaft revolves in plain bearings. The gudgeon pins are of the floating type and carry flat-topped aluminium pistons, each of which is fitted with three top rings ; the aluminium used is to aero engine specification; in fact, this care in the choice of the best materials is displayed throughout the construction of the whole machine.
The valves are situated side by side, and the ex-


The rear wheel assembly.
haust valves are provided with lifting mechanism to facilitate starting. The control for this exhaust valve lifter is taken by means of a cable to the front of the car and is conveniently placed so as to be operated by the left hand, while the right grips the starting handle. Lubrication is ensured by use of a mechanical pump of the simple plunger type, fitted with a non-return ball valve and actuated by a cam, or, strictly speaking, an eccentric on the starting reduction shaft. This plunger pump is entirely submerged in an oil sump of ample capacity. Oii is forced through an oil-way drilled up one side of the crankB24

## COVENTRE-PREMIER (contd.).

a high factor of safety. Journal ball bearings constitute the hub mountings. A point which will undoubtedly appeal to every user of three-wheelers is the extreme simplicity and rapidity of removal of the back wheel for tyre repairs. We were afforded a practical demonstration and can affirm that nothing could be more simple. One nut, one split washer, and the spindle are the only parts which need disturbing, when the wheel may be slipped out, leaving the transmission and brakes in situ. The drive at the wheel is taken by plain dogs. Two independent interual expanding brakes, Ferodo lined, are situated side by side on the transmission side of the rear wheel, and are actuated by a pedal and lever respectively.
Wire wheels are standard, shod with 700 mm . by 80 mm . tyres all round. A spare wheel is carried, which is interchangeable with the rear wheel only. The standard body fitted is of very pleasing design, and follows an easy sweep from the radiator right to the rearmost point, at the same time enabling two people to occupy the seats in comfort. The spare wheel is mounted on the top of the tail end, and a toolbox is provided. A petrol tank, with a capacity of five gallons, is built in the dash, and the consumption is stated to approximate $50 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. Standard equipment comprises hood, screen, lamps, horn, spare back wheel and tyre, jack, tool-kit, number-plates,
etc. The lamps provided as standard are acetylene, but electric lighting can be readily fitted at an extra cost, and in order that this extra cost may be as low as possible, prorision is made on every standard car for fixing the dynamo and for the drive from a pulley machined on the front of the flywheel. Independent hand and foot control are provided for the throttle,

*
The twin
chain drive is completely enclosed in a case that is easily detached.
*
as well as variable ignition control. Finished in elephant grey with black wings and brass fittings, this car presents a very taking appearance.

Equipped as above and ready for the road, the provisional price is £210.

## A NEW CYCLECAR WITH A THREE-SPEED GEARBOX. A Coventry,Victor Engine-Design Incorporates Aeroplane Practice.

AFOUR-WHEELED cyclecar which is at present going through road tests in the Midlands embodies many novel features in its construction, The power unit is an $8 \mathrm{~h} . \mathrm{p}$. air-cooled 80 mm . by 80 mm . Coventry-Victor engine fitted with a ThomsonBennett magneto and R.T.C. three-jet variable choke carburetter. The drive from the engine is by shaft and bevel to a countershaft mounted on ball bear-


> The tubular front axle is strengthened in an original manner.

ings. From this countershaft the drive is by a chain to a three-speed Sturmey-Archer gearbox, the drive being then taken forward by a chain to another countershaft, on each end of which are mounted belt pulleys, the final drive being by two Whittle belts. The Sankey wheels, shod with 650 mm . by 65 mm . Dunlop tyres, are mounted on tubular axles, suspension being carried out by full elliptics both front and rear. A
point of interest in respect to the axles is the employment of wooden stays bound beneath each for the purpose of relieving them of strain. An ash frame is employed, suitably strengthened where necessary. One brake operated by a pedal bears upon a drum on the countershaft, whilst two ordinary shoe brakes operated by a lever bear upon the belt pulleys. Specially interesting is the bodv, which has been designed by Mr. Budge, of the Standard Co. The object of the designer has been to produce a body combining exceptional strength with lightness and smart appearance. It is constructed of ash battens covered with canvas, the latter being doped, painted and varnished, the result being very pleasing. Some of the general dimensions of the cyclecar are: Wheelbase, 7 ft .6 ins. ; overall length, 10 ft .6 ins. ; track, 4 ft .; whilst the total weight is about $5 \frac{1}{2} \mathrm{cwt}$. On the present carburetter setting, which is experimental, $60 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. is claimed. At $40 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. the little car is said to hold the road remarkably well which can be attributed to the even weight distiabucton and the springing. It is intended to supply the machine complete with three electric lamps and a large capacity accumulator, hood, screen, tools, etc., for £150. Mr. Weaver, of the Coventry Victor Motor Co., who is the designer, is forming a syndicate to produce his cyclecar, the works being now in the course of erection.

## TWO SHOWS FOR 1920.

WE understand that que question of the Olympia Show for 1920 is being considered by the Society of Motor Manufacturers and Traders, Ltd. It will be remembered that we previously announced that the intention was to hold a series of Shows so as to allow the ever increasing number of motor manufacturers to have ample space for their exhabits at Olympia.

It would appear that the Society have practically decided to hold two Motor Shows next year, but they
do not look with favour on the idea of balloting amongst the members as to which Show they should be allotted. The proposal at present in favour is to making a dividing line so that all cars in one Show will have engines under $15.9 \mathrm{R} . \mathrm{A} . \mathrm{C}$. rating. Those above that limit will appear in the second Show. The plan to be drawn up will also allow larger space to be allotited for the older exhibitors whilst providing a space for every member elected prior to the date of the 1919 ballot.


DETAILS OF A NEW CYCLECAR WITH A COVENTRY-VICTOR ENGINE.
(1) Three-quarter front view of the machine. (2) Under the bonnet showing the horizontally-opposed twin cylinder water-cooled engine. (3) Front view showing the cylinders protruding on each side of the radiator. (4) The neat tool locker at the back of the seat. (5) A rear view of the machine showing the belt drive.

# CALTHORPE IMPROVEMENTS FOR 1920. 

Open Cardan Shaft--Oil Dipper-New Disc Wheels.


A near view of the new Sankey defachable disc wheel, ${ }^{\text {s }}$ and a two-seater Sports Calthorpe fitted with them.

T1 HE 1920 model Calthorpe light car will not differ materially from this year's machine. Although we do not wish to see stagnation in design, we are pleased to note that the Calthorpe Motor Co. (1912), Ltd., like the majority of well-known light car manufacturers, do not intend to make wholesale alterations to their well-tried chassis simply for the sake of having a change.


A universal joint is now fitted on the cardan shaft close up to the axle casing.

The chief innovation is the adoption of an open cardan shaft provided with a leather ring type of universal joint at each end. This construction minimizes the chance of undue noise in the transmission. With the long shaft, on which is mounted at one extremity a small driving bevel, there is bound to be a certain amount of whip which will throw the bevels slightly out of alignment, thereby producing a noise which is difficult to silence. By placing the universal joint close up to the back axle casing, the shaft on which the driving herel is mounted can be made
short, but of sturdy dimensions, which ensures the pinions being correctly in mesh.
A dipper rod is now fitted in the crankcase, so that the driver miay ascertain the level of the oil in the sump. The oil pump itself has been slightly modified, but still operates on the same principle. The sporting models will be fitted with the new Sankey steel disc wheel, which obviates any necessity for removing the diso when pumping up the tyre or changing the wheel itself. This wheel is built up of two thin metal discs welded together, which dish out near the centre with distance pieces inserted to keep them at the correct distance apart. Fitting these wheels on this machine gives the latter a particularly smart appearance, and, as the discs do not protrude beyond the rim itself, the chances of them being scratched or becoming unduly dirty are considerably lessened.

## Body Modifications.

Since the first few 1919 models were turned out, some slight modifications in the bodywork have been effected? The front seat of the "Sporting Four" has been set back slightly and the back support placed at a more pronounced slope. This considerably increases the comfort of the driver and front passenger without in any way encroaching on the rear passenger's space. A particularly fins specimen of Mulliner's, Ltd., workmanship will be seen on the Calthorpe Stand at Olympia, one of the four-seater models being fitted with a cruiser-type body. A particularly smart coupe will also be exhibited. The standard colour adopted for all models is an neutral tint of grey that imparts to the machine a smart and ciean appearance. The manufacturers are the Calthorpe Motor Co. (1912), Ltd., Birmingham.


The oil dipper rod now fitted.

# THE 1920 DAY-LEEDS. <br> Four-cylinder Engine-Semi-elliptic Springs-Comfortable Bodywork. 

II would appear from the general design and the well-finished bodywork of the new Day-Leeds $10 \mathrm{~h} . \mathrm{p}$. light car that the manufacturers have gone out to provide a car giving the maximum amount of comfort combined with their usual general soundness of construction.
The 10 h .p. Day-Leeds engine has a bore and stroke


The $\mathrm{D}_{\mathrm{t}} \mathrm{y}$-Leeds $10 \mathrm{~h} . \mathrm{p}$. engine.
of 64 mm . by 100 mm . giving a capacity of 1,266 c.c. Automatic lubrication is provided by a pump driven off the camshaft. The radiator employed in the cooling system is set slightly higher than on previous models, and so a greater coolng surface is provided. The position of the M.L. magneto on the near side of the engine makes it very accessible. A departure from pre-war practice is the position occupied by the petrol tank. This is now secured between the rear dumb-irons, the S.U. carburetter being supplied on the Autovac system. The universal joint behind the gearbox is now enclosed and is supplied with lubricant from the gearbox. Three speeds forward and a leverse are provided by the latter, the gears ranging roughly from 12 to 1 on low to 4 to 1 on top; thus a useful range is provided. From the gearbox to the back axle the drive is by an enclosed propeller shaft, the final drive being by bevel. Both sets of brakes operate on the rear wheels.

As in previous Day-Leeds machines the suspension is carried out by semi-elliptic springs both front and rear. On the new model these have been considerably lengthened and have less camber, being almost flat when loaded. On a short road test we found the
suspension very efficient over some very bad stretches of road in the Leeds district. Another minor improvement is fuund in the steering arm, which now fits right -up to the frout wheel, thus permitting of less play and giving greater and easier control. The stub axles are also loigger and the wheels are on rotier bearings.
The drive for the Rotax lighting dynamo is taken from a pulley fixed immediately in front of the gearbox, a neat adjustment for the driving belt being provided in the casting which holds the dymamo. A self-starter is not fitted, although provision has been made for one, it being possible to install one quite readily if required.
The Blackburn Aeroplane Co. have been responsihle for the bodyworl, specially seasoned timber being employed throughout. To provide plenty of room without the body appearing bulky is not always easy of accomplishment, but this has been attained on the Day-Leeds, and an exceptionally long-legged person will be able to accommodate himself comfortably. Other points which have received every consideration are the tilt of the seats, the steering rake and the position of the controi pedals, all with a view to providing the maximum amount of comfort to the driver and passenger. The dickey seat, too, is designed on


Even in the dickey seat more than ordinary comfort is provided.
comfortable lines, besides which the occupant of the seat will share the full benefits of the windscreen.
The machine is equipped with five detachable Sankey wheels and tyres, five electric lamps, horn, hood with cover, side curtains, screen, tool kit, etc., and the price is $£ 400$.

## Enforcing the Lightiny Order.

We believe that ignorance is responsible in a great many cases for non-compliance with the Lighting Order, which demands that, in addition to a front lamp or lamps, vehicles, such as bicycles, must carrya red rear lamp; and the warning issued by the Commissioner of Police that the Order in its present form is to be rigidly enforced, in the interests of the general public, should be made known to every road user.

## The Duke Paid.

When the Duke of Toledo left the Hotel Maurice, Paris, he called out to the chauffeur in boulevard French, "Faster! Bother the policemen!" Later on the number of the duke's car was duly recorded for having exceeded the speed limit and a nomiral fine imposed. The authorities refused to cancel the fine-even when they discovered that the Duke of Toledo was no less a person than the King of Spain travelling incognito!


A side view of the machine.

## THE NEW CHARRON-LAYCOCK LIGHT CAR.

A Franco-British Production-Orthodox Design-Four-Cylinder Engine.

THE new Charron-Laycock $10 \mathrm{~h} . \mathrm{p}$. light car is a notable addition to the light car ranks. It is constructed throughout in a large works at Sheffield, and an inspection of the chassis shows that the best features of French and English designs-hare been incorporated, with the addition of well-tried novelties which do not find a place in any other chassis.

The aim of the manufacturers has been to produce a light car suitable in every way for the owner-driver. While every endeayour bas been made to secure the maximum of reliability, economy and facile operation, considerable pains have been taken to secure that the mpkeep of the car may be carried out as simply and with as little trouble as possible.

The specification briefly is as follows:-The fourcylinder monobloc engine, 63 mm . by 110 mm ., transmits power through a reversed cone clutch to a gearbox, providing three speeds and a reverse. The next step in the drice consists of an open propeller shaft with two universal joints, while the final step in the transmission is by a spiral hevel gear in the rear axle. Springing is by half-elliptics both at the front and rear, while both brakes operate on the rear wheels. Cooling is on the thermo-syphon system, while lubrication is forced throughout. The chassis weight is given as 10 cwt ., and with a running load of 21 cwt., it is stated that Fitzjohn's Avenue, London, N.W., was easily climbed on top speed, thus indicating the power developed by the engine.

## The Engine.

The engine is sturdily constructed-the cylinders being cast in one block, with detachable heads held by a number of bolts. The whole of the combustion chamber is machined in order to minimize so far as possible the formation of carbon deposit and to prevent any possibility of pre-ignition. All the valves are situated on the nearside, covered by two quicklydetachable plates. The point of interest, is that the exhaust collector is a separate casting, and thus there is no chance for the cylinders to distort when heated up. The engine has a capacity of 1.371 .5 c.c. and is rated at $9.9 \mathrm{~h} . \mathrm{p}$. Treasury rating. The pistons are light castings carrying two rings above the gudgeon pin. The crankshaft is a massive steel forging, car-
ried on three die-cast bearings, a notable example of detail attention being the provision of a ball thrust between No. 1 throw and the front crankshaft bearing, this ball race being provided to take the thrust on the crankshaft for the short time the clutch is disengaged. The camshaft, which operates all the valves, is driven by* compressed paper helical gears which are lubricated under pressure from the main lubrication supply.

## Forced Feed.

Lubrication is carried out in a praiseworthy thorough manner. A screw-driven gearwheel pump at the bottom of the sump forces oil under pressure to the main crankshaft bearings," whence the oil passes, still under pressure, through the drilled crankshaft to the big-end. The surpius oil is forced up tubes clipped to the connecting rods, and is then distributed through the gudgeon pins to the cylinder walls. It will thus be seen that every moving part of the engine is positively lubricated, and thus the owner's mind is relieved of much worry when he realizes that the powerful pump is iforcing oil to every necessary part.

Cooling is on the thermosyphon principle through pipes of generous diameter, a distinctive pattern radiator being employed. The mixture is drawn from a horizontal, Zenith carburetter, the induction pipe being cast in the cyiinder block thus securing adequate heating of the mixture. The ignition is by a Watford magneto with fixed firing point, the magneto leads being coloured differently to avoid any confusion in their replacement. Carried in line with the magneto, on the nearside, is the C.A.V. starter, which engages positively with a toothed ring on the flywheel. The magneto, starter and wiring are to be enclosed under a neat aluminium acover. On the offside of the engine is situated the 'C.A.V. dynnmo, driven by belt from the crankshaft, the fan at the rear of the radiator being similarly driven with a spring adjustment.

The petrol is drawn from a seven-gallon tank at the rear of the chassis on, the Autovac principle, twin nipes being employed for the following reason: When the petrol tap is in the main running position five gallons only can lse withdrawn from the rear tank, and so soon as the engine fails from shortage of fuel, the driver knows that he has two gallons to spare in the

## THE CHARRON-LAYC'OCK CAR (contd.)

tank, which can be put into service by the mere turning of a tap within easy reach of the driver.

The large external flywheel carries a reversed cone clutch made of spring steel, and faced with Ferodo,

(1) The housing over the flywheel enclosing the gearing of the starting device will be noted. The wiring and dashboard are of a temporary nature.
(2) The substantial construction of the back axle of the Charron-Laycock.
(3) A near-side view of the engine showing the steering column quadrant secured to the crankcase.
smooth initial engagement being secured by the tongued edges of the internal portion of the cone clutch, while the Ferodo-faced clutch withdrawal ring B30
also acts as a clutch stop. A large leather universal joint between the flywheel and the gearbox allows for any temporary lack of alignment between engine and gears. The gearbox itself is very compact, providing three speeds and a reverse. The rear shafts is situated below the main shaft with a ball thrust bearing at its front, end to obviate any power loss, due to end thrust. The constant mesh gears are helically cut.in order to secure silence. The gearbox is ${ }^{7}$ remarkable for the number of ball bearings employed, even the spigot running in a ball bearing within one: of the constant mesh wheels, any thrust being neutralized loy a large steel ball between the clutch shaft and the tailshaft. The selector gear is carried in the gearbox lid, the gear lever being carried to the right of the driver by an arm integral with the gearbox Jid, thus flexion of the frame can have no ill-effect on the gear change. The speedometer is driven off the front of the gearbox.

## The Bevels.

The propeller shaft is open, and has a large leather universal joint at each end. The rear axle -is driven by alleason spiral bevel, and in the slater models of the axle the small, pinion gear will be carried on a separate plate, so that it will be a simple matter to adjust the mesh of the bevels to secure maximum silence.

All weight is carried on the axle tubes, the live shaft only transmitting the drive. They can be detached on removing the hub caps, leaving the car still supported on the:wheels. An accessible oil filler is placed to the front of the axle.
The frame is of "pressed steel inswept at the front to allow of a larger steering lock. Steering is on the worm and sector system, the steering box being carried on the crank chamber, "and stayed to the aluminium dashboard. "By loosening the two caps on the crank chamber, and one bolt on the dashboard, the steering wheel can be adjusted upwards or downwards through a range of 9 ins.
The front axle is, a forging of I section, the weight of the car being carried on ball thrust bearings in the steering heads. The latter are inclined so that the axis of the pivot meets the road at the same point as the tyre, which tends towards easy steering. All steering connections are straight, and, therefore, as strong as possible.

