# Hequr (as 

Vol.XXIV.No. 617
Friday. Sep.19. 1924



## Uniform everywhere Reliable always




'Dagenite' is a special composition manutactured exclusively at our Dagenham Dock Works. This composition is moulded into a solid one-piece Container which, even under the most rigorous test, will prove to be absolutely acidproof, leakproof and almost unbreakable. In its natural state it is black but can be painted or enamelled to suit the colour scheme of your car.


#### Abstract

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THERE is nothing of a compromise about this new Swift model. It is
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a rea! four-seater, providing ample accommodation for four accommodation for four
adult persons. Representing that perfect mechanical efficiency for swhich Swift cars have always "been cars have always "been Four-Seater is particularly luxurbus in coaenwork and cquipnient. SWIFT Agents throughout the country are able to give Trial Runs and full parliculars.

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 in conclusive fashion that quality counts first and foremost. Never since the first Hampton was produced has cost been allowed to vie in importance with quality. That is why to-day it pays to buy a Hampton. A rich dividend of satisfaction and the economy of faultless service are yours for the long lifetime of the car.


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Two-Seater All-Weather Model, with double dicliey seat ...
Four-Seater Touring Model
Coupe Model, with double dickey seat
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Full parliculars from any Motor $A$ gency or LAGONDA LIMITED, 195. Hammoramith Road, London, W.6 Tele, hones - - Hammersmith 3342-3343 Head Office and Worka - - - STAINES $\qquad$

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That perfect, noiseless gear change, remarkable flexibility. pronounced hill climbing capability, and those hundred and one virtues which G.W.K. Owners are privileged to enjoy, are the direct outcome of its unique disc drive system.
Of utmost simplicity in conception, design and practice, a G.IV.K. is the easiest car in the world to keep in a condition of maximum efficiency.
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The De I uxe 2-Seater
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The Clyno "Royal" 2-Seater
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Coupe (2-duor)
Saloon (4-door)

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£205 £185
£215 £195
£225 £210

- £225
- £235
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Thise trices are … … $\mathbf{3 4 5}$
Stundard Specification: $11 \mathrm{~h} . \mathrm{p} . \mathrm{fcyl}^{2}$ water cooled engine. 66 mm . Wore, 100 mm . stroke. with five lamps. Three forward speeds and reverse. single cantileversprings. Non-floating rear axie with differential. Full all-wealher equipment and sloping double windscreen. Spare wheel and five Balloon Tyres. Grease gun chassis lubricallon.
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Features of this week's issue of "The Motor," Sept. 1 6th.

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It should not be Possible for Tyres to Leave the Rims at any Speed or Under any Conditions. Opinions of Experts. Tyre that Cannot Come Off the Whecl.

HILL-CLIMBING AS AN ART
Getting the Best Out of Your Car on a Gradient.
HOW SPARKING PLUGS ARE MADE.
The Romance of the Discovery of a New Insu. lating Material.

ALMOST HUMAN TOOLS AT OLYMPIA.
Some of the Wonders of the Machine Tool Exhibition
THE AUSTIN TWELVE ON THE ROAD.
A Medium-powered Family Car with a Refined Performance.

FINDING A MOUNTAIN COURSE FOR A SCOTTISH TRIAL.
Efficary of Front-wheel Brakes Proved Descending a Grass Grown Track of 1 in 2d.
A NEW SIX-CYLINDER REO
A High-grade Amcrican Production with many Unique Features.

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Mu:h Improved Coachwork and New Lubrication System.
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Front wheel Brakes and Balloon Tyres available Without Extra Charge.

WHY DO CARS CATCH FIRE?
THE B.A.RC. AUTUMN MEETING.
J. G. P. Thomas (Leyland) Wins at Over Two Miles a Minute.

A REMARKABLE GERMAN STREAMLINED LIMOUミINE.

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Fe,stures of "The Molor," Seplember 23rd.
ENTIRELY NEW DEPARTURE IN VALVE
        COOLING.
MORE 1925 CARS ILLUSTRATED AND
                                    DESCRIBED.
                    MAKE A NOTE OF THE THREE SPECIAL
                    SHOW NUMBERS OF THE MOTOR
OCIOBER 7th. 14th. and 21st. GREATLY
ENLARGED. PRICE 6d.
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The long sweep of undulating main road-not another car within miles. "Put your foot down" on that fascinating little accelerator pedal and feel the Amazing A-C leap forward like a greyhound.
That steep climb up which you laboriously toiled in another car "put your foot down" and soar like an eagle to the summit.
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When you're choosing your next car, "put your foot down' in another sensemake sure it is an Amazing A-C.


12 h.p. 4-cyl. from $£ 275$


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WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." !t helps the


THE FAVOURITES FOR THE " 200 ." During practice the three Darracqs shown above have been lapping at over 100 m .p.h, and they are frecly quoted as leading favourites for to-morrow's race. K. Lee Guinness, with folded arms, in the centre of the picture, and H. O. D. Segrave, wearing goggles, on right, are two of the drivers-G. Duller, not in the photograph, being the third.


Ead of :ummer Time.
Benders are reminded that Summer lime comes to an end this week-end. ('locks should bo put back one hour lafore retiring on Saturday (to morrow) night.
Austin Sevens at Brooklands.
Austin Sevens secured 1st, 2nd and 3rd places in one of the races at Brooklands on Satirday last. Two of tho (ars-Enyland's and Waites'-were 200 Mile racers, and undoubtedly they will be popular favourites on Saturday.

This Week.
A comprehensive guide to the 200 - Mile Race. which takes place to-morrow at Brooklands, is a special feature of this issuc. The guide, which has been prepared with the definite object of forming' an invaluable acceessory during the race itself, includes a tabulated list of cars and drivers, a lap speed table and a lap spoed diagram. By means of either of the last two named tho approximate speeds of any car can bo alscertained in a moment. Take this issue of The Light C'ar and Cyclecar with you if you intend to watch the race.
No 617. Vol. XXIV.

## LIGHT1NG-UP TIMES

for Saturday, Sezt. 20th, 1924.

| London | L...3.32 | Edinburgh |  | 746 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Newcastle | 7.39 | Liverpool | $\ldots$ | 745 |
| Birmingham | $7.39^{\circ}$ | Bristol | $\ldots$ | 7.42 |

The above are the lighting.up times for rear lamps in England, Wales and Scotland.
Moon-Last quarter. September 21st.

Petrol at Pre-war Prices.
A surprise was sprung on the motoring public on Tuesday last in the shape of a furthar prico reduction of 1d. per gallon of fuel, the reduction, however, only applying in London and certain adjacent districts. No. 1 petrol in those areas is now 1s. 6 d. per gallon, which is slightly cheaper than was the ruling price in 1914. Tho "Landon Zone" seems to have no definite boundary line; in fact, it is said to extend east to the Kent Coast, so far as Mertford in a northerly direc. tion, and about the same distance west and south

Nearing the Piice Ideal.
The two-seater Jowett can now be purchased completo for $£ 150$. This is getting nearer to the $£ 100$ mark, and the car certainly represents wonderful value for money.

## The Paris Salon

The French Motor Exhibition, which is held at the Paris Salon, opens on Ootober 2nd, and closes on October 141 h, 1.e., two days before the Olympia Show opens. There will be no fewer than 963 exhibitors, and as usual a number of British firms will be represented.