## Superfine Finish.

Aluminium enters very largely into the construction of the Charron-Laycock. The dashboard, bonnet, bonnet silis and instrument board are all of aluminium. This provides a superfine finish, which at present is a mixed blessing, as the moulders' strike has, of course, held up recent deliveries of these important parts.
The Charron-Laycock can be obtained with'three types of body fitted, the two-seater (with diokey seat), the clover leaf (three-seater), and a coupe with dickey seat, the prices being respectively 460,490 and 540 guineas. With a wheelbase of' 8 ft .2 ins. and, a track of 3 ft . $9 \frac{1}{2} \mathrm{ins}$,, a very well balanced appearance is obtained. The bodies are constructed throughout by the world-famous firm of Van den Plas.
Five detachable Sankey pressed steel wheels, 710 mur. by 90 mm ., are provided, fitted with five Dunlop tyres, two non-skid and three with plain tread. Each complete car is delivered ready for the road with the exception of registration, the equipment even including four gallons of petrol in the tank!
The ${ }^{*}$ Charron-Laycock is manufactured throughout by W. S. Laycock, Ltd., Victoria Works, Millhouses, Sheffield, under the controlling interest of Charron, Ltd., and the sole concessionnaires are the London Motor Garage Co., Ltd., 65, Piccadilly, London, W.1. An output of 100 to 120 complete cars per month is aimed at.

# THE GRAHAME-WHITE LIGHT CAR. 

A Striking Form of Change Speed.

IThas been the aim of many inventors to produce a friction gear which will provide a direct drive on top speed, the gear which is used on light cars for 75 per cent. of the normal running. The latest attempt, which appears to be eminently satisfactory in practice, is that fitted to the Grahame-White light car.
The Grahame-White light car is constructed at the vast works of the Grahame-White Co., Ltd., Hendon, N.W., which until recently were engaged on aircraft production. Thus, from a merely manufacturing point of view, the Grahame-White light car should have almost unequalled opportunities for success.
The general lay-out of the Grahame-White friction gear will be seen from the illustrations. The flywheel is a specially-shaped casting, which forms the first step in the friction drive. Bearing against the outer rim of the flywheel is a friction wheel parallel with the frame and carried on a special movable bracket, the dise running on ball bearings. The flywheel also carries the outer portion of the cone clutch.

## Friction Drive.

At right angles to the friction wheel is another friction wheel which can be slid along a continuation of the propeller shaft, which occupies the normal position in the chassis. The movement of the second disc allows of lower speeds being engaged.
The operation of this gear while actually simple, is difficult to describe. We will imagine that the gears are in neutral, and that the engine is running. The flywheel in its rotation is driving the dise at the side of the chassis, while the second dise on the propeller shaft is in a recess at the centre of the first dise, and is not driven in any way. If the gear lever is now moved into the first speed notch, the second dise is pushed forward along the shaft, and the drive then passes from the flywheel to the disc at the chassis side and back to the disc on the propeller shaft, the discs being held in engagement by a stout compound spring. Second and third speeds are obtained in exactly the same way, the driven diso keing moved further from the centre of the intermediary driving disc.

When top gear is required, the special features of this friction gear are brought to light. The final friction disc carries integral therewith the inner member: of the cone clutch, and for top gear this is forced into engagement with the outer cone carried on the engine flywheel. At the same time, the intermediary disc is moved out of engagement with the flywheel and comes to rest.
In its other features, the G.-W. light car is constructed on standard lines. A four-cylinder Dorman engine, 64 mm . by 85 mm ., is fitted, cooled on the thermo-syphon system through a radiator of distinctive shape. A sturdily-constructed rear axle encloses a bevel gear, the propeller shaft being totally enclosed and being provided with only one universal joint at its forward extremity. The frame is of pressed steel, supported on the front axle by a long inverted, transverse, half-elliptic, laminated spring, the axle being located by two radius rods, adjustable for length, and provided with ball joints. Rack and pinion steering is fitted. At the rear the springing is by quarter-elliptics.


Three illustrations showing the friction discs of the G.W. light car in different positions.

Examples of the G.-W light car will be exhibited on Stand 108 at Olympia, priced at 395 guineas, with two-seater" body and lighting set.

## The G.W. Buckboard.

A cyclecar to be successful should be constructed as simply as possible, weight being saved: wherever feasible. The cyclecar in its very simplest form is epitomized in the new G.W. Buckboard, where weight is saved to a remarkable extent and simplicity is secured in the most striking way. The Buckboard is a four-wheeler, the frame being censtructed of springy ash, bolted direct to the axles. Mounted at the rear is a 3 h.p. single-cylinder two-stroke air-cooled engine, which drives a two-speed gearbox by chain. The final drive from the gearbox is to, a special shock absorber on the rear axle. A plate clutch is provided and the gearbox has a kick-starter. Steering is direct, and two brakes are provided on the rear wheels. The Buckboard will be sold for approximately 95 guineas complete, carrying a two-seated body of simple design, which is specially sprung on the chassis.
It is difficult to iniagine a simpler form of construction than that adopted or a more enterprising method of securing motoring for two at the lowest possible cost.

## Topries of the © 0 y

The 1,500 c.c. Limit.

A
I the present time, when the demand for metor vehicles of all descriptions is almost insatiable, there is a tendency for light car manufacturews to lose sight altogether of the ideal which they set out to attain at the beginning. It is quite understandable, as the only thing that matters now to the manufacturer is output. It is not therefore at the moment important to him whether his machine is economical to run or not, as the prospective owner has not timo to worry about what is going to happen after he obtains delivery, his whole anxiety being to gain possession at the soonest possible moment of anything that will carry him about from place to place. The time will come, however, perhaps sooner than is expected, when the would-be purchaser will be more difficult to find and will have a much more discriminating nature. Manufacturers who may be tempted to go outside the engine limit laid down for light cars may do so now with a light heart, but as we have already stated, the public in the near future will fight shy of their large engines which simply consume excessive quantities of fuel without giving in return any easily-determined advantage. It is not difficult to design or manufacture an engine of large dimensions which will give out the same power as can be derived from a smaller one of 1,500 c.c. that is cleverly designed and of high-class workmanship. We hare proved over and over again that the 1,500 c.c. engine gives more than ample power for a two or four-seater light car, and most of the wellknown light car manufacturers are of the same opinion. Of course, if workmanship deteriorates, or if design is proved poor, the fower falls off, and the cheapest way for the maker to increase his horse-power is to increase either the bore or stroke of his engine. Unfortunately, however, although it is cheap for the manufacturer, this policy usually proves expensive for the owner. We are convinced therefore that the adoption of an over-size engine is quite contrary to the whole idea of economical motoring and is uncalled for, and we shall therefore continue to refrain from dealing in this journal with machines the engine size of which is over the 1,500 c.c. limit. We inaugurated the economical motoring movement, and shall continue to foster it to the best of our abilities. Our readers may therefore rest assured that machines which we consider should not really be included in the new motoring movement will still be rigidly excluded from both our editorial and advertisement pages.

## Rear Lamps Must Be Permanent.

T
HE agitation by cycling bodies for the abolition of the rear lamp continues unabated, but, judging by the arguments which have been put forward, we think it is very doubtful whether the authorities will be convinced. A point which is made a good deal of is that by forcing cyclists to carry a rear lamp, the onus is placed upon them should an accident occur; but cyclists do not seem to realize that this argument also holds good from the point of view of the motorists or other road user, who, should he run down a cyclist having no rear lamp, is at once assumed to be entirely in the wrong. The only common sense view of the situation is that every vehicle using the highway should have a rear light. To argue that pedestrians, being entitled to use the road, should also be forced to carry rear lamps is infantile in the extreme, and reveals the wildness of an agitation which is being carried on from the solitary point of view of the cyclist, who seems to have no idea at all of what constrtutes the proper safeguarding of our highways against possible accidents. Many cyclists, who do not carry rear lamps at present, have lulled themselves into a false sense of security by imagining that should they be summoned they have only to plead that they thought the re-introduction of the rear lamp was for the duration of the strike. The warning issued by the authorities comes none too soon.

B32


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## LIGHT CAR \& CYCLECAR

was founded in 1912 to cater for the needs of users and potential purchasers of various new types of cyclecars and light cars, and it has consistently encouraged the development of this new motoring movement for more than six years.

The journal is published every Friday, dated Saturday. Should there be difficulty in obtaining its regular supply, the reader is advised to place a definite order either with a newsagent or direct with the publishers, as it is impossible to cater for "chance" sales.

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One of the outstanding features of the engine is its neatness of design.

ANEW light car engine of more than passing interest is being produced by the Aster Engineering Co. (1913), Ltd., of Wembley, Middlesex. It has four cylinders, 65 mm . bore by 100 mm . stroke, giving a cubic capacity of 1,327 c.c.
The cylinders are cast monobloc, the casting being integral with the crankcase. A novel feature is that the crankcase is not divided horizontally along the centre line of the crankshaft, but is fitted with a removable sump. The big-ends dip into troughs which are cast integral with this sump, whilst an oil filter is also situated in an enclosed rectangular passage, into which the oil pump protrudes. Provision is made for remioving the filter by taking off a small cover plate. The circulation of the lubricating oil is effected through the medium of a plunger pump, the delivery stroke being due to the influence of a cam. The return or suction stroke being effected through the medium of a helical spring, any excessive oil returns to the sump.

## Drilled Crankshaft.

The crankshaft itself is drilled, so that the oil which is fed to the big-end bearings also feeds the main bearing. The crankshaft is machined from a steel stamping, a self-contained supporting spindle and handle being fitted in the front cover. Should it be desired to remove the crankshaft at any time, this can be done very easily by taking off the circular plate on the back of the crankcase, i.e., the plate which carries the rear main bearing. Both camshaft and magneto are driven by means of silent chain, the magneto being mounted on a pivoted bed, so arranged that it can be swivelled about the supporting point to take up the chain slackness.
Turning to the valve-operating mechanism, we come to one of the most interesting points in the design, for the valves, etc., are fitted in a detachable head, which, when removed, brings with it the greater part of the valve mechanism. The valves are operated by means of rocker arms, which, in turn, are actuated by push rods. A refinement in regard to the rocker arms is the simple type of ball bearing which is introduced in order to reduce the wear and simplify lubrication. Another excellent point is the fact that the crankcase release discharges into this cylinder head, thereby effectively lubricating all the working parts.
The engine is cooled by means of thermo-syphon circulation, whilst both inlet and outlet water connec-
tions can be arranged at either the front or the rear of the engine. The magneto is either an M.L. or Watford, to the special mounting of which reference has already been made. The leads from the mag. neto to the sparking plugs are housed in a neat carrier attached to the side of the cylinder. The carbu-retter-a Zenith-is fitted direct to the inlet port, and a governor is fitted, if desired.

## Accessibility of Design.

Accessibility is a marked feature of the design of this engine, and, apart from the ease with which the overhead mechanism can be examined, it is worthy of note that the whole of the camshaft oil pump drive

A view of the carburetter side show-

and the working of the push rods for the valves, where they come into contact with the cams, can be inspected readily $J$ removing the small door fitted on the side of the crankcase.

Instead of the usual supporting arms for the complete unit, a longitudinal flange is provided at each end by ribs of ample proportion. By referring to the illustrations of the Aster engine it will be noted that practically every working part of any consequence is totally enclosed, thus under working conditions it should be exceptionally clean, whilst at the same time being economical so far as the lubrication is concerned, as oil would not be wasted by, being thrown out of the engine. Overhead valves undoubtedly will command a great deal of attention very soon owing to aeroplane experience during the war, and the Aster overhead valve mechanism has been designed and arranged in an exceedingly neat and compact manner. Further, the efficient lubrication by means of the crankcase release and the additional refinement of ball bearings in the rocker arms go far towards eliminating not only the wear but also the rattle from this part of the mechanism. This engine will be shown on Stand 257 at the Olympia Exhibition.

## AN IMPROVED TYPE ZENITH CARBURETTER.

THE Motor Show held recently at the Paris Salon produced many interesting accessories, among which was the new type Zenith carburetter. This model differs in many features from other type Zeniths, as will be seen by reference to the illustrations. Instead of the usual flange fixing, the nut method is employed. The petrol enters from the top


Diagrammatic view of the improved Zenith carburetter. The simplicity of the float chamber will be noted.
of the float chamber, the usual type petrol pipe union being employed. Before entering the float chamber the petrol passes through a filter, the latter being iminediately detachabie by removing one nut. From the float chamber the petrol passes along a channel which commenicates with the slow-running, main and compensating jets. With a slight throttle opening suction is created on the slow-running jet, the petrol exit and the air port being-proportioned to give a
suitable mixture for starting and slow running. As the throttle valve is gradually opened the suction on the slow-running jet is increased until a position is reached where depression is created on the main and compensating jets. These are placed one inside the other. As in previous Zenith practice, the principle of jet action in which the main and compensating jets belance one another according to the speed of the engine is employed. The main air intake surrounds each chamber and consists of a number of slots which can be varied in size in proportion to the amount of air required. This instrument is made in bronze, nickel-plated, which effectively protects it under varying weather conditions. The new Zenith carburetter can be taken to pieces when necessary with the minimum amount of trouble; the main and compensating jets are removed from below the in-

strument, the slow running jet being fixed in such a manner as to be removed after the locking screw which holds it in position has been slacked off. This carburetter can be obtained either as a vertical or horizontal type.

## A NEW HEADLIGHT.

ANEW headlight which is being manufactured and handled by Norman Johnson and Co., Ltd., Hop Poles" Engineering Works, Baker 'Street, Enfield, possesses several good features. In the first

place it is airtight, enabling a polished aluminium reflector to be used without any fear of this becoming dulled. The front fits over a machined sleeve and is secured by means of a bayonet catch, the reflector B34
being designed so that a concentrated beam with a very small angle of deflection is obtained in conjunction with a fish-tail beam for illuminating the side of the road. The bulb can be focussed by means of an arrangement at the back of the lamp, and the whole is fitted with single or double brackets, to fit either side brackets or U forks. The price is 355 s. per pair, and a tail lamp of the same pattern is made.

## Focussing Headlights.

The only way in which to get the best results out of lamps is to take the car on to some dark country lane at night, preferably to the end of a straight stretch of road, and to focus one lamp at a time. This can easily be done by taking out the bulb of one lamp, while the other one is being adjusted. All modern lamps are fitted with adjustments which allow the buib to be slid backwards and forwards in relation to the reflector. It is difficult to eliminate all glare and dazzle from lamps, but if the rightr hand lamp is set to throw the longer beam and the left-hand lamp to give more side illumination, it is less unpleasant for pedestrians and other motorists who may be approaching.

The Outstanding Features of the Light Cars and Cyclecars that will be Exhibited--Stand Numbers of the Various Manufacturers.

THE great Olympia Sbow opers on Friday next, and the eyes of the whole motoring world will be focussed on the exhibits. Manufacturers are decidediy behindhand, and some do not wish to state definitely of what their exhibits consist. However, below we are able to give our readers an idea of the outstanding features of the various car exhibits and also of what they may expect to see in the shape of novelties amongst the accessories. Next week we will naturally deal with the exhibits more fully: and will include among other interesting features a complete illustrated buyers' guide. Unfortunately a few manufacturers have not yet supplied us'with details of their exhibits, and we are therefore unable to deal with them in this issue.
The following brief descriptions, however, as will be seen, cover the majority of the exhibits, which will be a scene of attraction in spite of larger cars.

EVERYONE will be anxious to see the A.B.C. light car, the most interesting feature of which is its aircooled engine. The \%manufacturers have had very
 extensive experience of zeroptane engines during the war, and it is only natural that the unit of their light car should follow in some way aircraft design. The gearbox is one of the few seen on lighticars that provides four speeds forward. The ratios of these being 4 to 1,6 to 18.6 to 1 and 12.5 to 1 . The suspension is carried out both fore and aft by means of quarterelliptic springs. The drive is conveyed by an open type propeller shaft to a bevel-driven back axle, while the change-speed gear lever is placed centrally. The complete machine only weighs $\frac{7}{\frac{1}{3}}$ owt.

THE new six-cylinder A. C. light car will probably be the only one of its kind at Olympia. Great interest will, therefore, be! taken in this exhibit. Here again
 aircraft design has been followed in many ways, iwith the result that a power unit has been obtained; which is clean and neat to an extreme.' The mounting and drive of the overhead camshaft should be closely inspected as in this respect the clever design of the engine is seen toradvantage. The position of the water pump should be notedsas it is placed at the forward end of the camshaft. The four-cylinder light $\mathrm{t}_{\mathrm{f}}$ car' will also tbe on view. The chassis of the six-cylinder and fourcylinder is practically identical except that the former is fitted with an H -section front axle and the latter with a tubular one The: whole tränsmission system has been considerably strengthened and visitors should note the new type of springing which is now carried out both front and rear by quarter-elliptics, which replace the old front transverse and the rear cantilevers. The body has also undergone rslight alteration and is now of more pleasing appearance.

THE Bugatti, ever since its introduction to the British market, has been famed for its speed, and year by year as new models have been produced this feature has been retained. A chassis only will be shown on the stand.-The engine is a four eylinder monobloe, four overhead valves being fitted to each cylinder, the bore and stroke being 68 mm . by 100 mm . respectively. Like the A.B.C. light car, this machine is fitted, with a four-
 speed and reverse gearbox, the control being through a single type of gate. A metal dise clutch is provided, the drive being finally transmitted to the rear wheels by silent bevels. The springing on this machine is similar to that on the well-known Baby Peugeot, namely, by inverted quarter-elliptic springs.

THE Cosmos is one of the few light cars that are constructed to a design which has been influenced to a large degree by experience in aircraft construction. The manufacturers were famed amongst other things during the war for their excellent aero engine. It is: therefore nota unnatural to note that the engine of their light car is designed on aero lines. It is a threecylinder radial engine, air cooled. The frame of the machine is also un-
 usual and the principle of construction adopted is extremely sound. The bore and stroke of the engine are 80 mm . by 80 mm ., whilst the clutch employed is of the single plate type. Three speeds and a reverse'are provided, in the gearbox, the final drive being by spiral bevel. Suspension is carried out on the A.F.S. patent system. Otheridetails of the specification are weight 11 cut., overall length 10 ft . 8 ins., and overall width 4 ft .9 ins. The machine is listed at $£ 210$ with a standasd body.

SPEED and high class finish of the chassis and body are the outstanding features of the Calthorpe light car. Few alterations' will be noticed in the cars on view. Visitors should note. however, the new arrangement of the oil pump and dipper rod which is now fitted to the crankcase close up to the forward near-side engine hanger. Also in order'to eliminate to the greatest possible extent any chance of undue noise' from the back axle, the manufacturers have discarded the enclosed propeller shaft, replacing it by an open one, which is provided with a leather ring universal joint close up to the back axle housing itself The sporting models of this make are now fitted with the new Sankey steel disa wheel which is a great improvement over the older type, as the tyres can be pumped up and the wheels removed without in any way interfering with the discs.

## LIFTING THE VEIL (contd.).

THIS well-known light car will be shown with ad four-cylinder engine of 64 mm . by 100 mm . bore and stroke respectively. The cooling is effected on the thermo-syphon system, and a S.U.
 carburetter and M.L. magneto are are fitted as standard. The drive is taken from the engine through an internal cone leather face clutch to a three-speed and reverse gearbox; the ratios being 4.4 to $1,6.75$ to 1 and 12.2 to 1 . The final drive is by bevel driven back axle. The suspension is carried out both front and rear by semielliptic springs, and both sets of brakes are constructed on the well-known internal-expanding principle.

IT is almost certain that the Duplex stand will be alive with interested spectators, as this machine is one of the few fitted with an eight-cylinder engine. These eight cylinders do not work
 independently, but are coupled up into four pairs, so that only four sparking plugs are necessary. The ordinary poppet type of valve has been dispensed with, and in its place the sleeve valve has been adopted. Transmission is designed on orthodox lines and the final drive is by spiral bevels. The suspension is carried out by quar-ter-elliptic springs, and the weight of the complete machine is approximately 12 cwt . Two models will be shown-a two-seater and a four-seater, both being fitted with high-class bodywork.

THE Deemster light car can be seen at Stand 93. This machine is fitted with a particularly neat fourcylinder monobloc engine having a bore of 62 mm . and a stroke of 90 mm . Water is
 circulated on the thermo-syphon principle and the lubricant is fed under pressure by a pump. Transmission is carried out on orthodox car lines, a gate-controlled gearbox giving three speeds forward and a reverse. The clutch is of the popular cone type, and the final drive of the back axle is by bevels. A point interesting to note is that the machine is fitted with a mechanical seat-starter and also with a Rotax dynamo lighting set.

THE Enfield-Allday radial-engined light car will be one of the sensations of the Show. The manufacturers have succeeded in evolving a design almost unique in light car practice which
 has been founded to a large extent on experiences with aircraft construction. The engine has five cylinders, the bore and stroke of which are 60 mm . by 80 mm . A forced draught of air is induced round the cylinders, so as to keep the temperature at the correct degrec. The transmission system includes a dry multiple disc clutch and three speeds and a reverse gearbox. The final drive is by shaft through spiral bevels to the back wheels. The springs are of a special cantilever type. The complete machine turns the scale at $9 \frac{3}{4} \mathrm{cwt}$. Two models will be shown, both two and four seater. The equipment includes a Brolt lighting set, and visitors should certainly not miss examining the unique construction of the frame. The body is also worthy of attention.

THE $10 \mathrm{~h} . \mathrm{p}$. F.I.A.T. was recently exhibited at the French Salon, where it aroused much interest. The bore and stroke of the four-cylinder engine are 65 mm . by 110 mm . respectively, the engine being particularly neat in design. The water circulation is helped by a centrifugal circulator placed in the system. The design of the chassis follows orthodox design, the gearbox giving three speeds forward and a reverse. The clutch is of the usual
 maltiple disc F.I.A.T. pattern, while spiral bevels form the final drive to the reaus axle. The suspension throughout is by semi-elliptic springs, and two pairs of internal expanding brakes are fitted on the rear wheel hubs.

THE G.N. is one of the best cyclecars at present on the English market. It chief point of interest is its remarkably efficient air-cooled engine which is built entirely in the G.N. works. It is a two-cylinder 90 -degree engine with an outside flywheel, the bore and stroke being 84 mm . by 98 mm . respectively. The carburetter fitted is a Capac and the ignition system depends upon a Fellows magneto. The transmission is by shaft to a bevel box and three speeds and a reverse are obtained by means of different sized sprockets working in conjunction with short length chains. Quarter elliptic springs are fitted.

RIGHT from the very commencement of the new motoring movement the G.W.K. has been a prominent light car. Its well-known friction drive has proved to all the world that this system of transmission, when properly designed, is reliable and efficient. In their new model the transmission is still carried out by friction discs, but these latter are placed and operated in a slightly different way. The engine is now a four-
 cylinder, and is placed in the orthodox position under a bonnet in the front. Another interesting point in the transmission is the method of obtaining the desired reduction in gear between the engine and the road wheels by means of a small pinion in nesh with an internally-toothed hub on the back wheels. Quarter-elliptice springs are fitted throughout, and both pairs of brazes are of the in-ternal-expanding type. The weight of the complete machine is 12 owt., and it will be shown both as a two and four seater. A 6 -volt lighting set, complete with dynamo, is fitted as standard. The price of both models is £275.

THE Hampton is famed for hill-climbing powers, and visitors to Olympia will naturally desire to examine this machine which makes light work of grar dients like the Nailsworth Ladder. This machine is fitted with a very neat orerhead-valved Dorman engine; the chassis is constructed throughout on very sturdy lines. A point of note is that on the front axle a jack pad is incorporated; in fact, it is formed integrally with the
 axle itself. The rear axle is of the full floating type, the wheels being=carried on tubular steel extensions. An electric starter is fitted and the price of the chassis is £360. A two-seater; complete with dickey seat, will be shown, and, fitted with electric lighting and starting equipment, the price is $£ 425$.

## LIFTING THE VEIL (contd.).

THE transmission is one of the most interesting features of the L.M. light car. This is effected by a central chain, which conveys power from a gearbox giving three forward speeds and a
 reverse to a solid back axle which can be completely detached from the car in a few minutes for inspection pusposes. The engine is an $8 \mathrm{~h} . \mathrm{p}$., water-cooled twin ( 85 mm . by 85 mm .), fitted with a Claudel-Hobson carburetter and M.L. magneto. Suspension is carried out by quarterelliptio springs both front and rear. The two sets of brakes provided are designed on orthodox lines, one being internal expanding and the other external contracting. The two-seater body provides in addition a dickey seat, and the price complete is 210 guineas.

THE Lagonda is one of the most moderately-priced coupés at present made. Its four-cylinder engine, which has a bore and stroke of 67 mm . by 77.8 mm . respectively, is fitted with overhead inlet valves. A new type of radiator has now been adopted, the old semi-circular one having been discarded. Transmission is designed on the usual lines, the gearbox giving three speeds and a reverse, the final drive being through a propeller shaft to a worm-driven back axle. It should be noted that the gear control is centraliy placed. The suspension in ifront is by means of a transverse spring, and quarter-elliptics are fitted at the rear. The weight of the machine is only 10 cwt .

THE manufacturers of the Mercury make a special point of the extreme accessibility to all parts of the engine, also to the comfort obtained on the road owing to the special design of springing
 which is by semi-elliptics in front and long cantilevers at the back. The bore and stroke of the fourcylinder engine are 64 mm . by 102 mm . xespectively. A Fellows magneto is standard, and the mixture is supplied by a Zenith carburetter. The gearbox provides three speeds and a reverse, and the clutch is of the metal-to-metal internal expanding type, the final drive boing by bevel. A special Colonial model of this machine is made, giving $10 \frac{1}{2}$ ins. ground clearance. Steering is effected by means of a worm and nut, and both bvakes are fitted on the back wheels. The equipment includes hood, screen, spare wheel and tyre, toal kit, and Smith dynamo.

THE outstanding feature of the Meteorite light car for 1920 is the sturdy construction of every part of the chassis. The engine fitted is a Coventry-Simplex, the bore and stroke being 66 mm . by 109.5 mm . The mixture is supplied by a Zenith carburetter, and a M.L. niagneto is part of the standard equipment. The general design follows more or less orthodox lines, the gearbox giving three forward speeds and reverse. The drive is transmitted from the engine, to the latter through a leather cone clutch and thence to a bevel-driven rear axle by an open cardan shaft. The suspension at the front is by half-elliptics and at the rear three-quarter elliptics are provided. Both sets of brakes are of the internal-expanding type and the weight of the two-seater complete is 12 cwt . C.A.V. lighting set, horn, jack, pump and the usual set of tools form part of the equipment.

THE Palladium makes its first bow to the puble at Olympia. It is almost certain to draw considerable attention, particularly as ite design embodies many unusual features. The two-cylinder engine is air-cooled and horizontallyopposed, and the bore and stroke is 89 mm. by 107 mm . A forced draught of air is conducted round the cylinders to keep them at the correct temperature, the transmission ind gears are effected by means of fric-
 tion discs, the final arive being conveyed to the back axle by means of a chain. The suspension is carried out throughout by means of semielliptic springs. The weight of the two-seater, which is sold at 275 guineas, is 10 ewt., the four-seater 11 cwt., the catalogue price being 295 guineas, whilst the coupe weighs $11 \frac{1}{2} \mathrm{cwt}$. and is listed at 365 guineas.

THE new Rover light car is fitted with a horizontally oppased two-cylinder air-cooled engine Readers will naturally be impatient to see with their own eyes this latest comer into the ranks of the new motoring movement. A very neat dummy radiator is fitted which resembles in shape that usually associated with Rover products. The engine is built up with the clutch and gearbox so as to form a complete unit. The gear change lever
 is fitted in the centre of the car and is oranked to bring it close to the driver's left hand. Final drive is conveyed by an open propeller shaft, with two universal joints to the worm-driven rear axle. Long quarter-elliptic front springs are fitted with full cantilevers at the rear. It should be noted that the combustion heads protrude through the sides of the bonnet so that a continuous rush of air is obtained. The car sells at £220, being, therefore, one of the cheapest at present on the market.

THE S.H. which recently made its appearance in England embodies in its chassis some of the soundest design at present to be seen in the light car world. The machine is of French manufacture and was recently sxhibited at the Paris Salon. The idea of the manufacturers is to make their machine to be looked upon as the RollsRoyce of small rars. It is therefore constructed almost regardless of expense, the price of the two-seater
 model being £550. The low position gained by reason of the special design is an interest ing point and the all-aluminium dash should not be missed. A beautifully-finished coupe body will be mounted on one of the chassis and should attract universal attention.

AMONGST others, " the man over 40 " will take a direct line for the Standard exhibits. This machine is famed for its reliability, and visitors to Olympia will therefore endearour to discover how this excellent feature is attained. They will note that every part is construcled in a sturdy fashion, and the impression they will receive is that the entire chassis is built to last. The wheelbase has been slightly lengthened, but in
 other respects the 1920 model differs very little from this year's machine. The Autovac system of petrol feed is a point of interest, particularly as it allows a roomy and convenient locker to be incorporated in the dashboard. The patert side curtains which are fitted to all models should not be missed, and by means of these it is possible to tum the open two-seater model into an enclosed coupe.

## LIFTING THE VEIL (contd.).

THE well-known Singer " 10 " will not have any radical alteration in its design for 1920. The chief point of difference is to be seen in the attachment of the hood and the provision of a new type of windscreen. The latter is now divided, the upper panel being capable of adjustment according to the driver's requirements. Its two uprights are constructed so as to form the fastening for the hood at their extremities. In this design the usual long straps which necessitate the driver or his passenger disinounting in the rain in order to fix are dispensed with. The hood fits well down on to the top of the windscreen and is provided with a flap so as to prevent rain entering the interior of the body. The accumulator box which is placed on the running board is now finished in the same colour as the body itself. The engine of the Singer is one of the smallest four cylinders fitted to a light car.

THE 1919 Wilton which will be exhibited at Olympia is fitted with a four-cylinder Dorman engine with a bore and stroke of 69 mm . by 100 mm . A Watford magneto and Zenith carburetter have been adopted as standard. The gearbox gives three forward speeds and a reverse, the ratios being 4-1, 8-1 and 13-1. The transmission is orthodox in design, the final drive being by worm to the rear wheels. The suspension is carricd out both
 front and rear by cantilever springs and all brakes act on the rear hubs and are of the internal-expanding variety. The seating accommodation is particularly generous, the two-seater model being sufficiently wide to accommodate three people. A dickey is provided and the equipment includes a Watford speedometer, C.A.V. lighting set, Watford clock, tools, inflator, horn and the highest grade coachwork. The price of the two-seater model is £410, of the four-seater model £430, and coupe £450.

# HOW TO REACH OLYMPIA. 

## The 'Bus and Underground Roules.

MANY readers who are\% not well acquainted with London experience a little difficulty in reaching Olympia. For the benefit of those who are in doubt we give on this page a map showing the position of the huge exhibition hall in relation to the various main line termini of the great trunk lines. Olympia is particularly easy of access by means of bus and by the great network of underground railways.

It is situated in Hammersmith, just opposite Addi-
sary to change at Earl's Court, where in all probability there will be a wait of from 10 to 15 minutes. If the Underground is taken from the West End it is necessary to join the District Railway which runs to Earl's Court. All the various tubes join up with this railway at one station or another. The great thing to remember is to change at Earl's Court.
Buses from all parts of London pass the doors of Olympia, but for any one not well acquainted with the L.G.U.C. service it is as well to make for Hyde


Map showing position of Ulympia in relation to the various large railway termini in London. Bus and Undergrcund routes are shown.
son Road Station. If the weather is fine we would advise all motoring pilgrims to take the open air route by bus, but as regards time taken on the journey there is not much difference whether one goes by railway or by road, as by the former method it is necesB38

Park Corner. From this point the No. 9 service is exceedingly frequent, and būses pass practically every few minutes. No change is necessary and visitors should alight at Addison Road when the huge building will be seen.

## ACCESSORIES AND EQUIPMENT.

## A Preliminary Survey of the Olympia Exhibits.

0NE of the greatest delights of the car owner is to choose and add various accessories to his car after he has purchased it; and there is no doubt that a good deal of curiosity exists in the mind of the prospective buyer to-day, who is looking forward to taking up motoring again after a fairly long


A neat petrol can carrier for the running board. absence from the driver's seat. In the old days it was possible to purchase almost any sort of "gadget," and from year to year the public looked forward expectantly to various types of new accessories which would improve the


A new Tangye jack. running, comfort, or appearance of the car.
The first post-war show at Olympia, therefore, will be of more than passing interest to the motoring public, which is returning to its former hobby with abundant enthusiasm, and anticipating a great improvement in accessories and equipment as a result of war experience. So far as we can judge at present the public will not be disappointed, for a very full and comprehensive range. of goods will be on view during the Show.
Undoubtedly the small "gadget" makes a direct appeal to the average car owner, and the stands of such concerns as Brown Bros., Etd., Smith's, of Great Portland Street, and Markt and Co. will prove a certain attraction to many thousands of Olympia's visitors.
Now that the winter is coming, the comfort of the driver must needs receive attention, and Brown Bros., Ltd., are making a special feature of "Glowwarm" gloves, which are electrically connected and maintain the hands at a comfortable tempera-


The Gofa tyre which is re. inforced with metal lattice work. ture for driving. In addition, Brown Bros., Ltd., will show such novelties as the Boyce valve connector, various Duco specialities, tyre pumps, lubricators, and hundreds of other accessories invaluable to every owner-driver.
It is doubtful whether at the last Olympia Show such a thing as a revolution indicator was at all popular, but as a result of war experience this and many other new accessories and fitments will be exhibited. S. Smith and Sons (M.A.), Ltd., will include revolu-
tion counters, as well as all types of dash fittings, amongst their exhibits. Markt and Co. will have a wide selection of speedometers, jacks, horns, and foot pumps, etc.
When the visitor has finished examining the vast array of accessories, he can turn his attention to other items in the maintenance of the car. Tyres are always of vital interest, and although no great changes in the outward design will be noticed, workmanship and material are vastly improved as a result of war experience. Such wellknown makes as the Stepney, Keldam, Palmer, Clincher, Rom, Goodrich, Goodyear, Henley, Dunlop, Avon, Macintosh and Burnett will be well represented, whilst an ingenious type-known as the Gofa-in which metal lattice work is used, will make its appearance at the Show.
Frustrating the car thief is a


The Bowden extra air inlet which is fixed direct to the induction pipe. problem to which practically every car owner-driver has devoted a considerable amount of attention lately, and few of the sivisitors at Olympia will pass by the Cowey safiety


The Igna plug cleaner, specially made for effectively cleaning the Igna plug. lock, which is attaining a great degree of popuiarity. A new jack will be shown by the Imperial Motor Industries, Ltd.. which is one of the many Tangye designs. There is no internal mechanism, and it can be litted to its work in a moment. There are various models made, one of which, the R.L., is specially suitable for light cars, being small and easily operated.
There is no doubt that the private sar uwner will use his car at night time a great deal more to-day than he did before the war, owing principadly to t he difficulties of transit which have arisen as a result of war economy. Clai lighting, therefore, becomes a problem requiring very careful consideration on the part of the owner-driver, and will receive more than the usual amount of atten tion this year.


A neat fitting for converting an acetylene lamp to electricity.