## Next Week

Every car competing in the 200-Nile Race comes within the light car defini. tion, that is, a maximum engino capacity of 1,500 c.c. It would be more correct, therefore, to term the ovent tho Light Car 200-Mile Race. The Lighi Car and Cyclecar cators exclusively for 1,500 c.c. machines and under, and we therefore take a far grenter interest in the race than any other motor journal. This interest will be retlected in our detail report in next week's special 200 Milo Raco number. Make sure of your copy by ordering it without delay.

The Motor Show.
At a conservativo estimato no fewer than 50 individual makes of light car will be exhibited at the Motor Exlibition. These will include many new models.

Special Show Numbers
As usual, three special issues of The Lighe Car and Cyclecar will be published in connection with the forthiconing Olympia Show, which opens on October 17th and closes on the 25th. The first Show Number will appear $\boldsymbol{\text { on }}$ Friday, October 10th, which is exactly a weak bofore the Show opens. and the second and third Show Numbers will follow on October 172h and October 24th. Further details of these special issues will be published later.

## Frices of Rover Nine

The open touring edition of the o.h.w. Rover Nine will be available for 1925 in two models, the de luxe type, which we described last week, being priced at £205, and the slandard type costing £185.' 'The latter is equipped with the same double windscreen, balloon tyres, hood, steering wheol and dash as tho do luxe model, but is fitted with a threelamp set in place of the five-lamp set. A spare whee and tyre aro provided, the body being finislied in olive nnd the upholstery in hlack antique leatlier cloth, thus making a very pleasant combination.

Betling for the " 200 "
No list of betting prices is being issued this year in connection with the 200-Mile Race by "Long Tom," who,


## MOTOR TERMS TRAVESTIED

No. 30.-Query: What is the Term ?
We olfer a prize of ONE GUINEA for the most apt motor term received, No solution will be judged before 11 n.m. on Tuesdas next. Only postcards will on tuesdas next. Oniy posteards will weel's pieture is in "Around the Trade.")

A C. Wembley Exhibits.
The A.C. Co. has again availed itself of its privilege to alter tho A.C. car exhibits at Wembley. During September the four-cylinder model will be represented by a $12 \mathrm{~h} . \mathrm{p}$. Royal long wheelbase four-seater, finished in dark blue, at £399. This exhibit will be for saie when it comes off the stind, presumably at the end of the month.


THE LATEST AUSTIN.
howover, informs us that much betting has taken place in response to definite inquiries, the position being that Segrave and Guinness are equal favourites in the 1,500 c.c. class, with Coe, Harvey and Joyce woll supported. With regard to the 1,100 c.c. class, Count Zborowski is favourile, with WilsonJonos and Hawkes close in attendance: and in the 750 cac. class Gordon England is a pronounced favourite, with Waito second favourito. Many people havo named the following cars in a treble:Darracg, Salmson, Austin, and have got oven money about it. Another treblo that has been in demand is Guinness or Segrave coupled with Zborowski and England. Duller will probably be well backed.

H12

## Cheap Motor Fuel.

Guaranteed No. 1 motor fuel can now be obtained for 1s. 3d. per gallon at certain depots. Although "unbranded," it is said to give excellent results in alt types of small car engine.

## NEKT WEEK'S SPECIAL ISSUE.

> A Souvenir of the 200 -Mile Race in apecial coloured cover. Each of the three races separately deacribed and illustrated. In additon, all the usual I fatures at the urual priceon the usual day.
> ORUER YOUR COPY.

Common Sense at Halifax.
The proposal to fix a speed limit for all vehicles passing through the centic of Malifax was put w the vote and de feated at a recent meeting of the town council.
Protective Tariffs in Austia.
'The Austrian National Assembly havo just accepted the new protective tarifis which, on automobiles, mean somothing like 50 per cent. all valorem. British mado cars, however, are to enjoy a small reduotion owing to crimmercial treaties previously concluded.

A No-irouble Run.
The Royal Automolble Club lias now issued a certificata in comenetion with the performanco of an A.C. light car which ran fiom Tandon to Edinburgh and back, no work whatover heing dono on the car other thin
tions necessary fon rumbun operatotal distance coveral ans antly 833.9 miles.

Cheaper than $R$ al.
Tho owner of an Austin Beven, living at Swindon, took his wife and two children to the Devonshime const and back, a distance of 320 miles 1 lis ex. penditure on petrol (42 miles per gallon) and oil amounted to 12 s . Gd. Had the party travolled third clane inv rail tho fares would have been £5 S. 3d.


One way of carrying a spare tin of petrol on an Austin Seven. It is NOT a standard fitting for 1925.

Our Front Cover.
Particular interest is lent to our front cover this week on account of so many prominent drivers figuring in the picture. J. G. P. Thomas, wearing lis inimitablo pullover, is leaning on the bonnot, H. O. D. Segrave is sitting in the car talking to $\mathbb{K}$. Lee Guinness, while George Duller, who, incidentally, owns a Thomas Special of his own, has his back to the camora. The other goggled figures in the group are the lirench mechanics who have been tuning up the Darracg cars.

## Lagonda 1925 Programme

No noteworthy alterations to specifi cations nor substantial changes in prices are announced by the Lagonda Co. A reduction has been made, however, in the price of the all-weather saloon model, which is now 5365 . The coupe, with doublo dickey, costs $£ 330$, the 4.5 seater £320, and the tivo-seater, with double dickey, £295. Both the 4.5. soator and the itwo-seater are more roomy than they were last year, and the allwealher equipment has been still further improved. Front-wheel brakes can be supplied for all models at an extra supplied for charge of $£ 20$, if orake models have a The front-wheal-brake moat axlo.

## 1925 Models.

Defails of no fewer than eiglt new models are given in this issue.

## New Traffic Mirror

it the junction of Creffield Road and bialing Common, a well known dangerspot, a traftic mirror has lately been rected
South Coast Road Widening.
A scheme is on foot to widen the nain road between Eastbourne and Graford, which is very narrow and danyerous in places. Widening operations are) tr. hic carried out over a distance miles.

For Careless Walking.
When will the motorist arise who is slifficiently indignant to prosecute a pedestrian for walking to the common dinger? Careless pedestrians ate a freguche source of strect accidents, but the motorist nearly always gets the blame.

Punishm~nt to Fil Crime
There is a Gilbertian touch about the mothods adopted by certain American Judges in satataly punishing offenders against motoring regulations. At Los Angeles, for example, an 18 -ycar-old offender charged with exceeding tho speed limit was sentenced to read every newspaper in the city cach day for six minnths and re-write the traffic accident chares the them in his own handwriting. This seems surprisingly like "hard labour," and it would be interesting to know whether the youth completes his sentence.

Motoring in Holland.
The secretary of the R.A.C. has received a letter from the Dutch Automohile Club stating that the Nutch Ministry of Finance is again drawing attention to the fact that Customs ofticials on the frontiers are entrusted with supervisiou of international circulation, automobiles, motorcycles and other vehicles. They are also furnished with a national flazred, white and blue, on the white part of which is the word "Douane." Drivers of all vehicles must stop at once when this flag is displayed, so that the Customs can do what is necessary If drivers fall to stop they make themselves linlle to a fine. The officiala are empowered to nse artis to compel people to stop.

## Let Us Spray.

A weird and wonderful machine is making its appearance on certain main roads in the country. It is the latest development of the mobile sprayer, and with its assistance experiments are being carried out with the ultimate object of reducing the danger of slippery roads. Let us pray that its object will be achieved.