## ACCESSORIES AND EQUTPMENT (contd.).

So far as electricity is concerned, the C.A.V., Lucas,. Brolt, and Smith's equipment, although differing in many respects, are all equally reliable, an endeavour in each case being made to arrange the wiring so that for purposes of control the dashboard fittings are neat and compact, whilst at the same time being accessible. A new departure of special interest to light car and

# R-5077 

A neat aluminium number plate made by R. W. Coan. the magnets. The dynamo is retained in position by a strap and knurled screw, whilst the magneto drives it at the opposite end by ordinary toothed wheels. Acetylene will be well represented, generators of the diving bell and riddling types appearing on most of the stands showing accessories. Compressed acetylene, however, will command a great deal of attention, and one of the neatest forms is the "Meteorlite" made by Allen Liversidge and Co., of Victoria St., London.
An ingenious fitment recently introduced by 'Taylor's, of Store Street, is an electric lamp terminal enabling an ordinordinary acetylene or side lamp to be converted to electricity in a few moments. It consists of a lamp holder with a bayonet fitting at each end and two screwed rings, which enable the whole to be introduced into an acetylene lamp and gripped into position. Another simple but very useful fitting introduced lately by the same concern is a petrol can carrier, which consists of two substantial metal strips screwed on to the running board, and in which a petrol can is secured by means of winged nuts. Now that benzole is being used extensively extra air inlets which can be fitted to the induction pipe will command atten-

Lucas's "Magdyno " suitable for small cars. It combines a Thomson-Bennett magneto and a Lucas dynamo. The latter is housed inside the magneto itself, as can be seen in the photograph.

cyclecar owners is the Lueas
Magdyno," which consists of a Thomson-Bennett magneto with a Lucas dynamo introduced above the armature inside


The Smith dashboard, combining bezel-wind clock, bezel-wind switch speedometer and ammeter.
tion and, in this connection, the Bowden extra air inlet should not be overlooked. Number plates, if obscured by mud, etc., may give trouble, but Coan's aluminium plates, in which the figures themselves are raised and polished, should satisfy the sternest guardian of the law. Various types of Claudel-Hobson carburetter will be exhibited, the one of most noteworthy interest to the light carist being the typo M.I.A. The general feautres of the Claudel-Hobson carburetter are too wellknown to require recapituIation, but the easy method of adjustment and the air flap which facilitates easy starting are features which should not be overlooked. Another carburetter known as the "Beemac" will be shown by the Birmingham Accessories Co. This is entirely automatic operating on a principle which regulates a proportionate suction of air and petrol for all positions of throttle opening. Should it be necessary, for reasons of climatic or fuel alteration, the jets can be changed without stopping the engine. In addition to this carburetter the Bir-

The combined tool locker and cylinder. holder for accommodating "Meteorlite" compressed acetylene.
mingham Motor Accessories Co. will be showing, amongst other goods, motor jointings in any shape or size, plain or graphited with or without brass wire gauze insertion. Economy is a watchword nowadays, and in this connection the visitor will not overlook the "Enot" patent cork discseated petrol tap of which patterns are available for use on motorcars of all descriptions. It is claimed with this type of tap that it is positively petrol-tight under pressure, will never leak, seize or slacken, and


The Claudel-Hobson ype M.1.A. carburetter for light cars. should, therefore, be a very economical fitting in the long run.
Radiators, bonnets, tanks, silencers, chains, hoods, motor coachwork, steels, dise wheels, tyre inflators, etc., will all be exhibited.

# OVER • THE • WIRE <br> The Benzole Scarcity-Help Wanted-London-Edinburgh Non-stop Engine Test-Warning DevicesLondon's Fogs. 

## Inside News Current Events

## THE SPIRIT IS WILLING, BUT-

A WEEK or two ago I made reference in these columns to the difficulty in obtaining N.B.A: benzole, and I have had my attention drawn to the fact that the inability to procure this fuel is due to the difficulties of distribution. As I have not paid a visit myself to Horseferry Road, I have not yet been able to sample this particular brand. A correspondent having read my previous remarks has written me to say that he finds no difficulty in obtaining supplies in Hyde, but it would appear that he obtains fuel from a local chemist. This may explain my difficulty, and instead of wasting time in garages in the future, I will betake myself to the nearest bootmaker's, who may be able to supply me with the precious fluid. Our correspondent, however, does not specify that the benzole he obtained is that known as N.B.A., and I should like, therefore, to hear further from him regarding the matter.

## INADEQUATE PRODUCTION.

SO far as I can see one has only to obtain a draughtsman to make a plan and elevation of any weird-looking design of light car or cyclecar, obtain a certain amount of publicity, and orders, accompanied by deposits, roll in. This is certainly a very extraordinary state of affairs, and it appears to me that many people who are in possession of money are not in possession of brains. Taking these facts into consideration, it is not diffecult to realize the extraordinary demand which must exist in concrete form for a machine which actually does exist and which has been manufactured, though in somewhat limited quantities. It does, therefore, not surprise me that one of the best-known London manufacturers of light cars, recently described in The Light Car and Cyclecar, is so inundated with orders that the works are absolutely inadequate to cope with the rush. I understand from their works manager that he is looking out for other manufacturers who have facilities to assist him in securing a large production of this well-known light car. He would be particularly attracted to a manufacturing concern in or near London with large premises and plant capacity, that would be suitable for the production of light cars either in part or in whole. If any manufacturer should feel disposed to go into the matter further, and would communicate with me, I shall forward his letter to the proper quarter.

## NON-STOP ENGINE TEST.

IN conversation with Mr. Rex Mundy the other day the question naturally turned towards his forthcoming R.A.C. Observed Trial. As previously announced, this will be a non-stop engine test from London to Edinburgh on a standarid G.N. This is not the first time that Mr. Mundy has set out on a test of this nature, for some time ago the A.-C.U. officially observed him in a similar trial from London to Edinburgh on a water-cooled Williamson sidecar combination. For


Mr. Rex Mundy.
this forthcoming test four certificates will be issued: first of all for the G.N. cyelecar itself, secondly for the fuel consumption of the Sthenos carburetter, and thirdly and fourthly for N.B.A. soirit and the Easting windscreen. Mr. Mundy, whoris doing this "stunt" on his own, is perhaps not so well known in the motoring world as he is; in the ranke oi motoreyclists, his successes in the latter sphere being.very numerous. ${ }^{2}$ In the light ${ }^{\prime}$ car world he came into prominence in the Grand Prix, in which he drove a Greenengined Morgan. Unfortunately, however, the front wheel, collapsed, which spoiled his chances of success.' He has obtained highest awards drıving G.W.K.s, Humberettes, A. C.s and Morgans in numerous events, and in addition to competing in the British Isles has been successful on many occasions in France and Holland.

## TOOT-TOOT.

IT is wonderful the variety of warning devices which are fitted at the present day to people's machines. There are mild and strong hooters, there are musical and noisy ones. There is the one you cannot hear and one that makes a noise. like 64 thunderstorms rolled together. I have recently heard of a warning device which plays a tune, but the report carefully omitted to say what;melody the owner favoured. I hope it was nothing so sentimental as "Sing Me to Sleep" or "I Hear You Calling Me," either of which I am afraid would have the opposite effect to that desired, namely, to remove the obstruction from the motorist's path. Personally, I consider that every machine should have two hooters, one for town work and one for country highways where farm carts and chars-d-bancs are met with every now and again. For the former purpose I have fitted on my machine one of the long type Apollo electric horns, and for the latter a Klaxon horn of the coffee grinder type. The latter I only use for very sleepy:individuals, andi its efficiency I judge according to the intensity of the remarks it evokes.

## MISTS WE WOULD GLADLY MISS.

WE have recently been favoured in London with a few of its "particulars." It is now about four years since I experienced one of these delights. In spite of all the changes that have happened to men and things during the war, London fogs appear to have remained "as you were." On Sunday night I was on my way from Southall to London, when I ran straight into the fog, first of all at Hanwell and later on at Acton. This is one of the few things that really frighten me when in a car. The utter helplessness that one experiences is most unnerving, but I was fortunate to have been on this particular road when the fog descended, for, being on a light car, it was a more or less simple matter to keep the front wheels on the tramlines and proceed slowly on low gear. Motorbus drivers, on account of the height of their seat from the ground, were unable to take advantage of this tip, for they were unable to see the tramlines

## OVER THE WIRE (contd.).

at all ; but about five bus drivers who were hopelessly lost in my vicinity had this great advantage of a light car brought home to them in no uncertain way, for they followed on in convoy fashion behind me, keep-
ing a sharp look-out for my rear light. We are always so accustomed to saying everything horrible we can "about tramlines and tramears in general that it is quite a relief to know that in some circumstances they can really be of use.

Au Courant.

## THE WOMAN'S CAR FROM THE WOMAN'S POINT OF VIEW.

THE average light car, in the opinion of the writer, does not meet with the requirements of the woman driver. As most points raised concern details, it would not seem a difficult matter to turn any existing light car into the writer's ideal machine.

In the first place, mechanical perfection should be the first thought of the designer, it being mostlimportant that a woman's car should be as reliable as possible, for the writer is assured that engine trouble is far more annoying to a woman than a man. Adjustable seating and adjustable pedals are second in importance; at. present the distance between the
one which fits so well on to the bonnet that, however hard the rain runs down the glass, none percolates through the cracks on to one's skirt. It should be high enough to fit on to the hood when in use, and should have hinged wings at the side as, extra protection from wind, dust and the weather in general.

A concealed hood is worth mentioning, as it would gather less dust than the ones now generally, used. As maximum safety is necessary in a woman's car, the manufacturers would do well to build her a chassist with fou wheels, as a four-wheeled vehicle


Mr. Greaves competing in the Liverpool Motor Club's event last Saturday. The machine is photographed ascending Pen-y-Bal hill in South Wales.
seat and pedals is too great for the average woman. The pedals should also be adjustable to enable a woman to use them with comfort and safety.

An addition which would be welcomed by the married woman driver is a safety catch on the door; this would give her peace of mind when taking the young members of her family with her. A self-starter would also be an advantage, as it is annoying to start out with clean gloves and arrive at one's destination with soiled ones; the starting handle is so near the ground that even on the finest days it is bound to get dirty. The present type of windscreen leaves $a$ lot to be desired. The ideal trindscreen is 342
grips the road far better than one with only three. The colour of the car, of course, is a matter of taste, but it is generally felt that a light colour is the most useful, as it shows dust less than a dark one. The upholstery should be of a dark leather to contrast, and only just enough bright metal should be used to relieve and smarten up the car. Brass usually looks best, but nickel is so much easier to keep clean.
"O.M.S." mentions in her article that one's skirt hem gets draggled by coming in contact with dusty floorboards; that, of course, is a point the manufacturer would find it hard to alter. A travelling rug on the boards prevents this however.
J. С:B.




THE policy which is being adopted by the Palladium Autocar Co. in respect to the delivery to the public of their friction-driven light car, the Palladium, is a very commendable one. For several months past the Palladium may have been seen on the road, and probably many prospective purchasers of this light car have wondered why delivery has not yet commenced. The reason is that several


The power unit of the Palladium showing how the cylinders are encased for cooling purposes.
experimental machines have been erected, with the sole idea of driving each to destruction by putting them through every possible test for soundness of construction and the reliability of every component. By this means the final production, when it comes into the hands of the exacting individual, should give the utmost satisfaction both to the manufacturers and the purchaser. Incidentally, this policy is being pursued by several other well-known light car concerns.

## A Preliminary Run.

When taking over a new machine of this description, where individuality of design is prominent in every part, a double interest is attached to the run if a tour of the machine shops has been made and a visit paid to the experimental department before the start.
Before leaving the Palladium works we nere afforded this opportunity, and as a result of this we felt that the cruellest treatment meted out to the machine could not strand us on the road. Before taking the little two-seater over, we enjoyed a run in
the immediate vicinity of the works. Actually this was quite unnecessary, as the driving position and the disposition of the pedals and levers is so comfortable and natural that we were at home in the car in a few minutes. Running out into Putney High Street, we were quick to appreciate the flexibility and control of the engine and the ease of the steering.

## Speed on the Level.

On arriving at Wimbledon lunch was taken, and afterwards we were sonn on the road, and, by way of Worcester Park, Ewell, Epsom, Ashtead, and Leatherhead, ran into Dorking. During the course of this short trip, we were able to let the Pafladium out, and although no speedometer was titted, the maximum speed attained, 'probably', was 'vetween $45 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. and $50 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. So far we had hot had it real opportunity to test the machine on anything approaching a hill, so, as a preliminary, we ran into Reigate. Reigate Hill revealed the surprising pulling power of the engine on top gear, the ratio of the latter being about $4 \frac{1}{4}$ to 1 . By retarding the ignition the gradient could have been surmounted on top, although the engine revolutions were extremely low. Even in these circumstances there was absolutely no sign of slip between the friction disos; but should this have developed, pressure on the disc-tensioning pedal would have immediately recti. fied the trouble. It might be mentioned that during the time the ma chine was 'in our hands we had no need to call upon th is tensioning pedal, which goes to demonstrate the efficiency of the arrangement adopted on the Palladium which provides correct tension on the different gears.

To zevert back,


Air is drawn in by the vanes on the flywheel and expelled at the edges. it was mentioned that a change down on Reigate Hill was not essential, but owing. to the system of cooling adopted, the faster the engine revolves the more efficient is the cooling effect. Each cylinder is encased, and the air is drawn in over the heads of the cylinders by the fly wheel, the latter having specially-shaped vanes to promote circulation.

## OUT WITH A PALLADIUM (contd.).

The following morning we replenished the tanks and were soon on the Eastbourne Road, with an additional passenger in the dickey seat. Upon running into Purley, we found the drip feed had ceased to function, but after blowing through the oil pipes this trouble was soon put right. It should be mentioned that the present dxip-feed system of lubrica-
was much cooler after a hard climb on third gear than a slower climb on top. We descended a steep hill with the object of testing the braking system. Each independent set of brakes we found particularly effcient, which is not surprising, as they are of ample dimensions operating inside drums on the rear wheels.

A Severe Test.
To show that it is almost impossible severely to damage the frictional contact surfaces, a third, and


Which way? Signposts are now being overhauled and repainted and a stop has therefore to be made to make enquiries before proceeding. The Palladium driver is perplexed on arrival at the four cross roads in New Chapel on the Eastbourne Road, as the lettering has been painted over.
tion has not been definitely settled, as provision has been made in every way for the installation of a mechanical oil pump, making the system forced fed.

## Hill-Climbing.

Turning off to the left at Purley, we soon left Caterham and Godstone behind, and commenced to climb Tilburstow Hill. The average gradient of this hill is about 1 in 10 , but it means a hard pull for perhaps half-a-mile, and with three up we considered that this would give the Palladium a chance of proving its worth. Unfortunately, on the worst portion a plug "packed up," with the result that one cylinder only was functioning. The trouble was traced to a shortcircuit inside the body of the plug, and, having fitted a new plug, a clean ascent on third gear was made. It should be mentioned that the plugs are so situated in the cylinder that although the engine was pouring forth a blue cloud from the exhaust practically the whole time, on no occasion did we experience a dirty plug.
To improve the cooling still further, each valve cap is elongated and provided with fins which protrude through the casing. It was found that the engine
a most efficient, means of pulling up in an emergency was tried. Whilst proceeding on top gear at about $15 \mathrm{~m} . \mathrm{p} . \mathrm{h} .$, the gear lever was pulled back into reverse and the engine accelerated. The effect was instantaneous and forward progress of the car arrested in a very positive manner. After coming to a standstill, the car started away easily in reverse. This is not recommended as general practice, but serves to illustrate the efficiency of present-day friction drive. In an emergency, however, assuming that both brakes failed, it might be the means of averting a serious accident.

A stop was made at East Grinstead for lunch, and on embarking on the return journey we took the dickey seat passenger into the forward seat. Although perhaps a trifle cramped, the driving position was by no means uncomfortable.
The suspension and comfort of the Palladium generaily were found to be excellent in every way, being far and above many cars which we have driven.

We should like to add in conclusion that the absence of a difierential was hardly noticeable and that the final chain drive proved absolutely silent.

## The A. A. and Spare Parts.

The A.A. is interesting itself in what is one of the biggest motoring problems of the day--that of obtaining spare parts. Motorists requiring spare parts are strongly advised, if they are members of the A.A., to communicate with the nearest of the $20 \mathrm{~A} . \mathrm{A}$. branch offices distributed over the country.

## Three-wheslers at Olympia.

In reply to numerous inquiries, we would like to point out that three-wheeled cyclecars will not be exhibited during the first weck of the Show, but will appear in the Cycle and Motor Cycle Exhibition held from November 24th to 29 th at Olympia-one weekwafter the Motor Show.

## Patron, H.M. The King.

Thirteenth

## International

MOTOR EXHIBITION organised by The Society of Motor Manufacturers \& Traders, Ltd., in connection with the Royal Automobile Club, OLYMPIA, NOV. 7-15


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Heat never affects the "Number One" -race the engine to its limit and you'll still find the "Number One" faithfully and efficiently performing its function. You can obtain APOLLO "Number One" Plugs at any agents - there is no need to accept substitutes, as we gu. urantee delivery by return.
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BD.

for Cars used for Private, Pleasure or Professional Purposes in the British Isles and for Egypt.
IN MOTOR CAR Insurance the best is the cheapest, the best representing that which affords the most complete cover against the many serious risks the motorist, and his ear, is exposed to. Insurance that does not do this is of no practical use, for it is the unexpected and unprovided for that invariably occurs.
The "British Dominions" 1919 Empire Motor Policy has been carefully brought up to date to embrace the increasing risks of modern motoring so that the holder may view, with a degree of equanimity, the prospect of mishaps which, even with the greatest skill and care, are unavoidable. The Policy, in addition to the covers given above. provides for:-

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## THOUCHTS \& OPINONS

NOTICE TO CORRESPONDENTS.
Prelerence is given to letters intended for pubfication which are to appear above the writer's name and addiress, but whers this is not desired, Imitials or a nom de plume will be subsittuted if requested in view of the :

> The Suggestions of To day may be the Realities of To-morrou
peculiarly wide pubifity afforded to letters en light car and cyclecar subjects appearing in these columns, readers ars asked to make Chetr letters as briat as possibis so that a areater numher may be published. Letters recolved up to Monday morn.ng first pest usually appeap in the lollowing Fridiay's issus.

## Standard Machines and the General Efficiency Trial.

Your contributor in "Over the Wire" is rightly exercised over the question of standard models. He suggests that " no machine should be called a standard model unless a minimum, say, of 50 machines, similar to that entered have been manufactured." (Notice "have been, not "are likely to be.") Your contributor hardly realizes, perhaps, that such a definition would have cut out all but a few of the cars entered for the "general efficiency" trial, of which he is speaking. We admit that we ourselves have not manufactured 50 four-speed machines as yet, though there are a considerable number on the road already, and we hope that before long the number will very much exceed 50 . Are there, for instance, 50 EricCampbells or Biforts on the road yet? Have the G.N. concern made 50 of their new model, which differs materially from the well-known pre-war type? Most of the machines entered would have been barred by your contributor's definition.
Moreover, he does not foresee the result. No new model, nor any varlation from former practice, could be tested in any
public trial. Yet this testing is really one of the nost important advantages of trials. It is only in this way that the manufacturer, or the public, can obtain reliable information as to the advantage, or otherwise, of any new production. Fifty cars is not a large output, but we should be sorry to make even that number before we had proved them in a public test, nor do we think that the public is well advised to venture onf the unknown.
No doubt it is possible to fake a "standard" car for competitions in a manner which the manufacturer has no intention of repeating. It should not be difficult to detect-these cases. On the other hand, any model whicl has been advertised and catalogued, or which has been described in one or other of the important motor journals should certainly be considered "standard." We need not add that all the cars entered in the "efficiency" trial would have come under this category.

Morgan Motor Co., Ltd.
Malvern Link, Worcester.

## Glycerine as an "Anti-freezer."

With reference to your paragraph in "Over the Wire," headed "Now the Winter is Here," by your correspondent "Au Courant," in your issue of October 18th, I am wondering what glycerine he must have been using to get over heating and ill-effects on the rubber connections. Personally I have used glycerine as an "Anti-freezer" for many winters, and find no trouble of any kind with it. While it gives one

I pointed this out to him he said, to my astonishment, that no blame could be put on him as it was not lighting-up time, and produced a daily paper, dated October 6 th, showing sunset as $5.12 \mathrm{p} . \mathrm{m}$. and lighting-up time as 6.12 p .m. (one-hour after sumset) instead of $5: 42$ p.m. (half-hour after sunset) according to law. One does not expect cyclists to read motoring papers to learn the correct, lighting-up times, but it is a pity that newspaners mislead their readers.

LR4540.
Brentwood.
The Unlucky " 13th."
Pity the poor English manufacturer! On October 13th my garage people dispatched an order for spare parts to the manufacturers of a "well-known cyclecar." Up to the time of writing the order has not even been acknowledged. Pity the poor English manufacturers, and others ! Maybe he is superstitious!

London, N. 7. An Owner?
In Support of the Rear Light. "F.J.W.'s " ${ }^{\text {M }}$ remarks in your issue of October 25th on rear lamps. They take up but little time to look after, are a great safeguard to the cyclist, and a help to other faster traffic. Mr. Cook's 1deas really are the limit in selfishness. Why should a motorist with a. measure of mechanical power at his command be compelled to travel at a mach slower pace
a comfortable feeling in frosty weather, it saves that awful business of continually filling and emptying one's radiator. Whitehall, S.W. 1:
W. MoClure.

## Incorrect Lighting-up Times,

May I trouble you with another aspect of the rear light controversy, and invoke your assistance in persuading newspapers to print the correct lighting-up times? On October 13 th at 6.8 p.m. I narrowly missed running down a cyclist on the Great North Road. He was riding without lights, and when
han necessary because of the obstinate refusal of such cyclists as Mr. Cook to provide e simple thing like a rear lamp? With regard to these lamps going out, etc., if these people would atilize a portion of the time spentain trying to effect the disappearance of the rear light, in a little occasional attention to the wicks and reservoirs of their lamps, their troubles would disappear. Incidentally, Mr. Cook's remarks on motorists and their "vicious principles," etc., appear to be a bad case of the pan calling the kettle black.

Withington.
O.H.

## The 90 Degree Twin Engine.

I have read with considerable interest Mr. Buckingham's letter in The Light Car and Cyclecar of October 25th. lieing one of those unfortunates who is obliged either to have a motorcycle combination or walk, I have been expectantly alwaiting the great day when the crudities of the former inethod of locomotion would have penetrated the perception uf a reputable manufacturer. I think Mr. Mantell's article was wel! timed, and Mr. Buckingham's comments thereon have filled me with hop for the future. There are, however, one or two little points upon wich I would like enlightenment in respect to the 90 degree twin engine we are promised. Why, if this type of engine is functionally so excellent, has it not been more generally adopted? I. am aware that theoretically the 90 degree twin engine and the horizon-tally-opposed can be almost perfectly balanced, and yet in actual practice, so far as my experience yoes, they do not feel materially different from any other twin, and certainly seem to develop "periods" quite as badly. Also Mr. Buckingham speaks of incorporating up-to-date practice in every respect. Now this is quite a cut and dried 1919 pattern phrase which I think would stand a little detailing. It appears to me that such "up-to-date" motorcycles and rars as we have been graciously supplied with are, in point of engines, not one whit better than pre-war models. In fact, where motorcycle engines are concerned, I am inclined to think that if anything they are a little worse; that is, in the power for c.c. and consumption sense: In conclusion, I would remark that I do not put these queries in a carping spirit, but am honestly out for enlightenment. I have noticed in the various motor papers many queries of a similar nature, and feel sure that a little information on these points world be greatly ippreciated by others as well as myself.
Shepherd's Bush, W.

## Simplicity and Not Elaboration Required.

Mr. Buckingham is certainly to be congratulated on his expressed determination to niarket a small twin-cylinderengined car of simple design; many small cars have all the complications of the conventional large cars, so adding to their


Five up to the top of Beachy Head! The Singer bore its load valiantly and without showing any signs of distress.
who do not care for motorcycle combinations, excellent as they are in their way, to possess a small car, giving a certain degree of comfort. Furthermore, although they may not be gifted with any mechanical ability, they can feel confident of carrying out their own repairs, and at any rate have a thorough knowledge of the working parts.
The Buckingham no! doubt will be such another, but there is a big field for enterprise, and the few we know of cannot, I feel sure, cope with the great demand existing, and open to cultivation, for a really simple, well-designed small car at a very moderate figure. Prospective purchasers have neither aesthetic ears nor a desire to delve too deeply into their small capital. Joseph O'Neill.
Manchester.


The Morgan team in the Reliance Cup Open Trial, held by the Liverpool Motor Club, in North Wales last Saturday.
Ask your Dealer regarding their quality and the price of other sizes.

## STANDARDISATION of CHAINS

## Cutter Forms for Roller Type up to $\frac{3}{4}-\mathrm{in}$. Pitch.

THE Association of BRITISH DRIVING CHAIN MANUFACTURERS is dealing with the Standardisation of Roller Chains, and the new standards up to $\frac{3}{4} \mathrm{in}$. pitch have already been announced. For the convenience of chain users and to ensure complete interchangeability, tooth forms have also been standardised. The ASSOCIATION FORM, while not being identical with any of the existing forms, incorporates the essential features of each. The general construction is shown in the diagram. It consists of a ROLLER SEATING, WORKING FACES, and TOPPING CURVES, all of which are arcs of circles. The angle of 1200 subtending the roller seating has its origin at the centre of the diameter of the roller seating. The working faces are comparatively flat curves tangential to the roller seating, and the topping curves are tangential to the working faces and of such a radius as to permit a suitable height of tooth.
The dimensions of tooth forms for chains up to $\frac{8}{-}$-in. pitch are given
 in the following table :-

| Roller Dia. | $\left\|\begin{array}{c} \text { Cutter } \\ \text { No. } \end{array}\right\|$ | No. of Teeth to Cut. | Length of Working Face L.W. | Radius of Roller Seating R.S. | Radius of Working Face R.F. | Radius at T.op of Tooth R.T. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| '250' | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{gathered} 9-12 \\ 13.19 \\ 20 \text { and over. } \end{gathered}$ | $\begin{aligned} & { }^{1} 12^{\prime \prime}- \\ & { }^{15} 54^{\prime \prime}(\min .) \end{aligned}$ | $\cdot \overline{\cdot 16^{\prime \prime}}$ | $\begin{gathered} 75^{\prime \prime} \\ \text { 1 } 125^{\prime \prime \prime} \\ \left.3825^{\prime \prime} \text { (min.) }\right) \\ \hline \end{gathered}$ | $\begin{aligned} & 45^{\prime \prime} \\ & 18^{\prime \prime} \\ & .052^{\prime \prime} \text { (max.) } \\ & \hline \end{aligned}$ |
| $305^{\prime \prime}$ | $\begin{aligned} & I \\ & \hline \\ & \hline \end{aligned}$ | $\begin{aligned} & 9-12 \\ & 13-19 \end{aligned}$ <br> 20 and over. | $\begin{aligned} & \text { } 16^{\prime \prime \prime} \\ & \left.\cdot 205^{\prime \prime} \text { (min.) }\right) \\ & \hline \end{aligned}$ | $154^{\prime \prime}$ | $\begin{aligned} & \cdot 6^{\prime \prime} \\ & \mathrm{I}^{\prime \prime} 5^{\prime \prime} \\ & 5^{\prime} \mathrm{I}^{\prime \prime}(\text { min. }) \end{aligned}$ | $\begin{aligned} & .5^{\prime \prime} \\ & .24^{\prime \prime} \\ & 07^{\prime \prime} \text { (max.) } \\ & \hline \end{aligned}$ |
| 335' | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{gathered} 9 \cdot 12 \\ 13-19 \\ 20 \text { and over. } \end{gathered}$ | $\begin{aligned} & \quad 16^{\prime \prime} \\ & \left.\cdot 205^{\prime \prime}(\min )\right) \\ & \hline \end{aligned}$ | 169" | $\begin{aligned} & 6^{\prime \prime \prime} \\ & \mathrm{I}^{\prime \prime} 5^{\prime \prime} \\ & 5^{\prime} 1^{\prime \prime}(\text { min }) \end{aligned}$ | $\begin{aligned} & 6^{\prime \prime \prime} \\ & 24^{\prime \prime} \\ & 07^{\prime \prime}(\text { max. }) \end{aligned}$ |
| 4" | $\begin{aligned} & 2 \\ & 3 \\ & \hline \end{aligned}$ | $\begin{aligned} & 9-12 \\ & 13-19 \end{aligned}$ <br> 20 and over. | $-256^{\prime \prime} \text { (min.) }$ | $202^{17}$ | $\begin{gathered} 77^{\prime \prime \prime} \\ \mathrm{I} 875^{\prime \prime} \\ 6.375^{\prime \prime}(\mathrm{min} .) \end{gathered}$ | $\begin{aligned} & 75^{\prime \prime \prime} \\ & .3^{\prime \prime} \\ & -087^{\prime \prime}(\text { max. }) \end{aligned}$ |
| $475^{\prime \prime}$ | $\begin{aligned} & 1 \\ & 2 \\ & 3 \end{aligned}$ | $\begin{gathered} 9-12 \\ 33^{-19} \\ 20 \text { and over. } \end{gathered}$ | $\begin{aligned} & -24^{\prime \prime} \\ & -307^{\prime \prime} \text { (min.) } \\ & \hline \end{aligned}$ | 2 $40^{11}$ $\square$ | $\begin{aligned} & .9^{\prime \prime} \\ & 2.25^{\prime \prime} \\ & 7.65^{\prime \prime}(\mathrm{min} .) \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline 9^{\prime \prime \prime} \\ & \cdot 36^{\prime \prime} \\ & -\quad \text { Io5 } \\ & \hline \end{aligned}$ |

Particulars of Association standards for the larger roller chains and their tooth forms will be detailed in subsequent announcements. Eventually, when complete standardisation has been effected, full details will be published in pamphlet form ; applications for which should be made to the Secretary.

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## GUIDE TO DETAILS OF POST.WAR MODELS.

A Summary of Light Cars and Cyclecars of which Details are Available.


GUIDE TO DETAILS OF POST.WAR MODELS (Continued).

| Make | Bore and stroke. | Cubic capac | $\overline{\mathrm{A} C \mathrm{C}}$ | Nom. H.P. | $\begin{aligned} & \mathrm{No} \\ & \mathrm{cyi} . \end{aligned}$ | 砍 | GENERAL FEATURES. | Price. | Described in issue dated |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| G.N. | $\mathrm{simb}_{8 \mathrm{~m} . \mathrm{mb}}$ | c.c. 1098 | a.c. | 10 | 2 | 2 | 90 degree balanced twin engine, three speeds and reverse, Transmission shaft and chain. Wheelbase, 8 ft . Track, 3 ft .6 ins . G.N., Ltd., Etna Works, Albert Road, Hendon, N.W. 4. | Standard <br> £ 184 <br> "Vitesse" | $\begin{gathered} \text { Jan. } 23 \\ 1919 \end{gathered}$ |
| G. W.K. | 66 by 100 | 1368 | W, 0. | 10 | 4 | 4 | Friction drive. Wheelbase, 8 ft .9 ins. Track, 4 ft . Weight, 12 cwt . G.W.K., Ltd., Maidenhead. | £214 | $\underset{1919}{\mathrm{Jan},}$ |
| HAMPTON | 63 bj 120 | 1496 | [ ${ }^{\prime}$ 'c- | 10 | 4 | 2 | Three speeds and reverse, final bevel drive. Wheelbase, 9 ft . The Hampton Engineering Co., Dudbridge, Stroud, Gloucester. | Two seater £425 Four seater $\mathbf{\$ 4 6 5}$ £500 | $\begin{gathered} \text { Aug. }{ }^{9} \\ 1919 \end{gathered}$ |
| H F.G. | 85 by 110 | 1244 | a.c. | 10 | 3 | 2 | Friction drive final drive by bevel, wheelbase, 9 ft . Track, $\mathbf{i f t}$. C. Portass and Son, Ltd., Broadfield Road, Sheffield. | about $£ 195$ | $\begin{gathered} \text { July } 26, \\ 1919 \end{gathered}$ |
| LAGONDA ( 1920 Model) | 67 by 77.8 | 1099 | w.c. | 11.9 | 4 | $\left\lvert\, \begin{gathered} 4 \text { and } \\ \text { coupe } \end{gathered}\right.$ | Three-speeds and reverse. Final worm drive. Dynamo lighting set. Electric self-starter. Wheelbase (two seater) 7 ft .9 ins.; (four seater) 9 ft . Track 3 ft . 10 ins. Lagonda Ltd., Staines, | Coupé about 335 Gns. Four seater 355 Gns. |  |
| LM. | 85 by 85 | 961 | w, | 8 | 2 | 2 | Three speeds forward and reverse, chain transmission, disc wheels. Little Midland Light Car Co., Ltd., Blackburn. | 210 Gns. | $\begin{aligned} & \text { April } 19, \\ & 1919 \end{aligned}$ |
| L. S. D. | 85 by 85 | -961 | a. | 10 | 2 | 2 | Three-wheeler, two speeds and reverse. Final drive by chain. Wheelbase, 6 ft . Track, 4 ft . Sykes \& Sugden, Lfd., Huddersfield. | about£ 140 | March 15 1919 |
| MAJOLA (French) | $\begin{aligned} & 59 \text { by } 90 \\ & 65 \text { by } 105 \end{aligned}$ | $\begin{aligned} & 1000 \\ & 1399 \end{aligned}$ | $\left\|\begin{array}{c} \text { w.c. } \\ \text { w.c. } \end{array}\right\|$ | 88 | 4 | 2 4 | Three speeds and reverse. <br> Four speeds and reverse. 4, Rue Ney, St. Denis, Fraice. | $\begin{aligned} & 8340 \\ & £ 480 \end{aligned}$ | $\underset{1919}{\operatorname{March} 22,}$ |
| M.B. | 85 by 85 | 961 | w.c. | - | 2 | 2 | Three-wheeler. Two speeds and reverse. Final drive by chain. The Premier Motor Engineering Co., Premier Motor Works, St. George's Road, Bolton. | labout $£ 200$ | $\begin{gathered} \text { Aug, }{ }_{1919}^{30,} \end{gathered}$ |
| MENDIP | 67 by 89 | 1255 | w.c. | 1) | 4 | 2 | Three speeds and reverse, final worm drive. Wheelbase, 8 ft . 3 ins. Track, 3 ft . 10 ins. The Mendip Motor and Engineerivg Works, Chewton Mendip, Somerset. | £255 | $\underset{1919}{\text { March } 8_{1}}$ |
| MERCURY | 64 by 102 | 1312 | W.C | 10 | 4 | $\begin{gathered} 2 \text { and } \\ 3 \end{gathered}$ | Three speeds and, feverse, final drive by bevel. Wheelbase, 9 ft . Track, 4 ft . Mercury Cars, Ltd., May Road, Twickenbam. | $\begin{gathered} £ 375 \\ \text { Coupe£465 } \end{gathered}$ | $\begin{gathered} \text { March } 1, \\ 1919 \end{gathered}$ |
| METEORITE | 66 by $109 \cdot 5$ | 1498 | W.0 | 10 | 4 | 2 | Three speeds and reverse. Final bevel drive. Dynamo lighting. Meteor-Motors, Ltd., 142, Uxbridge Road, Shepherd's Bush, W. | £450 | $\begin{gathered} \text { July } 19, \\ 1919 \end{gathered}$ |
| MILTON |  | -- | w.c. | 9 | 2 | 2 | Friction drive and final chain. Two-stroke engine. The Lanark Motor Co., 109, North Vennel, Lanark. | £150 | $\begin{gathered} \text { Jan. } 18 . \\ 1919 \end{gathered}$ |
| MORGAN | 85.5 by 85 855 by 85 | $\begin{aligned} & 976 \\ & 976 \end{aligned}$ | w.c. | 8 +8 | $\frac{2}{2}$ | $\begin{aligned} & 2 \\ & 2 \end{aligned}$ | J.A.P. engine. Transmission, shaft and chain, 2 forward speeds. Wheelbase, 6 ft . Morgan. Motor Co., Ltd, Worcester Road, Malvern Link, <br> Grand Prix <br> De Luxe (A.C.) ... <br> De Laxe (W.C.)... | Sporting <br> £145 <br> $£ 150$ <br> 2150 <br> £160 | Nov. 25 , 1918 |
| PALLADIUM | ع9 by 107 | 1330 | a.c. | 10 | 2 | $\left\|\begin{array}{c} 2 \text { and } \\ 4 \end{array}\right\|$ | Friction drive. Final by chain, no differential. Wheelbase, 8 ft .6 ins. Track, 4 ft . Palladium Autocar Co., Putney, London. <br> 4 -seater <br> Coupé | 2-seater 275 Gns. 295 Gns. 365 Gns. | $\begin{aligned} & \text { Oct. 4, } \\ & 1919 \end{aligned}$ |
| PEUGEOT (French) ... | 66 by 105 | 1437 | w,c. | 10 | 4 | - | Four speeds and reverse, final drive by worm. London Agent, 10, Brompton Road, London, W. | Not settled | $\begin{gathered} \text { March } 15 \\ 1919 \end{gathered}$ |
| PREMIER | 80 by 105 | 1055 | .c. | 10 | 2 | 2 | Three-wheeled runabout with twin V engine: Three speeds and reverse. Final drive by single, enclosed chain. Coventry Premier, Ltd., Coventry. | about£210 | $\begin{gathered} \text { Oct. } 25 \\ 1919 \end{gathered}$ |
| RICHARD SON | 85 by 85 | 961 | .c. | 8 | 2 | $\left\|\begin{array}{cc} 2 & \text { and } \\ 3 \end{array}\right\|$ | Friction drive. Four speeds and reverse, final chain drive. Wheelbase, 6 ft .9 ins. Track, 3 ft .10 ins. C. E. Richardson and Co., Ltd., Finbat Works, Aizlewood Road, Sheffield. | £200 | $\begin{gathered} \text { June 7, } \\ 1919 \end{gathered}$ |
| S.H. | 60 by 110 | 1244 | w.c | 10 | 4 | $\begin{gathered} 2 \\ 2 \\ \hline \end{gathered}$ | Four speeds and reverse: Dynamo lighting and starting set. Collett Macdonald, 19y, Piccadilly, London, W. 1. |  | $\begin{aligned} & \text { ug. } 2, \\ & 1919 \end{aligned}$ |
| SINGER | 63 by 88 | 1096 | v.c. | 10 | 4 | 2 | Three speeds and reverse; transmission-shaft; dynamo lighting. Wheelbase, $7 \mathrm{ft}, 6$ ins, Track, 3 ft . Weight, $10 \frac{1}{3} \mathrm{cwt}$, Singer and Co., Ltd., Coventry. | Phaeton <br> $£ 400$ <br> coupe | $\begin{gathered} \text { uly } 12, \\ 1919, \end{gathered}$ |
| SPEEDY |  |  | a.c. | 8 | 2 | 2. | Two speeds and reverse. Electric lighting. Final drive by belt. The Pullınger Engineering Co., Latona Road, New Cross, Loudon, S.E. | $\begin{gathered} £ 500 \\ 110 \mathrm{gns} . \end{gathered}$ | $\begin{aligned} & \text { Sept. 20, } \\ & 1919 \end{aligned}$ |
| STANDARD ... | 62 by 110 | 1328 | w.c. | 9.5 9.5 | 4 | $\left\lvert\, \begin{gathered} 2 \\ 2 \end{gathered}\right.$ | Iwo-seater and tour seater. Three-speeds and reverse. Standard Motor Co., Ltd., Coventry, | 2-seater Not settled 4-seater Not settled | $\begin{aligned} & \text { June } 7 . \\ & 1919 \end{aligned}$ |
| STELLITE ... | 62 by 89 | 1074 | w.c. | $9 \cdot 5$ | 4 | 2 | Three speeds and reverse. Final worm drive. Electric and Ordnance accessories Co., Ltd., Ward End Works, Birmingham. | £285 | $\begin{aligned} & \text { June } 7 \text {; } \\ & 1919 \end{aligned}$ |
| S | 63 by 90 | 1122 | w.c. | 10 | 4 | 2 | Three speeds and reverse, final drive by bevel. Dynamo lighting set. Swift of Coventry, Ltd. | $\begin{gathered} \text { 2.seater } \\ \text { £375 } \end{gathered}$ | - |
| TRIDENT | 60 by 90 | 509 | . | 8 | $2$ | 1,2 or 3 | Three-wheeler, two-seater, tandem, front wheel drive, three speeds, cantilever springs. Federated Exporters, Ltd., 11, Haymarket, | 2160 | June 29, 1919 |
| WILTON (1920 Mode]) WOOLER | 69 by 100 | 1496 | w.c. | 11.9 | 1 | $\left\|\begin{array}{c} 2 \text { and } \\ 8 \end{array}\right\|$ | Three speeds and reverse, final worm drive, dvnamo ligliting. Wheelbase, 9 ft . Track, 4 ft . Weight, $11 \frac{1}{3} \mathrm{cwt}$. Wilton Cars, Ltd., 180-4, High Street, Tooting, S.W., 17. | 2-seater \&410 4 -seater \&430 coupe 8450 | $\begin{aligned} & \text { Oct. }{ }^{4}, \\ & 1919 \end{aligned}$ |
| MULE | 85 by 90 | 1018 | a.c. | 10 | 2 | 2 | Three-wheeler. Horizontally-opposed air-cooled engine, triple belt drive, final drive by shaft and room. Wheelbase, 6 ft .6 ins. Track, 4 ft . Wooler Engineering Co., Ltd., Alperton, London. | ¢130 | Feb. 8, 1919 |