## Found, a Cushion.

A cuslion that was dropped from a car on the Epsom to Guildford road on Tuesday. September 2nd, was picked up by Mr. II. M. Ashw:ell, 390, Lower Ad discombe Road, Croydon, Surrcy who will be pleased to return it to to the owner upon receipt of a correct description and other details confirming the right of nwnership.


## A RACING ALVIS. <br> $\qquad$ A promising car for to-morrow's great race, one of the acers which will be driven who is seen at the wheel.

## Hour Record

Will the hour record be beaten during the 200 -Mile Race? At present it stands to the credit of the A.C. driven by J. A. Joyce, who succeeded in covering over 100 miles in 60 mins., and thus becamo the holder of The Light Car and Cyclccar Challenge Cup. It is enteresting to noto that thus record has now stond for two yoans. It ranks as one of the most remarkable small car achievements.

## Tyre Pressures.

The Dunlop Rubber Co. aunounces dhat many motorists are to-day sac. rificing much of the life of normalaressure tyres by runnimg them at pressures which are feasible only with tyres of the balloon type, which are specifically designed to be run soft. The company remarks that "you cannot run half-inflated tyres a mile without risk of damaging them any more than you can trust a half-styengih spring not to break wnder load.'


NOT A " 200 " ENTRY. $\qquad$ The spraying machine with which experiments are being carried out on certain sections of slippery road.

The Warning ty Night.
The apices of many road-warning triangles in Warwickshire are now equipped with small red reflectors, so that at night the triangular sign is reproduced in outline by reflected light. The schemo is a development of an idea which was first tried in Coverıtry over a decade ago.

## Staff Vacan:y.

An opening exists on the editorial staff of The Light Car and Cyelecar for a junior sub-editor, essentially with provious experience of the production of a weekly or monthly journal. Although of a temporary natare in the first place. there is a possibility that tho position may be permanent. Application should be made to the General Alanager, Temple Press Litd. 7-15, Rosebery Avenue, London, E.C. 1.

## AGAIN A SINGLE INSERTION FINDS A BUYER FOR A SECOND-HAND CAR.

"'I have sold my Rovir 8 at the price advertised and shall therafore be obliged if you oill not pat in two more insertions of the advert in 'The Light Car and Cyclecar, as previously nstructed
G. L. D Eonnor.

There is no speadier means of selling YOUR secondhand car than through .. The Light Car and Cyclecar."
(See nariliculars of Special Scheme in Small Advertisement Sectlon.)

## CLUB EVENTS AND TRIALS RESULTS

## Hill-climb Abandoned.

Owing to the lack of entries, the hillclimb arranged by the Kent and Sussex Automobile Club, which was to have taken place ou Saturday last, was abandoned.

## French Hill-climb Revived

The Cote de Donon (Alsace) hill-climb Which, prior to the war, was considered one of the classical bill climbs of France. is this year being revived, and will take place on Sunday, Septemiser 21 st.

## Forthcomin? Events.

Some important fixtures will conclude this year's competition season. The list includes the (French) Circuit des Routes 1'avees (Sept. 21st), the Wallington MC. Brooklands Meething (Sept. 27(h). the Bradiord and Huddersfield M.C. hill climb at Hoime Moss (Sept 27th). The M.C.C. one day sporting trial (Sept. 27th) and the Gailon climb (Scpt. 28th).

## Race Meeting at Brooklands.

The Wallinglon Notor Club will hold its annual race meting at Brooklands on Saturday: September 27 th , the first race being timed for $1.30 \mathrm{p} . \mathrm{m}$. There will be events for molorcycles and cars. the limit of 1.500 c.c. having been adopted for the light car events. "Black and White." the monthly journal of the Wallington Club. continues to be bright and breezy and forms a useful guide to the club's activities.

## LAGONDA WINS BALLARD'S CUP

HELD over a severe course along, the highways and by ways of Surrey, last Saturday's trial for the 13allard's' Cup, promoted by the Surbiton Notor Club, proved io be a very exacting lest for man and machine Nine cars were entered among a total number of 31. and the premier award was won by W. H. Oates in a $12 \mathrm{~h} . \mathrm{p}$. Lagonda saloon.
Starting from Gomshall at $2.30 \mathrm{p} . \mathrm{m}$. , the first hill-Cold Kitahen - was reached after a run of just over one mile, and this, although a stiff proposition, was dimbed by all the light cars without much difficulty, good ascents being made by T. Silimarsh 7 h.p. Austin Sports), who carried one passenger. and H. Dawson (8 h.p. G.N.). S. D. Marr (11.9 h.p. Palladium) came up so fast that his near-side rear wing was struck by the Parsons chain, which caused an enormous hole to appear in the former.
A two-mile run over a boggy track on Netley Common imposed severe strain on the springing, but thence onwards for some distance the route was over hard roads through Ranmore Common, Dorking, Cold Harbour and up Naughty Willy Hill-quito an easv pro314

## Light Car Records.

It is now confirmed that the $1,500 \mathrm{cc}$. AC racer, with 3 A Joyce driving, beat the half mile record, the kilom. and the mile, all from the standing start, at Brookands.
The old and the new figures are given below in average m.p.h.

Half-mile. Kilom. Mile.
$\begin{array}{lllll}\text { Old } & \text { records } & 62.76 & 66.54 & 74.12 \\ \text { New records } & 6669 & 69 & 72 & 77.19\end{array}$

## Horstman Success

-Capt Trubie Moore made the fistest run of the day and ganed two first places with his $11.9 \mathrm{~h} . \mathrm{p}$. Hurstman super-sports at York Speed Trials, covering the thard of a mile course from a standing start in 22z. secs.

## Irish Grand Prix.

The Dister Division of the Motor Trade Association is making arrangements for the holding of what 2 spromised to be the biggest motorcar race ever held in Ireland. The provisional date is Saturday; October 4th, and the course will be that over which the Motorcycle Grand Prix was run on September 6th. The Ulster Division of the M.T A., however. shows a rather surprising lack of enterprise in fixing the cubic capacities for the three classes. which are as follow :Ordinary touring models up to 1,200 c.c. ; ordinary touring models up to $1,700 \mathrm{c}$ c. . ; and standard sports and touring models up to 2.200 c . c

The Shell Cup
The Sutton Coldfield and Northa Birmingham Automolile Club's autumn reliability trial will take place on Saturday, October 4th, the start being from the King's Head Hotel, Bearwood. The prancipal awards for cars are the Shell Cup and the Carless Cup.

Arnolds Hill-climb.
At the Arnolds hill climb, organized by the Pembrokeshme County Light Car Club, D. II. K Marendiz, driving a sports Marseal, was shie-n.sful in obtaining first places in the 1.500 c class and unlimited class

## Scoltish Events

Tie foilowing F nvis onal fixture list should be in ini...res: the siritisls readers Sept. 20th, Sotush Western M.C. open hill-chmb: Sept. 20th, Dunde and District M. C. acceleranon tist: Sept. 20th, Larkhall and Districa M.C'C 'losing run: Sept. 20th, Falkith amil District MI.C. hali.day trat: Sept. 2th, Ayr MC.C. non - tor tral sept 27th, Ayr C.C nonenop that ept 2th, Ayr II.C.C. open speed contest.
IV allasey Resulis

The followine are the car cesults of the Wallasey (Sand) Sireed 'Trmals, promoted by the daverpail Ilitur Clubs on Saturday last :-1.100 : : F. P. Pas. man (Frazer-Nash), wat
$1500 \mathrm{cr}:(1) \mathrm{G} \mathrm{S}$ I3nston (Horst. man). (2) V . (i. Wallsgrove (Riley), (3) F. P. Paxman (Frazei-Nash).
2.000 c.e.: (1) G S. Pinston (Fiorst. man), (2) V. G. Wallsgrove (Riley), 13) E' P Paxman (Frazel Nash)

Unlimited Capacity: (1) C. S. Boston (Iforstman). (2) E. L. Boston (Vauxhalh), (3) V. G Wallsgrove (Riley).


## ALL TOGETHER

The fate that befell the majority of the competitors on Leith Hill. The car is a 9 h.p. Salmson.
position for the cars on this occasion. Leith Hitl-the stony, precipitous ascent to the tower-not the easy slope usually thus referred to-was, however, extraordinarily difficult, and only two drivers got up unassisted, these being Oates (Lagonda) and Macdonald (Cal. thorpe). Of the others who had survived so far, V. W. Derrington (9 h.p. Salmson) experienced clutch slip, S. Watson (105 h.p. Surrey) and S. D.

Marr (11.9 h.p. Palladium) simply etopped, while 'I. Saltmarsh (7 h.p. Austin) rolled a tyre completely off the rim.
The trial finished at Ripley, where tho competitors and offcials sat down to toa at the Anchor Hotel. W. H. Oates had a total time error of 6 secs., the runner-up being $C$. T. Ashby ( $4 \frac{1}{d} \mathrm{~h} . \mathrm{p}$. Montgomery motorcycle), with a timo error of 10 secs .

## PRACTISING <br> HOW SOME OF THE CARS HAVE PERFORMED THIS WEEK. LAP SPEEDS OF OVER 100 M.P.H. NOT UNCOMMON. LATEST DETAILS OF ALL THE CARS AND PARTICULARS OF WITHDRAWALS.

1T the time of going to press the favourites for the three 200 - Mile Races remain the same as last 1 week. Scerrave and Lee Gimmess are equally faricicd as winners of the 1,500 c.c. class, with Joyce hext, followed by the Bugattis and the Alvis cars. Salmons are strong favourites for the $1,100 \mathrm{c} . \mathrm{c}$ class, and Gordon lengland's Austin is believed to be ihe most probable winner for the 750 c c.e. class. The recond favourite to Gordon lingland is Waite's dustin.
The Darraçs, during the past week, have been puractising fairly consistently, and it has neen fournd that how can lap at about $106 \mathrm{~m} . \mathrm{p} . \mathrm{h}$., with larger whecls than those with which they are fitted when they first arrised.

## A Veteran Bugatti.

The car Culler will drive has beon lapmas with larger whecls at the rear than at the front with a view to increasing the gear ratio, but, after experimenting with different sizes of wheels on their cars, Lee Guinness and Segrave have stripped down their rear axles, with a view, it is understood, to altering the gear ratio by fitting a smaller crown wheel or Jarger pinion.

The lBugattis started practising in earnest eariy this week, O'Day's entrants being in a more advanced state than the car Cushman will drive. This car had its engine almost completely stripped so late as last Tuesday. It is the same car which Cushman used in the 200-Mile Race last year, and it has figured in a number of speed events this season.
'The cars which O'Day has entercd, and which arc lioing driven by L. Montant, G. Blackstock and R. C. Gallop, bear close resemblance to Cushman's familiar yellow racer.


## Busy scenes have been witnessed during the practising

this week. Gillow is seen at work on his Aston-Martin.
Jovce's $1 . C$. has not been seen on the track very much this week, but the cal has been ready for a fortnight. It holds the track remarkably well, and its maximum speed is believed to be about $103 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.

The Alvis cars are noteworthy, particularly on account of their exhaust noise, for. although the lingulation Frooklands silencer is fitted, quite a lively cxhaust note is emitted. With their short wheelhase, and very compact design, the Alvis cars look impressive on the track, but have not so far revealed their maximum speed capabilities.
'l'he Thomas Special is likely to remain a dark horse up to the start of the race, for it has not been scen often on the tritck of late. It would not be surprising if this car is found to have gained several m.p.h. sisce it raced with some distinction at the August meeting.

## The Supercharged Horstman.

The Horstmans, and particularly C. G. Coe's car, with its supercharged British-Anzani engine, are considered to have a very good chance. Coe's engine is understood to develop about si b.h.p., and should be able to lap at ahout $100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.
The Warwicks have been practising assiduously throughout the weel. but, like the Aston-Martins,


CNE OF THE THREE-WHFELERS.
The Morgan racers are very attractive litile cars, very similar in appearance to the atandard Aero type. Norris is shown at the wheel of his car in this photograph.


TWO OF THE BUGATTIS.
L. Montant inearest cameral, and G. Blackstock, who are driving two of the three Bugattis entered by J. O'Day. The cars are similar to
last year's entries
have not revealcd their maximum paces. Very bad luck has been experienced by Lionel Martin, whose Aston-dartin will not be able to run. The car was being towed to the works from the bodybuilders when it overran the tow rope and collided with the car which was towing it. The racer was so badly dinmaged that it will not be possible to get it ready in time for the race. H. S. Eaton has very sportingly offered to drive his standard three-seater AstonMartin in its place, however, and this will probably run.

We have not seen Katon's Marseal on the track, and B. S. Marshall's Bugatti has been another absentec during the early days of this weck.

In the 1,100 c.c. class it is probable that Zborowski will be the favourite among the three Salmson drivers. Douglas Hawkes, who used to drive the renowned "Land Crab" Morgan, is another Salmson driver, $O$. Wilson Jones handling the third. The Saimsons which arrived at the track early this week have tubular front axles, and brakes on all four wheels. They have very carefully streamlined bodies, the under part being also enclosed with the exception of the base of the sump. which protrudes through the undershield to assist the oil in keeping cool. The base of the sump, however, is not ribbed. Separate overhead camshafts are employed for the exhausi and inlet valves, there being two valves in each cylinder, and also two sparking plugs. These are accommodated side by side in the centre of the cylinder head between the valves, a dome-shaped bead being necessary to provide the required room.

The Salmsons are said to be very light, seven and a balf-hundredweight being stated to be close to the actual figure. This is very remarkable considering the completeness of the specitication, but one has not to look long at the cars to notice that the last ounce of weight has been saved wherever pussible. As a case in point, aeroplane clastic is used in place of shock absorbers to check the rebound of the half-elliptic front springing. All the springs of the Salmsons are tightly whipped with strong twine, this precaution against possible breakage having been taken on many of the other cars in the race.
The Morgan speeds should, this year, be considerably higher than last year. The rars have beca practising, and although lap times have not been taken, it may be assumed that a good 90 m.p.h. 18 obtainable. On the banking the Morgans get very close to the top, which would, of course, be impossible unless their speed was very high.
The Frazer-Nash, which Ringwood will drive, bas a 90 -dcgree two-cylinder engine of the conventional G.N. racing type, but it is said to be "hotter' than previous 200 -Mile racers.
The Vagova, which has created so much interest, had not left Paris last Tucsday, and even if it arrives at the track in time for a day's practising, it is not considered to stand a good chance against the Austins, some of which have been ready for a considerable time, while the two favourites, Gordon England's and Waite's, were actually racing in the autumn meeting at Brooklands last Saturiay.

CHITTY'S PLLOT IN A SALMSON.
Count Zborowski, who won fame at the wheel of Chity-Bang-Bang, is shown in this photograph in the Salmson which he is driving in the 200 -Mile Race. The Salmsons are considered to be likely winners of their class.