This list will be amended and added to as further particulars are released.


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## 

2.4.


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Below are a number of items taken from the list exhibited at our Stand: Lamps, Horns, Mascots, Clocks, Pumps, Mirrors, Goggles, Tool and Repair Equipments, Step Mats, Interior Fittings, Electrical Accessories, etc.

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is the only Greaser Bolt on the market which compels the grease to go where it is wanted: the expanding spring gland ensures it All others allow the grease to

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## M.P.G.

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of which over 40,000 copies have been applied for, and distributed in the past $2 \frac{1}{2}$ years, deal in a thoroughly practical manner with the problems of carburation and lubrication, particularly with a view to reducing consumption by simple methods.
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N comparison with other motor spirits National Benzole (N:B.A. Standard Specification) yields $20 \%$ more mileage and $15 \%$ more power per gallon. It costs less per gallon-gives you
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Wonderful in development, but impossible without Insurance. But how many people have realised the Insurance Factor in calculating progress? Insurance is more necessary to-day than ever before-but to be useful, Insurance must progress.

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The Licenses \& General Insurance Company, Ltd., 24, MOORGATE STREET, E.C. 2 .

## Olympia Sbow <br> Numbers <br> 

# Second SHOW NUMBER Wednesday Next (Nov. 5). Price 3d. 

FORECAST OF THE EXHIBITS

> In this issue the advance descriptions and illustrations of new cars and detail improvements will be continued, and as the opening day of the Show will be drawing nearer, interest will be all the keener. A feature of this issue will be a specially instructive article, entitled:-

## What to look for at the Show

Improvements which visitors to Olympia should make a particular point of seeing.

## Order Your Copy NOW.

Third Show Number, Complete Show Report, Wednesday, 12th Nov.

# SECOND-HAND 

AND NEW

## LIGHT CARS, CYCLECARS, and ACCESSORIES FOR SALE

"The Light Car and Cyclecar" deals with its own tynes of machines exclusively. Otd cars productd before 1912 as distinct from modern light cars, and cars with an engine of a cubic capacity exceeding 1,500 c.c., cannot be accepted for its advertisement columns.

## RATES.

For Private Advertisements in this section: eighteen words, $1 / 6$ (minimum), 6d. per six words after. The Rates for Trade Advertisementsare 18 words $2 /-$, and 6 d . per four words after. These are designated "TRADE," for the guidance of the reader. Subject to a discount of 5 per cent. for 13 consecutive insertions, to per cent for 26 , 15 per cent. for 52 . Terms: Cash with order, and otherwise net. Cheques, Postal Orders, etc., should be crossed and made payable to Temple Press Ltd. N.B.- In the interests of our readers we shalt not hesitate to take proceedings against any persons in the trade who succeed in obtaining the insertion of their advertisements as " Private" and shallinsist to the utmost upon the payment of all law costs incurred.
BOX NUMBERS.-Advertisers desiring to have replies sent care of "The Light Car and Cyclecar" may do so on payment of a nominat fee of ti. to cover booking and cost of forwarding such, replies. The words Box the advertisement.

## DEPOSIT SYSTEM.

For the convenience and security of our ceaders we have an approval-deposit system. The intending buyer forwards to vur oftice the amount of the purchase money, swhich will be acknowledged to both parties. Notes or money ordel save time, Cheques must be made payable remple Press Lid. and are acknowledged to sener agreed upon. If no sate is made, we return the amount dell...ited. In either case we deduct a commission of $1 \frac{1}{2}$ per cent. $3 d$, in the $t, 2 \dot{d}, \mathrm{minimum}$ ), on amounts
 amounts exceeding ElU0, to coverour expensesof bools ng, postages, etc. Cauriage is to be paid by the buyer. If the article is returned, each party, 'ils s one way. The
risk ofdamage in transit is the seller's. Articles on anprovaiare not to be reiained more than three djys, unless by arrangement between the partus. All disputes to be settled by the arbitratson of the fiditor of TATE LIAHT CAR AND CYCLECAR: whose decision shall be final and binding on both parties.
WARNING.-Acknowledgments of depusits or instructions to forward goods advertised are only written on our special headed paper, which bears a facsimile of
the title of this journal. To prevent fratd, the advertiser should AckNO W. the title of this journal. To prevent fratd, the advertiser should AcKNOW: forwarsing the goous for a day or so. Should we, on receiving such an acknowledgment, find that no letter has been sent by us, we will wire the advertiser nut to part with the goods advertised.
DISPLAY ADVERTISEMENTS. Scale of charges, with reduction for series, sent on application.

## REGULATIONS WITH REGARD TO ADVERTISEMENTS.

## All advertisement orders are subiect to contirmation in writiog from the Head

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a current contract or to refuse to pay for the same or for taking action for breach of contract.
Advertisements received too late for insertion in the issue then closing for press the following issue.
Whilst every precaution is takea to ensure accurate printins, the Publishers will not be responsible tor brinter's errors. nor will they be responsible for, advt.
Copy for, and all matter relating to, advertisements must reach
the offices first post Tuesday, and shoudd be addressed to THE the offices first post Tuesday, and shouid be addressed to THE MANAGEK, "IHE LIGHT CAR AND CYCLECAR," 7-15, ROSEBERY penve, LonDon, E.C.Is to whom all communications concerning advertisements should be sent. If proof of displayed advertisements is required, copy should be forwarded in sufficient time to allow of it being submitted and returned.
Head Offices: $-7-15$, Rosebery Avenue, London, E.C.1. Telephone No, 5292 Holborn (four lines). Telegrams: "Pressimus. Phone, London."
[Addresses of Branch Olfices and other Business and Editorial Notices will be found on the last page of this section.]

## NOTIGE.

Owing to postal delays and irregularities, it is advisable to post advertisements EARLV ON MONDAY so as to ensure, as far as possible, that they reach $4 S$ oy the FIRST POST on Tuesday. Lately several advertisements have been received too late for inclasion, athough despatched on Monday.

## SECOND-HAND <br> LIGHT CARS AND CYCLECARS FOR SALE.

A.-c. Sociable, splendid little 2 -seater, 5 - 6 hp , Bosch magneto, nearly new tyres, hood, soreea, eloctivc ligbting, any inspection, any trial, great bar. Gaju, 69 guineas; exchange motorcycle or combination; also easy terns. Wavdorth Mion Exchange, Ebner St., Wandsworth (Town station). Trade 362-203 A.c. Sociable, good condition, 2 new tyres, hood, screen, 5 lamps, spare, 362 , A.-C., $10 \mathrm{hp}, 1914$, purchased January, 1915, stored 3 years, electiric sice and rear lampa acetylene headlamps, hood, screea, double dikey, specral luggage grid. $5{ }^{\circ}$ detachable diso wheels, tyres goud, thoroughly overhauled
 A.-c. Sociable, excellent condition throughout, hood, screen, lamps, new back tyre and chain, £80; trial. Box No. 2919. c.0. The Light Car and Cyclecar," or PPhone, North 129.
A.-C., 1915, 10 hp , 4-cylinder, spare wheel, lamps, hood, screen, etc., painter blue lovely oondition, any trial, take combination part exchange ${ }_{362 \text { eckis }}$ A.-c. Sociable, dickey seat, hood, screen, 3 lamps, horn, etc., excellent condition, engine recently, overhauled by makers, \& 80 . J. Howard, Nor-
ton-in-the-Moors, Stoke-on-Trent.,
362 -c691
A.-c. Sociable, splendid condition, wheel steexing, electric lights, pumerous A.C. Sociabe, spendid condition, wheel steering, electric New Town, Sirat-
spares, hood and screen, lowest \& 85 . 24 Manley Rd., New
foral.
A.-E. Sociable tor baje, excollent oondition, modern type, hood. Ecreen, lamps, £75; trial given. 29 Allsop St., Upper Baker St., London. N.W. I. A-c., 1914, $10 \mathrm{hp}, 2$-eeater, with detachable wheels, dynamo Tradingish-bord, screen, hord, etc., perfect condition, £335. 32a Chester St. Grasvenor
Pl, S.W. Vic. 5837 . A.C., $1916,10 \mathrm{hp}, 2$-seater and dickey, C.A.V. lighting set, $£ 425$. Eelow. A.-C., $1915,10 \mathrm{hp}$, s-seater, C.A.V. tighting set, £ 365. Alfred Wastnage,
65 Gt. Portland St., W. i. Tel., May. 3005. A.-c. Sociablo, with spare seat, perfect condition, hood, side screcns, lamps, speedometer, 2 brakes, tools, etc., \&80. Seen by appointment. Adcerson, to Chalsey Ra., Brockey, B.E.
A..C., 1914 , 2 -seater, dickey, electric side lamps, a cetylene head, detach
 Mdme. Tussands.
A.-C., 1915, 2 -seater, dickey, 5 lamps, detachable wheels, very, smart and excellemt corldition, worn Tracle 36z-c63: ALLDAYS, $1914,10 \mathrm{hp}$, 9 -seater with dickey, dynamo lighting, detachable wheels, horn, speedcraeter; etc., excellent order, £325. 32a Chester
St., Grasvenor Pl., S.W. Vic. 5837. A.Y. Allen Bemnett Motor Co. offer a pradtioally brand new 1919 monocar,
zilis. 0 , 10,11 Royal Parade, London Rd., Croydon. A.V. monocar, 1919, as new, red, fast, first offer over $£ 130$ socures. ${ }^{\text {Apply }}$
Castle, Henley House, Frant, Sussex.
A.V. monocar, 1919, painted red, 2 electric side lamps with accumulator, Klazon horn, hood, mat, run under 250 miles, accept $£ 110$. Major Oakes, BABY PEUAEOT, 1916, 3-speed, re-upholstered and repainted, excellent
 BABY PEUGEOT, 1916, 3 -speed, 4 cylinders, hood, screen, speedometer, good condition, £2i20, or offer, must sell. Hubbort, Hopewell, Gt. Kimole Backs.
BEBE PEUGEOT, 1914, in fine running order, Stepney, 5 new tyres, elec tric light, spare tube tools, speedometer, economical and fast, $\{230$
Nicholls, 61 Station Rd., Harlesden, N.W. 10 . BUGATT1, 10 hp . latest model, sporting 2 -seater with bulbous back, C.A.V lighting set, Warland rims, an excentionally fine car, property of a prt vare owner, and can bo soen and tried at any time at Alfred Wastnare. r.ALCOTT, 1979, 2 seater, dynamo lighting, very fine condition throughout, dono smain miseage Maysair 3129 . CALCOTT, 1919, for sale, onlv done 30 miles and delivery, C.A.V. lighting, standard dickey, Zenith, brand new, $24 / 0$ or nearest oiter. Box 362 - 538 2926, c.0. "The Light Car and Cyclecar.
 CALCOTT, 1919, 2 -seater and dickey, dynamo lighting set, only run 600 mile, practically new. Below.
CALCOTT, 1919, 2 -seater, dynamo lighting set, clock and speedometet, mileage 2,000, in perfect, condition. Alired Wastnage, 65 Gt. Portland St., W. 1. Tel., Maytair 3005.
CALCOTT coane, $10 \mathrm{hp}, 1919$ model, royal bifue, Bedford cord upholstery, Beolt dynamo, lighting
mileage, as new. Below.
CAICOTT, ThD, 1919 model, 2-seater, grey, black wings, Brolt dymario fighting, leather upholsterg, fully equipped, as new, only done 300 milts. Mebes and Mebes, The Original Light Cal Specialists, 144, Trade $362-208$ land St., W. 1. Tel., 3426 Maytair.
CALCOTT, 1995,2 seater, dickey, dynamo, detachabte wheels, rery amarb
 saudsa

Readers are veferred also to "THE MOTOR," withich contains each week many hundreds of advertiscments of new and second-hand cars. "THE MOTOR" is publishea on Wednesdays, price 3 d .

## NEW CARS.

## Advertisements of NEW Light Cars and Cyclecars now appear under a separate heading.

## SECOND-HAND

## LIGHT CARS AND CYLLECARS FOR SALE

 (continued).CALTHORPE. F.O.C.H. have a late model 2 -eeater, with dickey, fully

 steail Tube). 'Phone, Hempsstead 3752 . - Trade $362-143$ CALTHORPE, 10hp, 1919, sports type 4-seater, enamelled white, black winss, Brolt dynamo lighting, Palmer cord tyres, disc wheels as new, Spleciąlists, 144, 1546 Gt . Portland St., W. 1. Tel., 3426 May fair. Trde $362-209$ CALTHORPE compe, 1915, dickey, dyuamo, all accessories, £400, 12 Corrwali Tenrace Mews, Mdme. Tussaud's.