## Hew Jowett Chummy Model



AWElV Chummy moilel has been added to the Jowet range, and at diso forms quite an attractive proposition. The chicf feature of the bew model is the ample accommodation in the rear stat which, in spite of the provision of armrests, is 33 ins. in width. Thus two adults may be carried for short distances or two children may undertake long journeys in comfort. The Jowett Chummy is an attractive-looking car, which might, at first sight, be mistaken for a small four-seater, the extra length of the body relieving the rather stumpy appearance ni the two-seater.

Access to the rear seat is oblained through the sflual of the frout seat, which hinges like a gate, while the four side curtains, which are mounted on thi body independently of the hoorl, can, if not reguired, he stored in a locker behind the rear s-puat.
A feature of the side curtains is that the two rear ones may be removed nud reset in a position which enables them in act is a "V" windsercen for the rear passengers, while lool-kit and spare tins of petrol and oil can be carried in a capacious locker weter the rear seat.


AMPLE ACCOMMODATION AND SOUND CONSTRUCTION ARE FEATURES OF THIS NEW MODEL.

Ample leg room in the front scats, always a feature of the Jowett, is retained, while the weather profection is completed, when the oneman hood is up, by fabric panels at the rear. These rear curtains may be strapped to the underside of the hood when they are not required.
The outstanding features of the Jowett chassis are the powerful flat twin engme, its ground clearance of $13 \mathrm{ins}$. everywhere except under the back axle, where the clearance is 8 l ins., a point which enabies the car to he driven through running water 20 ins. deep, and extraordinarily easy starting.

Owing to the use of battery ignition the engine may be started however slowly the starting handle is motated, a feature which we were able to verify for ourselves.

The equipment of the Jowett Chumma. includes leather upholstery and Dunlon 650 mm . hy 65 mm . tyres. while Dunlop Bailoon tyres are an extra, as before. On a short demonstration run. a hill with a gradient rather stceper than that of Bwlch-y-Groes, the famous Welsh test hill. was successfully ascended, and we noticed that when seated in the car it was practically impossible to tell that the engine was not at-cylinder. The maker's address is Jowett Cars, Ltd.. Idle, Bradford.

## DETAILS THAT COUNT.

Access to the rear seats is gained easily by lifting the nearside front seat. The rear portion of the side curtains may be opened for ventilation and the celluloid panels may be arranged as a rear screen.


## THE NEW BAYLISS-THOMAS MODELS.



THE new 11-22 h.p. Bayliss-Thomas car is a very greatly improved model. Its appearance 18 smart and dignified and there is considerably more than the usual amount of room both on the two and four-seater models, each of which, completewith Lucas starter and full equipment, sells at $£ 259$.
The improved appearance of the car is due to the tnller radiator, the lower rumning boards and body and the increase in wheelbase and track to 9 ft . and 4 ft . respectively. The doors, of which there are two. on the near side of the four-seater, allow easy access to the seats. and there is plenty of leg room on both models. The pedals and levers in the driving comparment are conveniently located, the former being well spaced out and of useful dimensions. The details of the all-weather equipment iave been carefully considered, the joint between the independent side curains and the hood being thorough!y draught and waterproof and an extra flap being provided between the windscreen and the leading edge of the front side curtains to secure the same objects.

It will be noted from the illustrations that the side curtains are of a type which admit plenty of light to the interior of the car ; there seens no reason, in fact, why it should not be just as light as where coupe or saloon coachwork is used

## Engine Details.

The side curtains on the fourscater are stored mader the rear seat. whilst the tools are stored under the front seat. Signalling flaps are provided and the rear side curtain is fitted with a celluloid pancl.
The two and four-seater models which are illustrated on these pages both have a very imposing appearance, and it must be admitted that the lowpressure tyres shown on the former add materially to the general effect. It will be noticed that there is a door on the driver's side of the two-scater, and this feature will doubtless be appreciated by all owners of these cars. The convenience of an off side door needs no emphasis.
The engine, which is dropped on to four blocks attached to the side members of the frame to enable it to be very easily removed if necessary, has a bore and stroke of 66 mm . and 100 mm ., which gives a capacity of 1,389 c.c. The cylinder nead is detachable and the side-by-side valves are on the near side with their stems enclosed by a detachable plate. This side of the unit also incorporates the Zenith carburetter, which has a strangler, and exhaust manifold which discharges to the rear.

On the other side of the unit are found the positively driven Lucas six-volt dynamo enclosed Lueas starier and the magneto. The driving spindle for B18
the lasi named is pressure fed with oil supplied ly a submerged plunger-type pump. Thermo-siphon cooling is standardized in conjunction wilh a radiator of increased capacity.
The three-speed gearbox is centrally controlled, and is built in one unit with the engine and enclosed clutch housing. The hand brake lever, however, is on the off-side, the brake cross-shafl: heing found jmmediately in front of the main central crossmember of the frame, the pull from this point to the brake cam spindles being direct.

## Low Centre of Gravity.

At the back of the gearbox an open propeller shaft, each end of which is fitted with a falric joint, cunveys the power to the rear axle, which is of the semi floating type and consists of a pressed steel one-piece banjo-shaped casing trousing a sjiral bevel, full differential and Timken taper roller bearings. Both crown wheel and pinion are adjustable, while the brake shoes which operate in 10 in . drums can not only be adjusted by wing nuts on the end of their final control rods, but also hy means of the splined cam-operating levers.
The front wheels have substantinl hubs ruming on Tinken rollers. The axle has been strengthened to allow front-wheel brakes to be fitted as an extra, ancther point of interest being the adjustable track rod and its double ball joints. The suspension relies on long half-elliptic springs made of silico mangnnese steel, those at the rear being underslung, while the rear' ends of both front and rear springs are made to slide in gunmetal swivels contained in special housings which eliminate the use of shackles. 'These housinge are greazed when assembled, and as tho springs are gaitered should require no further attention for many thousand miles.

One of the illustrations, which shows a stripped chassis, gives an excellent idea of the general layout of the suspension. It will be noted that the front springs are much flatter than those at the rear, while the latter are the longer. The under-slinging of the rear springs and the use of fairly flat half-elliptics at the front allows, it will be noticed, a very low centre of gravity, and this naturally iends to obvinte rolling on corners and generally to make the car more pleasing to drive.

The frame, which is slightly unswept at the rear and narrow towards the radiator, is cross-braced at thee points. The front and rear are united by members of $L$ section, while the centre is joined by a member of inverted 0 section. The hody lies flush on the frame, that part which fits over the upsweep being recessed to reduce height.


GRACEFUL, YET Clean lines, up-to-date equipment and low-pressure WORKNIANLIKE.
$\qquad$ tyres enhance the appearance of the Bayliss-Thomas two-seater.
pletely detachable if necessary. In addition to the more or less obv ious advantages of this type of bonnet, it should not be forgotten that the absence of a hinge along the top makes it absolutely water-tight-a fact which is specially appreciated by those who have to leave their cars in the open in all weathers.
The equipment of the car includes $26-i n$. by 3 -in. Dunlop cord tyres, specdometer, clock, spring gaiters, a luggage carrier of more than usual soldity, windscreen wiper, oil and petrol gauge, and a gallon tin of Castrol. Five Comfort tyres cost $l i t$ extra, while the substitution of a Meadows o.h.v. engine costs a further fa. The unladen weight of the four-seater
'The attachment of the body to the frame is by means of four hrackets located, not in accordance with usual practice on the top of the side members, huf at the side so that access to the hody holding bolts. can be ohtained from outside the car. In addition to these four attachments the body is held to the rear cross member in an equally accessible mamer
Anuther interesting feature of the framo is the incerporation in one unit of the swivelling lamp iracket support and the front mudguard steel stay, the latter being of exceptional strength. The swivelling brackets enable the headlamps to be reversed so as to shine on the engine in case of it being necessiry to effect an adjustment at night.

The petrol lank, which will contain 4t gallons of fucl, is fitted under the scuttle dash, and is equippeci with a filler which extends through the top of the
 bonnet. This is flush-fitting and internally ribbed to secure rigidity. The side members of the bonnetare fitted with a concealed attachment, and can either be removed entirely or hinged outwards, the top member being also com-
is about 12 cwt., a speed of 5! m m.p.h. and a petrol consumption of over $40 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. being claimed for this model. It will be realized that for a four-seater the unladen weight is extremely low so that the maxinum $\mathrm{m} . \mathrm{p} . \mathrm{h}$. and m.p.g. which are claimed are probably well within the capabilities of the car, the desigu of which is an interesting commentary of the strides which lawe been made in making light cars still lighter without sacrificing strength or efficiency. It is also interesting to note that particular care seems to have been given to the suspension on this 11-22 h.p. BaylissThomac. It is made by Bayliss Thomas and Co., King's Road, Tyseley, Birmingham.

## NEW CAR DESCRIPTIONS.

FTOR the benefit of new readers of The Light Car and C'yclecar we would emphasize the fact that a special feature of this journal is the care and attention which is given to the descriptions of new models. It is our aim to place the prospective purchaser in possession of every interesting feature concerning a new production so that he may be in a favourable position to compare one make with another and decide upon that which will suit him best.
To that end detail descriptions of engines, transmissions, suspension systems, brakes and 60 forth are included, whilst consumption figures also form interesting data for the owner-driver.
In addition to descriptions of new models we would particularly direct the attention of new readers to the reports of road tests carried out by experienced members of The Light Car and Cyclecar staff of all the latest models. Accustomed as they are to handling different makes of car these members of the staff are able to sum up the capabilities of any production in a very short time.

# TESTING THE LATEST 8.3 h.p. RENAULT. 



The convenient handle for locking the windscreen in the required position

TTHE latest 8.3 hp. Renault with clover. leaf body and four. wheel brakes now costs 2030, at which price 4 is excellent value.

We have recently been givell an opportunity of diriving one of these cars slightly more thau 400 miles, and ats performance throughout leaves no room for criticism.

The clover-leaf body, as one of the illustrations shows, is of a distinctly roomy and serviceable type. The front seats are separate and very comfortable, while that at the rear provides "under-the. nood" accommodation which is distinctly superior to that available with most bodies of the chummy type.

On each side of the single rear seat is a roomy lucker the lids of which may be secured with Yale. type locks. These lockers may be used for storing the side curtains and they are. of course, invaluable for shopping expeditions, pienics and on all occasions when small parcels have to be carried. Incidentally there is room in each of them for a suitease of reasonable proportions.
In addition to the two lockers there is a small toolbox under each of the three seats, while a further large toolbox is provided behind the near-side running board valance. A map pocket is provided in the duor.
The centrally controlled gear and brake levers and the pedals are conveniently placed, while the fitting of the front-wheel brakes mechanism has had no detrimental effect on the steering. Actually there are few light cars which are more plensant to handle, a fact Which is due to no small extent to the worm-andsector stecring gear giving a very big reduction.
From amidships to hardover in either direction the steering wheel must be turned through a complete circle, and from hard over left to hard over right calls 120

LOW - PRESSURE TYRES, FRONT. WHEEL BRAKES, AND CLOVERLEAF BODY ON A VERYATTRAC. TIVE CHASSIS.

TESTIVG TIIE LATEST S.Sh.p. RENAULT (con.).
without a sound and charges satisfactorily at a steady rate. The unit is very accessible and of a popular make
lir is caused to pass through the radiator tubes by suction set up by blades formed on the llywheel; these draw air through the lourres formed on each side of the scutle. The radiator is in two halves, one on each side of the engine and connected by a head tank.

## A Sound Performance.

On the road the 5.3 h.p. Renault handles very nicely. 'There is plenty of steering lock; the controls operate in a positive reassuring manner, and tho ncrupants are well protected by the broad inclined windscreen. An exce!lent feature of the last-named is the means provided for locking it in the position required. This is effected by a single large lever on the driver's side-a much more satisfactory arrangemont than the conventional pair of wing nuts.

Athough the car which we handled was new and consequently rather stift, its performance, considering that the engine is only 901 c.c. and that the car is ronmy and not unduly light! built, was very good. 1t. was too new for its best pares to be sampled, but we were convinced that it could exceed 50 miles per linur, while 25 miles per hour is quite comfortable in scoond gear. The hotlom gear ratio is very low and provides an emiergency ratio on which it will be fomembered one of these cars nearly a year ago distinguished itself by climbing Great Orme at Llandudno wit! a load of 35 stone.

## Economical to Run.

The netroi consumption under normal conditions should he approximately 40 miles per gallon with the - 3 h p Renault. Even the new car which we tried comfortably excended this figure. In 400 miles there was no need to add any further oil to that which was in the sump at the start. We found that it was immorsible to make the cooling water hoil. the radiator heine so cffective that it would probably be advisable in cold weather to blank off a considerable proportion of it.

On rough not holed inads the comfort afforded by the long springs and low-pressure tyres was fully
appreciated, and it would be still further improved if shock absorbers were fitted. With these we believe that the little lienault would be one of the most comfortable light cars on the road.

We examined the car very closely with a view to determining whether this latest chassis possessed the necessary charateristics to ensure the extraordinary wearing properties for which Renault cars are famous and it would certainly seem that these chassis should give the same wearing qualities as their distinguished ancestors.

Lubricators are found at every point where there is any likelihood of wear taking place, and one finds them fitted even at such unusual points as on the brake cam spindle housings. Every one of the steer. ing joints is provided with a nipple for the highpressure grease gun, while the wearing surfaces aro large and so designed that slack should not develop before many thousands of miles have been covered. The high-pressure greasing system is utilized all round-cven for the steering column, on which a nipple is fitted so that there may be a film of grease between the column and its tubular housing.

## A Useful Hood.

Not the least of the many attractive features oi the car is a very ingenious hood which is easily erected and folids extremely neatly. When lowered the hoops are prevented from rattling and the fabric from chafing by stecl spring clips. an envelope of material which matches the upholstery being provided to exclude dust.
In addition to the clover-leaf model which we tricd. and which is illustrated on these pages. coupe, saloon and two-seater bodies are standardized on the $8.3 \mathrm{~h} . \mathrm{p}$. Renault chassis, the coupe costing $£ 330$, with an excentionally roomy English body with folding hood and dickey, and the saloon costing £295. This model has two front seats, one of which is sliding, and a third collapsible seat for occasional passengers. It is an ideal car for town work and for professional use.
The London address of the manufacturers is Renault, Ltd, Seagrave Worke, West Brompton, S.W. G.

## A DISTINCTIVE LIGHT CAR

The 8.3 h.p. Renault with clover-leaf bodywork has a distinguished appearance, both when the bood is raised and lowered. The power unit is very accessible owing to the special bonnet design, while it is one of the neatest light car engines on the market.