Trade $362-6355$ CAI-THORPE, 1918, sporting 2 -seater, 5 dice wheels, detachable, dynamo Jighting, petrol gange, heat resister, tool box, electric horn, extra air, cream and black, porfect condition, $f 475$; owner buying langer car. Seen Lon application by letter to Capt. Shipwright, Olaridge's Hotel, Brook St. 362 -c608 CALTHORPE, sporting 2-seater, delivered this month, best offer over list. Rice-Oxley, Shrewsbury. $\quad 362$-c629 CALTHORPE MINOR, 1916, 2-seater, dynamo lighting, new condition, vury smart little car, む340. Ward, 6 'Ghurch Rd., Forest Hill, S.E. ${ }_{362}$-c655 CALTHORPE MINOR, 1919. slandard 2 -seater, 3 months from works, perfect runuing coudition, £475. Shailer, The Terrace, Spilsby. 362 -60 CARDEN 1919 monocar, second-山and; another, 1919, with seond seat;
Traders? Railway Garage, Staines. 362 -es75

Trade 362 -es75
CROUCH 2-seater, 10 hp , complete with hood, screen, lamps, spare wheel, etc. $£ 260$; demonstrator in stock. Order now for speedy delivery. Solo
agent Manchester district, Hugh Dobson, 39 Dean Rd., Blackiriars, Sulford. Phone, 7264 City.

Trade $370-895$
CROUCH, 1914, 2-seater, hood, screen, Stepney, speedometer, horn, ${ }^{4}$ lamps, generator, full insurance. tools, jack, pump, etc., all in excellont CUMBPIA 10 hp cyclecar, iive axle, 3 speeds and reverso, new and repainted sporting 2 seater body, very last, electric side and tail and Pcetylene head, only done 200 jnillos. $27 a$ Ashchurch Grove, Shepherd's'
Bush. ENFIELD Autolette, 5 wire wheels, interchangeable, 1914, £180. Southgate Garage, Gloucester. GLOBE, 2 -seater and dickoy, new tyres, refliable, strong, camfortable car, 363 ef03
J100. 276 Wijlesden Lane. G.W.K., 1914, 2 -seater, special fitting all round rims, like brand new model \&.185. J. Smith arid Co., 16 Hampstead Rd., Londcn, N.W. Trade 362-169 G.W.K., 1913, chassis and body, complete new engine, cardan shaft and main bearings, hood, screen, speedometer, Stepney, lamps, etc, in splem-
did condition, $£ 140$ - B. Richards, 6 Church St., Welling ton, Salop. 362-c613 G.W.K., 191t, 2 -seater and dickey, private owner, thoroughly overhauled
 G.W.K., late 1913-14, fitted cork disc 700 by 80 tyres, all lamps, hood new, overnauled and painter, fulk insurance, 245 Biake, 216 West-
bourne Grove, W.11. Phone, Park 3232. G.W.K., 1913, 2-seater, excellent condition, complete with hood, screen, Stepney, lamps, speedometer, jack, pump, clock, etc., £220. Irving, 52,
Dinorwic Rd., Birkdale, Southpont.
362 ce 653
HILLMAN, 1919, new July, 2-seater, dynamo, starter, mileage only 1,300 , ready for the road, s560. Below.
HILLMAN, 1916, 2 -seater, dynamo, starter, dickey, 2385. Smith and HunHUMBERETTE, 1914, air. conled, hood, screen. lamps, excellent condition throughoue, trial given, bargain, £13.. 29 Alisop St., Upper Baker St.
Iondon. N.W. I.
Trade 362-b817 HUMBERETTE, 1914, a.-c., splendid condition, can be seen by appointment and trial given, only reason for selling larger car necessary, $\mathbf{~} 150$.
$\mathbf{V}$. C. Badois, 68 Hign St., Egham.
zz- 12
HUMBERETTE, 1914, a.-c., hood, screen, Stepney, bet acetylene lamps, horn, tools, engine just rebushed and overhauled, in beautiful order, £10 or near offer. Seen at Wilkins and Simpson, il Hammersmith Rd. 362 -c668
HUMBERETTE, 1915, water-cooled, hood, screen, lamps, speedometer, Thorn, watch, newly painted, good ranning order, £150. Sandwith,
Lowood, Ascot,
HUMBERETTE, water-cooled, 1913, 2 acetylene headlamps, 2 oil, side and lail, Stepney with tyre, 5120 , can be seen and tried by appoint-
ment. Wilson, Woolley Farm, Wantage, Berks.
H!'MBERETTE, 1914, a, -c., 2-seater, hood, screen, lamps, Stepney, clock, spaidoraeter, jack, tools, pump, ete, tyres in excellent condition, smart, litrle car, painted black and yellow, owner receiving new car, trial, 2145 . 362 -c666
14igh St, Chathan.
HUMBERETTE, 1914 (late), 2 -3-seater, 3 -speed and reverse, lamps, horn, hord, sereen, Stepney, i new tyres, reerently thoroughly overhauled, any trial arranged, \&140. Cecil Auddrey, Plymonth Honse, Loughton, E.Esex.

## SECOND-HAND LIGHT CARS AND CYCLECARS FOR SALE (continued).

HUMBERETTE, a.-c., in good order, £120; offers cash or exchange cone kidered. Baines Bros., Gainsborough HUMSERETTE, latn model, a.-c., very emart litule car, electrio lighting, hood, sorean, speedometer, mirror, spare tyre, eoonomical to run, in fimst-
class condition, trial run, $£ 150$. 18 Wherstead Ru., Ipswich.
$36 i-c t i 40$ HUMBERETTE chassis, water-cooled, in capital condition throughout,
 HUMBERETTE, 1914, w.e.., 3 speeds and reverse, hood, screen, clock, speodomecer, rMiler's lamps and generatox, Stepney, jack, pump, horn, Dunlop tyres, jacked up 3 years, smart little car, perfect condition, £175; KENNEDY, 11.9 hp , light car, splendid mechanial condition, just overtauled, 5 detachable wheels, tyres perfect, hood, screen, lamps, dickey LAGONDA 1915 coupe, dynamo lighting, many extres, £245. Also similar car, without dynamo lighting, \&225. Smith and Hunter, 77 Great Portland St.

Trade 362-190
LAGONDA, 1919 model, 4 -seater, green, black wings, green leather upholstery C.A.V. dynamo lighting, speedometer, electric horn, detachable Wheels, Dunlop tyres, fully'quipped, done 100 miles. Mebes and Mebes, Tel., 3426 Maytair.
LAGONDA conpe, 1916, acetylene head, oil side and tail, detachables, in goord order, nearest $£ 250$. Oddie, Calshaw, Yellowhouse Lane, Southport. LAGONDA 2 -seater, 11 hp car, 1915 model, with 5 Sankey detachable wheels, ace.ylene lighting, completely overhauled by makers, re-coach painted, an The Cottage, Bayley's Hill, Serenoaks. 362 -c692
McKENZIE, 1914, 10 hp , 4-cylinder, 2-seater with hood, screen, detachable wheels, 5 lamps, clock, speedometer, etc., privately owned, good order
thronghout, \&245. 323 Chester St., Grosvenor Pl., S.W. Vic. 5837 . MENDIP, 10 hp , 1919 model, 2 -seater, grey, black wings, double dickey seat, speedometer, clock, 5 lamps, detachable wheels, fully equipped, as new, done ${ }^{290}$ miles. Mebes and Mebes, The Original Llight Car specialists, MORGANS. Hall's Garages, Ld., Stevenage, Morgan specialists. Repairs and overhauls
MORGAN, 1914, G.P., J.A.P. 8hp, side valves, water cooled, 700 by 80 tyres, new all round, large headlight and generator, new hood and screen, perlect condition throughout, offers wanted. M. McNish, Ferndale, ${ }_{362}$ st. Neots, Hunts.
res un
MORGAN, J.A.P., 1919, sporting model, splendid runsing order. tyres unpunctured, painited dark grisen, acetylene headlamps and rear light, hood,
soreen, etc., calh prica
e200. Box No. 2626. c.o. "The Light Car and sarecn, e
Cyclecar.'
MORGAN, 1919, arr-oooled M.A.G., eporting, absalutely complete, hood, screen, horn, speedometer all lampe and menerawor, spare rhain anc nbe, complete tool-kit, spdended condition, ${ }^{2} 220$; inspeotion and trial by MORGAN, 1914, sporting, A.-o. J.A.P., thood. screen, etc., recently overhauled. \&iz. Morrell, 23 Finchley Way, Brent Garden Village, Church MORGAN 1916, G.P.., w.-c., fitted speedometer, 3 lamps, tools, filis.
Grant. If Manson Mews, B. Kensington.
MORGAN, 1919, de luxe, painted violet, dions, hood with coover, soreen, head and tail digihts, usual epares, perfect running order, any trial, very fast sporty oar, \& 240 or near. Box No. 2918, c.0. "The Ligit Car 362 and
MORGAN, G.P., 10 hp , o.h. ₹., W.-c. J.A.P., gereem, horn, disce, speedometer, electrio ilghts, oversizo tyres, pacinted blue, in splendid condition, beet offer over \&175. Shelley, Manor House, Tittensor, Staffis, or cann be seen by appointment in Iorigton.:
MORGAN, de luxe, 8hp a-c. J.A.P., 1919, with 1920 improvements, hinged back, long shaft, ratchet side brake, acetylene head and tail lamps, discs, pare ohain, tube, etc, perfect condition throughout, very smart turmout,
Ireland, 19 Bowness Rd., Barrow-in-Furness. MORGAN, 1916-17, Grand Prix model, dise wheels, overeize tyTes (unscratched), large lighting set, epecial easy-starting carburettien, giving 6 mip.g.o dank purpile finish, aboblutely untarnished, a super-miorgan, canHolles House, Ledbury. MORGAN, G.P., 1917, M.A.G. engine, Binks carburetter, new gears, 3 wil and 1 acetylene Larmps, hood, spares,
MORGAN, J.A.P., a.-c., 1919 (June), hood, lamps and Klaxon as new 200 guineac, defiver 100 miles.-P. M, Head, 36 Church St., Altrindiham. 362 -c626 MORGAN, Shp w.-c. J.A.P., late 1914, thoroughly overhauded, recently painted dark green, new leathor upholetery, new hood, windscreen, 3 new tyres, spare chain, ideal winter runabout, genuine bargain, $£ 160$, no
362 -cc339
offens. Allen, 4 Pembiury Rd., Ionbridge.
MORGAN, J.A.P a.-c., new July, 1919, hardly rum in, hood, बcreen, diso wheels, electric lamps side and rear, acaitydene headiamips, foot pump, spare tribe and other extras owner gone to college, £215. Letiers, Wood-
ing, 3 Vernon $S t .$, Northampton,
MORGAN, 8 hp . 2 -c. J.A.P., $19141 / 2$, sporting, unused $31 / 2$ years, just over hauled, hood, screen, clock, spares, beadiligghts and generator, tyres, good,


MORGAN, 1919. sporting model, long chassis, 8hp J.A.P. engine, hood, screen, finishod red, black guards, practically now, £235. Below.
MORGAN, 1919, special Grand Prix model, 8hp water-cooled J.A.P. enan aero obreamine boay, staggered seating speedometer, diso an exaeptionally fine

Trade 362-16.

## SECOND.HAND

## LIGHT CARS ANL cYCLECARS FOR SALE (continued).

MORGAN, 1916, ercollent condition, spares, lamps, screen, hood, little used,
MORGAN, 1919, sporting, acetslene lighting, new July, rum 500 milos
MORGAN, aporting, 1917, 3 lamps, nearly new tyres, usual accessories, £185. Smith and Hunter, 77 Gt. "Portland St. Trade 362-189 MORCAN, 8hp, a.-c., sporting model, new May, 1919, splendid order and conditroll like new, best olfer over z200. R. Kiby, Kempsey, Worcester. MORGAN,G.P., 1918 , 8 hp w.c. J.A.P. Eneciad Royal blue finish, Stewart trip speedometer, new 6-volt electric head, tail lamp set, "petrol carrier, tion perfect, trial by appointment, f2l5. S .Stratton, 88 Myddeton Rd. Bowes Park, London.
MORRIS-OXFORD, 1914, 2 seater, hood, acreen, horn, lamps, otc. in A1 runaing order,'£280. 12 Cornwall Terraw Mews, Mdme. Twesaad's.

## MORRIS-OXFORD, 1915, 2-seater, 2 gpare wheels, Lucas dypamo light

 ing. This car is an exception in condition, only wants seeing, $\mathcal{E} 36 \tilde{5} . \mathrm{J}$.Smith and Co., 16 Hampstead Rd., London, N.W. $362-167$
PERRY, 1914, Sto, repainted grey with bleck wings, aluminium number plates, spare wheel, etc., good mechanical condition, very smart little car PERRY, 8hp, 1314, Lucas dynamo speedometor aloctric horn, very stoart PERAY, 8hp, 1314, Lucas dynamo, speedometer, electric horn, very smart
appearance, thoroughly reliable, £210. Bradfield, Astolat Cottage, West
PERRY, 1915. 2 -seater, in perfect condition, coa.ohwork as new, lamps and All accessories, 5 new tyres, $£ 250$ or near otter. Hoxler, 21 Beaconsfiel
PERRY, 1914, 8hp, 5 detachable wheels, speedameter dmamo li tyres nearly new, paintwork good, does 50 moiles per gailon, most reaiable little car, £225. MacDonald, 17 Shaftesbary Rd., Eaxdsdon, Ooventry.
PREMIER Sociable, 2-seater, 6-8hp, water-cooled, excellent condition, Hi, 287. 23 Allsop st., Upper Baker St., London, N.W.1. Trade 364-c62 AILEY 1914 cyclecar, 2 -ecater, $10-11 \mathrm{hp}, 2$ cylindens, d.-c., wheel eteeriag, radiator: 3 epreeds, reverse, screen, horn, lamps (electric lightingl, atc, oversize tyres (Dunilop), real car springe, Joom for dicker, takes any hili,
re-cnameilef, frst cheque $£ 95$ seoures, reail bargain; private owner, sell.
 ing on account of aerions illness and has to give up motoring. Arply, 14
RITZ, $10 \mathrm{hp}, 4$ cylinders, $W \cdot$ c., new Norember, 1916, mileage $\mathbb{Z}, 000$, hood, screen, side ourtains, speedometer, Stepney, electric lighting, 2 new tyres,
perfect order, spares,
26220 . 159 High St., Stourbridge. SABELLA cyclecar, tandem 2-eater, 8 hp J.A.P. engine, 2 speeds, etc.,
ET5, bar gain. Railway Garage, Staines. Phone, 139 . SINGER light cars. Phaeton, £400; coupe, £500. Particulars of delivery Centrial 13173.
SINGER, late 1916, 10hp, 2 -seater, dickey, dynamo lighting, complete out-
 N. $\operatorname{SINGE}$

SINGER, MT, G. N. Higgs now reffers for sale his well-known Singer coupe, which is. without doublt the smartest and best-equipped light car on the road, being at the samf time roony and exceptionally comfortable. It is in perfect mechantual condition, and has proved itself an extraordinary hill-climber, It is fitted with a petrol tank at the rear of the chassis, and the petrol feed is Autovac. Dynamo lighting and special large size Thomson-Bennett magneto, etc., etc. A thoroughly redoes 35 miles per galion. Price $£ 600$. 31 Vauxhall Bridge Rd., Victoria,
Trade $362-182$, SINGER, 1916, dynamo lighting, splendid running order, just overhauled, Wner bought new car, £366. Pannett, 55 Ashworth Mansions, Elgin Ave., W. 9. Phone, Hampstead $6 / 29$.
SINGER, 1917, $10 \mathrm{he}, 2$-seater, Rotax dynamo lighting, disc wheels, very small mileage, £360. J. Smith and Co., 16 Hampstead Red., London,
N.W. SINGER, 1914, complete. 5 wheels, dickey, Rotax lighting set, auxiliary tank, extna air, excelient condition, owner driven, $£ 300$. 18 Northwoon
Rd., Stanstead Rd., Forest Hill, S.E.
362 .c6 68 SINGER, 1914, limpusineocupe, dynamo lighting and starter, in sound running order, £375. 12 Cornwall Terrace Meww, Mdme. Tussaud'c.
SINGER, 1914, 10hp, 2-seater, good onder and condition, dynamo lighing electiric ionn, aill acosesories and same sparee, 4 good tyres and 2 unused ro treads, privatu owner, $£ 285$. Apply, Salter's Garage, Alibany Crescent,
362 -c615
Claygate SINGER, 10hp late 1915, 2seater, with dicier, 5 santer wheels excellent condition. all accossories, any trial, £360. H. R.. 48 Wandeworth Bridge S.W

SINGER, $1919,10 \mathrm{hp}$, 2-seater, electric Iighting and starter, dickey, speedomeater, electric and apecial buib hormas, 2 steel-atudded and 3 grooved tyres, dellvered September, Luff, Holmileigh, The Mourt, Shirewsbury. SINGER, 1918, 2 -seater, dynamo lighting, detachable wheels, periect condition. Seen and tried St. Martin's Motor Works, 11 and 12 Upper St.
Trade
Martin's Lane, London, W.SINGER, October, 1919, 2 -seater, dynamo lighting sell-starter, etc., mileage under 300 , absoluteiy pon fect, unscratched, fifio. or best offer; ; taking
SINGER. 2 -seater, 10 hp 1913, just overhanled and repainted French grey ined black, 5 detachable wheels, 5 electric aud acetylene lamps, 2079 gre best offer, genuine. Foxacre, Branksomewood Rd., Fleet.
SINGER, in first-rate meohanical condition, 2 -seater, adjustable wheels, Rotax lighting set, painted grey, black wings,, owner purchasing car, price
Ens50. R. F. Fuggle, Ld., Edgware.