## THE NEW LEA-FRANCIS MODELS.

> NEW TWO AND FOUKSEATERS-FOUR-SPEED $G E A R B O X-N E W ~ F R O N T$ $A X L E ~ W I T H ~ S I N G L E ~ B A L L ~$ THRUSTS-NUMEROUS PRACTICAL REFINEMENTS.

THE $192 \overline{10} 10 \mathrm{~h} . \mathrm{p}$. Lea-Francis car is now obtainable in two models, the two-seator with dickey costing $£ 270$ and the four-seater $£ 255$. The present chassis differs in many respects from the 1924 pattern, the principal improvements heing the introduction of a four-speed gearbox, a longer frame with deeper side members and an extra cross-stay, a strengthened rear axle, a new design of torque member, low-pressure tyres and a modified front axle.
The ayout of the chassis is sturdy and straightforward. The frame is cross-braced below the radiator by a nember of inverted U-section, centrally by a men:ber adjacent to the ends of which the stephoard supports are attached, and near the rear by a third stay the ends of which adjoin the brackets carrying the thin ends of the quarter-elliptics.
The $10 \mathrm{~h} . \mathrm{p}$. engine, which is equipped with overhead vaives, a detachable cylinder head, positively driven dynamo and magneto ignition, rests direct on the side members, to which it is attached by four arms. The unit is of particularly clean design: the rockers are covered by a quickly detachable case, the push rods being reached after removing a detach able plate on the near side of the cylinder block The last named is built in one with the upper half of the crankcase. On the other or off side of the unit are found the earburetter, sparking plugs and easily accessible oil filler which is provided with a large cap.

## New and Taller Radiator.

The magneto, which is driven by a cross-shaft, is mounted athwart the front of the crankease so that its contact breaker and distributor are easily accessible. It is attached to the erankease by means of a pair of studs and wing muts and an overhead strap, so that its removal by hand is a very simple matter. The radiator is rather taller than that used on the previous model, thermo-siphon cooling being emplowed for the circulation.

The gearbox provides four forward speeds, the ratios being 4.7, 7.35. 11.4 and 15.8 to 1 , while the reverse gear is 21.6 to 1 . The "box" is a cylindrical casting, the foiward end of which has been enlarged B22
to meet the clutch and flywhecl housing which is formed with the crankease. The rear plate of the box is detachable and carries the clutch and lay shafts with their gears, which can be assembled and adjusted on a jig and then inserted into the casing.
The extension bracket carrying the gear-change mecharism and gate is attached to the off side of the box, the reverse trigger control being operated from the top of the change-speed lever. The clutch and brake pedals are both adjustable for length and leverage and in conjunction with a sliding front scat make it pessible for a long or short-legged driver to lue ascommodated in comfort.

From the back of the box an open propeller shate,


A very neat transmission brake and a spring-anchored torque member are features of the rear part of the chassis.
each end of which is equipped with a fabric type miversal joint, takes the drivo to the rear axle, the transmission brake being fitted on the bevel-pinion shaft abaft the rear universal. The new rear axle is a casting of a special aluminium alloy and is split vertically and centrally.

The wheels, which are shod with low-pressure tyres, are carried direct over the centre iine of the bearing, the latter being provided with a grease cup which only requires attention once cvery 1,000 miles. The inner ends of the shafts are splined to enable them to be withdrawn endways, while the outer bearing is held in by a cover secured by screws.

Oil leakage from the centre casing is prevented

## 

liy fell washers, while the oil filler is conveniently located at the back of the casing.

A hirged spining-anchored torgue stay is fitted, its thin forward end being attached to the rear crossmember, while the thin ends of the rear quarterclliptics are clipped to collars extending round the ontside of the driving shaft casing. By means of this arvangement there is now no tendency for the loody to lift when the clutch is engaged as the axle (an turn slightly without alfecting the springs.
The rear brakes are operated by rod, the transmission brake being controlled by cable through a lever muunted on the off-side member of the frame.


A variation of both reach and leverage of the clutch pedal is provided. These adjustments should be invaluable, and might well be more widely adopted.


The cross brake control is hollow and, after being filled with oil upon assembly, has its ends plugged aip so that the lubrication of this part should be sufficient to last the life of the car.

The front axle is also new, the steering connecfions being fitted with ball joints and each swivel pin resting on a boll which is adjusted by a cup and then lacked in position. This method of supporting the weight of the axle has rendered the steering, even with low pressure tyres, very casy, while also eliminating the nsual chance of wear with bushes of conventional type. The swivels are inclined in order to provide approximately centre point stcering and are also canted to secure a slight castor eflect.

The equipment consists of a C. A.V. lighting and starting set, Zenith carburetter, Stewart clock and speedometer, sloping windsereen and dash, electric horn and double-acting locks to the doors. The edges of the mudguards are grooved so that water and grit can be directed downwards instend of llying on to the body panels.

On the two-seater the dickey is more than usually capacious, a sloping cupboard heing fitted in the front of this compartment in order to take the side curtains. The latter are of the self-supporting type, their trailing halves being vertically hinged and adjustable by means of wing nuts for purposes of signalling, or regulating the rentilation. Tools can be carried under the dickey or driving scat. The four-seater is fitted with two doors and adjustable seats. the near one being of the tipping type. The side curtains are stored
fohind the rear squab, while the tools are kept under the cushion. The bllustration which appears on the opposite page gives an excellent impression of the two-seater, and it will be noticed that for 1025 the Lea-Francis cals present an even more attractive appearance than hitherto.

Conforming with the latest practice, the side curtains have only a very narrow border, very large sheets of celluloid being uscd, so that the interior is particu. larly light. In ad dition to this the body is wide and deep, which, with the tall hood, gives an impression of very gratifying roominess inside the rar.
The four-seater model is equally roomy, but the appearance has not becn sacrificed to gain this end. The


The anchorage for the rear quarterelliptic springs is of novel but sound design. coachbuilders' task his, of course, been simplified by the fact that the chassis is distinctly roomy, and the side members being flat and not unswept are also of assistance.

It will be recollected that a Lea-Francis car distinguished itself in the Royal Automobile Club Six Days' Trial which was held in Wales last May. Tatlow, the driver, was awarded, in addition to his silver class medal, a special gold medal for the pace of his car on hills and for its consistent running during the trial and its excellent condition at the end.

Since the trial the Lea-Francis cars bave enjoyed steadily increasing popularity, and it is more than probable tiat the latest models described on these pages will be in brisk demand during 1025 . Their mechanical specification is certainly all that the most discriminating owner-driver could require. 'l'he prices, considering the quality of the cars, are reasonable, and the standard coatchwork leaves no grounds
 for complaint. The makers' address is Lea and Francis, Ltd., L o wer Ford Strect, Coventry.


A SERVICEABLE The chassis and engine are straightforward and DESIGN. accepted practice. The accessibility
all important parts should be noted.

## THE TWO-STROKE ENGINE SIMPLY EXPLAINED.



The piston ascends, compressing the charge, which is fired in the usual way. On its upward strole it draws a fresh charge into the crankcase, by suction, through the carbu* retter inlet port, which it uncovers.

AMBITIOUS DESIGNERS HAVE ALWAYS RE GARDED THE TWO STROKE ENGINE AS AN IDEAL POWER UNIT FOR THE CHEAP AND SIMPLE CYCLECAR. BUT ONLY IN A FEW CASES-NOTABLY THE NEW CARDEN-HAS A SUCCESSFUL VEHICLE MATERIALIZED. THE TWO-STROKE IS A FASCINATING ASPECT OF INTERNAL - COM BUSTION ENGINE DESIGN AND ITS FUNCTIONING IS CLEARLY EXPLAINED IN THE ACCOMPANY. ING ARTICLE.