SECOND-HAND

## LIGHT CARS AND CYCLECARS FOR SALE

 (continued).SINGER, 1915, 10hp, 2-seater, dynamo lighting, sphendid condition, can be SINGER, 1919, 1 (hip, makers ${ }^{\circ}$ No. C4633, complete as new, celf-stanter, etc., only done few hundrud miles, owner ordered abroad, any inspertiou,

SINGER, 1918, $10 \mathrm{hp}, 2$-seater, detachable wheels, dynarmo lighting, horn, 3 lamps, etc., splendid order, £365. 32a Chester St., Grosvenor Place, 8. W
SINGER, IObp, 1919 model, 2-seater, Rotaz dynamo lighting and selfstarter, buf, black wings,
done small mileage. Below.
SINGER, 10 hp , 1919 model, coupe, latest type body, battleship grey, green lins, black wings, Bedford cord upholstery, Rotax dynamo lighting $6 e t$, detachable whecls, seat covers, as new, done small mileage. Mebes and W. 1. Tel., 3426 Mayfair. Trade 362-214
 SINGER, 1919, 2 -seater, dynamo, starter, dickey, fauldess candition, run oniy 200 miles, £45. Below.
SINGER, 1917, oonspe, dynamo, usual extras, painted blue, upholstered cord, fi85. Below.
SINGER, $10 \mathrm{hy}, 2$ eeater, just repainted and overhauled, $\mathcal{L} 290$. Smith and
Hunter. 77 Gade $362-188$ STANDARD spare parts: everything for the 9.5 h p model. Pytchley Autocar Oo., Ld., $12 a$ Walmer Rd., North Kemsingtion, W. 10. Park 1299, Trade $370-812$
STANDARD. F.O.C.H. have a 9.5 hp, 2 seater, and dickey, in exception-
ally fine condition and azpearence as new, mechanically perfect, fully equipped, inoluding speedometer and mirror, detachable wheels and बppare, tyres govd, a bargain at £ 250 , only wants seeing: inspectian invited; a large selection of cars always in stock. F.O.C.H. 'iFair Offer Car House), ${ }^{5}$ Heath St., Hampstead (near Hampstead Tube). 'Phone, Hamp-
Htead 3752 .
STANDAPD 1919 , 119 bo , dyma
STANDARD, 1919, all-weather b
zoot dune 200 miles, $f 530$. Below
STANDARD, 1919, 9.5, open 2 -saater, dyamo lighting set, dickey seat

STANDARD, 1919, 9.5, open 2 -seater, dynamo lighting. eleotric horn, dickey seat, perfect condition, £ 100 . Box No. 2871, c.o. The Light Car and
cyclecar.

STANDARD, 11166, 1914 or 1915, 2-eater, in thorough good order, $£ 285$.
12 Corawall Terrace Mews, Mdme. Tussaud's.
STANDARD 1914 sete lighting, dickey, first choice of 2 , ذ 350 . Smith and Hanter, 77 Git. Portland St. $\quad$ Prst-edass order, STANDARD, $9.5 \mathrm{hp}, 1919$ model, 2 -seater, Standard grey, black wings, Brolt dynamo lighting, detachable wheels, fully equipped, as new, done smal mileage. Mobes and Mebes, Ithe Prigina1. Light Car Specialists, 144, Trade $362-212$
STANDARD, 9.5 hp , 2 seater and dickey, hood, with sides, spare wheel, speedometer. horns, lamps. Can be seen at Middlesex Auto-Car 362 -c524 STELITE 191
STELLITE, 1919, 2 -seater, dynamo lighting, dickey seat, run 200 miles. G. L. Francis and Co., 169 Shattesbury Ave. 'Phone, Gerrard ${ }^{3288}$ Trade 362 -161 STELLITE, 1910 model, 3 -epeed, special 3-seater clover-leal body, buff, Lucas dynamo lighting, speedometer, mirror, large tool box, spare petrol can carrier, detachable wheels, oversize tyres, fully equipped, fery neat ${ }_{1054-6} \mathrm{Gt}$. Portland St., W. 1. Tel., 3426 Mayfair. Mar Specialists, 144, STEMLITE, 19192 -seater, 3 speeds, dickey seat, electric lighting, delivered
 SWIFT, 1915 1014 , dynamo lighting, self-atarter, orily done 200 miles, absolutely ac new, unscratcaned, £493, Stretton and Smith, 23 Woodstock
St. toff New Bond St.), W.1. Mayfair 3129 .
SWIFT. Allen Benmett Mator Co. offer delivery from stock a particularly nice $7-9 \mathrm{hp}$ Swift, 1914 model, practically indistinguishabie fram new, tho oughly overhauled, staggered seating, dickey seat, inmpe and hors, ad ment-i motorcycic taken in exahange. 9, 10, 11 Royal Parade, Loidon ra.. Erown.
SWIFT, 2-seater, 7-9hp, late 1914 or 1915, privately owned and driven. Stepney, grod condition periect rumning order, price $£ 190$. Williams, 16
Upper Gulf Rd., Gorleoton-on-Sea.
$364-627$
SWIFT, 10 hp , 2-seater, 1915 , dynamo lighting. perfect condition. seen and triad St Martin's Motor Works, 11 and 12 Upper St. Martin's Lane,
Lrade $362-200$

SWIFT, Bha, 2-seater, double dickey, hood, screen, side cartaine, 3 lamps, oil, acetylene headlight, Stepney, pump, jack, tools, excellent running order and condition, frial, appointment, owner disabled. 15 | Greenh11 |
| :---: |
| $362-c 673$ |

SWIFT, 7-9, Julv, 1914, fully equipped, condition excellent, £195. Grant,
SWIFT, 10-12, 1913, 2-3-sester, dickey, 3 speeds and reverse, hood, screen, Wire speedomerer, elc., gery good condition, \&145, stored 3 jears. B. Richaods Tobacconist. Wellington, Salop.
SWIFT, 79 , purchased new from makers Maroh, 1915, splendid condition, nost reliable and careiully used car, complete with original acetylene idA lamps. Stepney, spare, best offer over £195: seen any time br eppoinc ment, South London. Box No. 2,91, care of The Light Cat and Cscle

## SECOND.HAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued).

SWIFT, 1919, new July, 10hp, 2-seater, dynamo, dickey, mileage 800, $£ 480$. SWIFT, 1916, 10hp, dynamo, starter, dickej, faultless order, exceptionally
smart cax, む38]. Below.
SWIFT, 1913-14, $7-9$, 2-peater, Stelpnoy, speedameter, Jamps,
and Hanter, 77 Gt. Portialnd St. WILKINSON light oar, 2-seater, i cylinders, water-sooled, R.A.C. rating 8.9, good'condition throughout, neary new tyres, 2 seli-contained Powel and Hanmer acelylene headiamps,

362 c6 11

## NEW LIGHT CARS AND CYCLECARS.

A.B.c. light oar. Main agents for Lincolnshire. Best and Son, 182 Clee-
thorpe Rd., Grimsby. Tel., Grimsby 2126 . A.-C., post-war models, Brighton, Worthing, Lewes, etc., book up
for early delivery. District agent, Turpin, 22 and 29 Fieston Rd., Brighton. Celivery. District agent, Turpin, 22 and 29 Pieston rade zzz-1 A.-C. 6-cylinder car de luxe. The Chester Motor Co., Ld., offer earliest A. 01 lik
A.c. 4 -cylinder light car. The Chester Motor Co. are now accepting orders in strict rotation for early delivery in 1920. Good second-hand A.-O. light cars can always be obtained Irom The Chester Motor Oo., Ld., 32a
Ckester St., Grosvenor Pl., S.W. 1. Vic. 5837.
A.-C. post-war modele. Alfred Wastnage. authorized agent, is now booking for the wonderful 12 hpp 6 -cylinder model and the 12 hh , cylinder model.
Early deliveries assured. 65 Gt . Portland St., London, W. I. Tel., May. Early deliveries assured. 65 Gt . Portland St., London, W. I. Tel., May.
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Stowell, 15 Porchester Gdnc., Bayswater, Loodion, W. 2.
362 .c521 CALTHORPE, 1919, Johp, standard 2-seater, as opecilication, with dickey, delivered last Saturday and unused, best offer over $£ 460$. Laff, Holmleigh,
The Monnt, Shrewbury. CARDEN monocars, awarded gold medal in J.C.C. reliability trial, 1919 unequalled for busipess or poleasure, 120 guineas, inside controls, 8 hp J.A.P. engine in front, Sturmey-Archer 3-epeed gearbox veat kick-otarter, weifht 3 cwt., consumption 85 m.p.g, call and take, trial run. Sole con. cessionoaires, The Railway Gaxage, Staines. 'Phone 139. Order your car
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DOUGLAS, latest 10hp post-war model, several exceptionally smart 2 . shorized London agents for Douglas cars and motoscycles, Vivian Hardio and Iane, Ld, 24 Woodstock St. (oit Oxford St.), Bond St., London, W, 1 Trade zzz-73
TPhone, Mayfair 6559 .

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DOUGLAS 1919 brand new lighit car, offere over list price, \&400. Box 1000,
ERIC CAMPBELL, winner of 1919 general efficiency trial; demonstration by appointment; book now for early delivery, price $£ 395$. Sole Kampshire Agents, J. Campbell (Christcharch), Ld. Tel., 49 Christchurch. Trade 372-33
C.N. cars, F.O.O.H are now booking orders tor early 1920 deliveries of this wonderful cyclecar, Standard and Vitesse models. Book your orders now for delivery next May and onwards. Our motto, " Strict rotation
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MORGANS. Potter. Morgan agent, Leinester Grove, Blackman Lane,
Leeds. Tyree, chains and accessories in stock. Repairs. Phone 2n78,

## NE W LIGHT CARS AND CYCLECARS

## (continued).

 Acre, W.C. ${ }^{2}$ (Talephone, Gerrard 2i92, Telegrams, "Obatacle, Rand, London, Lancashire, Escex, Wilts. and Dorset, Herts, and Ireland. Four-cylinder engine, b0 mm. bore by 110 stroke, aluminium pistons, 4 -speed-and-reverse gear, etc., polished aluminium bomaeth Houdainle shock absorbens to all wheeic, wheelibase 8 ft. 10 ins., track 4 ft . $11 / 2$ ins., ohassis
price $£ 495$; bodios desigmed to suit individual requirements. price £495; bodios desigmed to suit individual requirements; standard 2 starter: demonstration car available in a few days; early deliveries if starter; demonstratwon car avajlable in a lew days; eariy deliveries if
orders are booked ot once.
302 - 146
G. L. FRANCIS and CO., 169 Shattesbury Ave, authorized agents for the Sequeville-Eloyau light car, dyamo lighting, rthd self-starter, chassis
price \& 495 ; complete with 2 -seater body, $\& 50$. price ${ }^{\text {£ 495; complete with }}$ 2-seater body, £550. Early delivery dates
booked in strict rotation. SINGERS for Nottinghamshire. T, Shipside, Ld., Nothingham M' (10pposité
Victoria Station), also Daybrook, Nott.s.
SINGER. F.O.C.H. have a brand new 1919 singer, $2-3$ seater, actuaily in stork for immediate delivery, dymamo lighting, seli-stifirter. F.O.C.H.
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SINGER, 1919, 1Ohp, 2-seater, new, dynamo lighting, self-ctatter, spare Wheel, dickey etc., £445 or close offer. Singer, 1 King Edward's Grove, S§NGER, 1Ohp, dynamo lighting, self-stamter, dickey seat, ${ }^{\text {special car }}$ Well equipped, prompt delivery from works, £ 445 . Box No. 2,921, care of STANDARD light cars. The latest model standard light cars may be seen at the company's London showrooms, full partic'llars, prices, etc.;
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STANDARDS in surrey. We are the officially-appointed agents for the county of Surrey for 9.5 hp Standard light car. Orders now being booked for earliest deliveries. Full particulars given and trial runs arranged on receipt of inquiry. Part exchanges entertained. Lankester Engineer-
ing 00.39 Eden St. Kingston; also at Surbiton and Esher. $\operatorname{Chones,80}$ ing Oo., 39 Eden St.. Kingston; also at Surbiton and Esher. Trade zze-982
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Trader STANDARD, 1919, post-war model, 2-seater, delivery expected January,
 STANDARD, 1919, prost-war, 2 -seater, brand new, just delivered, ${ }_{3}^{2530}$ or STELLSTE, 1919, just delivered from worlos, dynamo lighting, hood, screen, Sickey, ${ }^{5}$ wheels and dyrres, ready to drive away, £ 465 . Edwards and STELLITE, 1911, new, 2 -seater model, best offer, over 2410 secures. Box



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GENTLEMAN requires new or slightly-wsed 1919 car or coupe. H. Simons,
153 Westhourne Grove, Londion, W.
$352-141$ SINCER, Caloott, Hilman, G.W.K, or Mongan wanted, new or 1919 second-hand, in faultless candition, Stato works number and price. WANTED, 1919 G.N. light, car. Partioulars to Box No. 2929, c.o. "The 362 c 703

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2-SEATER, 4 -cytinder, 9.5hp, ncarly new tyres, wire wheele, 5 lamps, original paint in first-class condition. yery smant car, buidt by Cunumikar Co., Walham Green, 1914-15, む225. 39 Alerton Rd., Lordship Park, Store REX, twin, 7 -9hp, sporting 2 -seater, 4 wheeled cyclecar, appearance as new, drive away, lamps, hood, screen, toplo, lady owner and driver, ${ }_{36} 13$ Mactis9
19 Market Place, Olney, Buche. CYGLECAR, nearly finished, zever been on road, brand new $8-10$ Precision evclecar engine. new Bosch mawneto, 2 -epped-and-reverse gearbox, new gears, new tyres, thaft drive, absolute bargain, \&35. Smith, Grocer, Wath-
on-Dearne.
oh Jnag
CYCLECAR, 6 hp J.A.P, 2 -speed Bozier gear, 2 belt drive, new Bosch Jag. neto and B.B. carburetter, good runuing order, price $\mathcal{E 6 8 ,}$ or would ex-
change motoroycle and cash. E. Purkiss, Theydon Bois, Desex.
362 chil 2-SEATER cyc'ecar, 10hp V-twin Precision engine, waterproof Bosch, shatt drive, bevel differential, wheel steering, screen, hood, luggage grid, acces-
sories, etc, trial by anmointment, offers. 2 Bhakemore Rd., Streatham. 8hp PERRY light cav for salle, £195; also 8 hip 1915 G.W.K., £235; both cars privately owned, in excellent condition, good tyres, immediate sale

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WARWICK parcel carrier, fitted with 'good coach-built box, $5-6 \mathrm{~h} p$, magneto, runs splendidly, a ny trial, only 48 guineas. Below.
GIRLING varcel carrier, about 6hip, makneto, orerhauled, repainted, 48 guineas. Wandsworth Motor Exchange, Ehner' St., Wamdewarth. 'Phone, Battersea.

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ALUMINIUM number plates, best pressed, on black background, any number within 24 honrs, post free 12s. $8 d$. per pair. Freeman, Oakes THAT tyre and everything else you need, Sunday or weetday is at Youngs', 2, 3 and 5 The Parade, Kilburn. 'Phone, Hampstead 4307.
50 NUTs, bolts, washere, assorted, 2e, 6d., post iree, send for list. Eric
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## MISCELLANECUS (continued).

WILL repairers and private owners who do their own repairs pleaso note that we can make almost any part they may require within reasonable description promptly machined, What you cannot do yourselves bring to us. Best workmanship only. G. N. Higgs, Ld., 31 Va yoursill Bridge Rd., Victoria, S.W. 1. 'Phone, Victoria , 1215. 5,0火0,000 NEW bright-steel engineers' nexagon bolts, nuts, stulds, metal
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ACCUPULATORS, shop soiled, otherwise new: 4 volt 20 ampere, 13 s .6 d ; 4 rolt 40 ampere, 20 s . $6 \mathrm{~d} . ; 4$ volt 60 ampere, 28 s ; 4 volt 80 ampere, 3 ss . 6 folt 40 ampere. 30s. net cash; carriage extra. Essex Accumulator Co
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NO motorist's tool kit is complete withont Britinoi-British-made Tinolthe solder in paste form tor rumning repairs, No tools or flux reguired, invaluable on the road. Tlins, 3s 3 3., post free. Bi-Metals, I-d,
57 Lrant St., London, S.E. 1.
J.A.P., 6 and 8hp, Triamph, Sunbeam, Bradbury and Douglas pattern pistons; also water-coled hight car pattern pistons. We are manufacturing these pattern pistons, and can give delivery within 48 hours, either standand or oversize. It oversize are required, send cylinder with name and address, plainly written, attached, Any special type made. W. T. Matthews, Motor Engincer, 114 Sulfolk St., Birmingham. Trelegrams,
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MORCAN spares. Set bevel wheels, 82s. 6 d. ; chains, best quadity, high gear, zs.; low gear, 3ls, back wheel bearings, 176 . 6 d.; back axle, $8 \mathrm{~s} .6 \mathrm{6d}$, hall links, ls. Gd.; exhaust valves, 6s.; above spares in stock. Hall's
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WIRE wheols, 28 by $2 \frac{1}{2}$, for light or cyclecar work, 20 s , each; light front axles, complete with hubs, \&\&, or with wire wheels \&9 10 s . Gerrard, below. SANKEY wheels, artillery wheels, and rims, large stock; also secondhand hoods from 25s, each, Gerrard, below

GEARBOXES. Few second-hand old type, suitable for 8 -10hp, from 25 ; alo back and front axles from \&4 each; single and twin engines, verticar component castings and forgings. Gerrard, below.
GREASER boits, new, 1 s . 6d. each te clear, front and rear hubs, ball joints, steering sets, everything you want at pre-war prices. Gerrard's,
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ST. MARTIN'S accessories. Below.
ST. MARTIN'S electric lamp sets ( 5 lamps), all brass, torpedo pattern, strongly made and well finished, suitable for 1 light cars, f8 17s. $6 d . ; 4$-volt
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ST, MARTIN'S acetylene headlamps, all brass, 7 -in. fronts, a nicely ed article,
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KLAXONS, Genuine Klaxons, all-black finish, from stock, model E , 45 s . brass, 32s, 6d. Below. mechanican horns, turn hande type, black and
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BLUMFIELD 10 hp 90 -degree twin, w.c. radiator, envine brackots, Bosch magueto, Cox carburetter, Ferodo clntch, chausis frame, with springs and front axle, wheel complete less nipples, palleys, brake bands, roller bearing caps, brake and reverse gear, all above new; 3 -speed and reverse
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A.E.B., 2 Birkbeck Rd., Beckenham, Kent. MOTOR shed, portable, $13 \mathrm{ft} . \mathrm{by} 8 \mathrm{ft}$, double matahboard wood floor. SETS of electric head side and tail lamps at a reasonable price; side lamps, 5 in. glass, would surit Morgans for hoadlight. 79. Mickleton Rd. Corentry.

362 -c645
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