The downward motion of the piston compresses the charge previously sucked into the crankcase. This charge escapes via the transfer port into the cylinder when the piston uncovers the opening. The charge helps to expel the burnt gases.

IN the motorcycle world it is not unusual for the makers of assembled machines to offer two models which are similar except that one is fitted with a four-stroke engine, and the other with a two-stroke of equal capacity. The two-stroke is from ten to twenty per cent. the cheaper!
The operation of this type of engine is very simple. One of the illustrations shows the piston at top dead centre and the charge being fired. The bottom edge of the piston has uncovered the inlet-port, and as there is a vacuum in the crankcase, gas is being drawn in from the carburetter. While this is hap pening under the piston, the spark is firing the mixture above it. The piston descends, closing the inlet-port. When near the bottom of the stroke the exhaust port becomes uncovered-immediately afterwards the " transfer port" also.
The transfer-port connects with the crankcase, where the mixture has been con pressed, and the gas is transferred from crankcase to cylinder. This part of the - cycle of operations is shown in a second illustration.
It will be noticed that the piston of a two-stroke has many more functions to perform than that of a four stroke, as it has to act as piston, valve gear and gas deflector. The fact that it has to control the ports makes its length a definite mathematical quantity ; and as in no case can it be less than the length of the stroke, this fact militates against the use of long stroke engines. The distribution of gases in the cylinder is left to the deflector top of the piston. The curves of these deflectors vary considerably, and largely influence the performance.
The cycle of operations is easy to understand, and the engine is simple to construct and maintain; but one cannot help thinking that Messrs. J. Day and F. W. C. Cock, who invented the crankense compression two-stroke in 1891, must have been very daring men, for the conception of pushing out a 424


The two-cylinder side-by-side two-stroke engine clutch and gearbox unit, which is the most striking feature of the assembly of the New Carden. It is remarkably neat and compact, the engine developing a comparatively high horse-power for one so small.
burning charge with a highly explosive one is perhaps the boldest in contemporary science.

Day's engine, which had all the essentials of the modern two-stroke engine, was, however, only used for stationary and marine work, and it is to the late Alfred Scott, who in 1906 built the first of the well-known Scott motorcycles, that we uwe the more flexible two-stroke engines of to day.

In describing the few simple two-stroke engines used in motorcar practice of to-day, it would be best to start with the 350 c.c. Villiers, becanse there raust be many thousands of these engines giving satisfactory service. The small size of this engine makes it unsuitable for any but the lightest of cyclecars; but it is already known to readers of The Light l'ur and C'yclecar in connection with the Harper Runabout, the Xtra cyclecar, and the French Monet Goyon cyclecar
An examination of the engine demonstrates its great simplicity. Attenticn is drawn to the patented arrangement of cooling-fins on the cylinder head and the ingenious flywheel magneto lighting dynamo.
An ingenious air cooled twin-cylinder two-stroke is used to propel the New Carden car. This engine, which works on the accepted principle, is constructed en bloc with the gearbox and rear axle, and is bolted up to the car. The lubrication is effected by mixing the oil with the fuel in the proportion of three-quarters of a pint of oil to one gallon of spirit-a method of oiling which, besides having the advantage of simplicity, boasts of perfect automaticity.
A twin-cylinder air-cooled two-stroke engine is also used on the German Grade cyclecar, but in this case it is conventionally mounted under the bonnet.
The Emms engine, constructed by the Guison Engineering Co., Ltd., of Coventry, is a remarkably compact unit. Its height is only 20 ins., and its overall length of 15 ins. makes it possible to mount it in a

## THETHO-STROKE ENGINE (contd.).

chassis of very modest dimensions. Oil is carried in a ribbed sump scparated from the airtight crankcase, and the oil-pump is operated from an eccentric on the front end of the crankshaft. Washers are fitted to the sides of the main shaft ball-bearings, as in these engines it is essential to maintain a good compression in the crankcase. The bore and stroke are 80 mm . and 85 mm . ( 854 c.c.) and the b.h.p. is 10 at 1.800 revs. per minute. Like all two-strokes, its character is to develop power at low speeds; and in an $8 \frac{1}{2}$ cwt. chassis a 4 to 1 gear is used.

## Advantages of Two-strokes.

The advantages of two-stroke engines are as fol-low:-(1) Even torque. A two-cylinder two-stroke will give a torque-diagram similar to that of a fourcylinder four-stroke engine. (2) Simplicity and fewness of parts. Compare a two-stroke engine such as the Emm s with the conventional four-cylinder engine it replaces. (3) Ease of manufacture and mantenance. There are no valve adjustments, and the symmetrical combustion-head can be machined all over to facilitate decarbonization.
The disadvantages of the type require a more detail explanation. The first disadvantage of such an engine, being one of the constant compression type, is lack of flexibility. On a four-stroke engine, the closing of the throttle apcrture creates a partial vacuum in the cylinder, and the compression stroke is started with an amount of gas in the cylinder that varies with the throttle-opening. It is, therefore, apparent that we can vary both the compression pressure and the charge weight; hut with the two-stroke if half a cylinder-full of gas is admitted only half of the cylinder-full of exhnust gas will be expelled.

It is, therefore, evident that the compression pressure is always constant, and that below a certain throttle-opening it will be impossible to run the rngine because the charge will hare become too diluted to fire. In practice, it will be noticed that a lwo-stroke engine running freely and without load, "four-strokes," or only fires on each alternative cycle of operations.
As relf as being unable to run on very small throttle-openings, the power of the two-stroke falls


A sectionai erevation of the Emme engine. The oil pump operated by an eccentric on the front end of the crankahaft, plainly can be seen and the simplicity of the who'e assembly is evident.
off rapidly at high speeds, due to the "wire draw ing " of the charge.
It must be understood that a cylinder full of gas can never be obtained even under the most favourable conditions, because a percentage of the stroke is lost at both ends of the piston travel. At the top of the stroke there is a period taken un in filling


The Emms engine, constructed by he Gulson Engineering Co., Ltd., is one of the most compact two-stroke units. It, beight is only 20 ins. and length 15 in . malking it an ideal unit for small chassis.
the crankease with gas, and at the bottom of the stroke there is a further period when the charge is being transferred from the crankcase to the cylinder.

## Where Losses Occur.

The crankease does not form an ideal pump; and owing to its comparatively large volume, a big percentage of the charge must remain in it ; but at ordinary speed these negative influences can be tolcrated. At high speeds a further loss of power takes place. owing to the very short period during which the induction port is open. The charge has only half the time to enter the cylinder that the four-stroke engine charge has. This gives the top end of the power-curve a similar character to that of the woolly American car engine.

Although from a purely technical aspect the engine is not an efficient one. on the road it has the advantage that a fall in rovs. due to a change in gradient does not of necessits mean a fall in engine power. Hence the two stroke engined car is a better topgear perfo:mer than a four-stroke engined car of rqual weight, fitted with a similar gear-ratio. The fict that two of the three makers of two-stroke engined cars only fit two-speed gears is a practical proof of this statement.
Despite the possibilitics of the two-stroke, the makers of English small cars scem to fight shy of adopting it, although it is common knowledge that several have experimented with it. It is to be feared that the disadrantages which have been outlined are considered to weigh too heavily against the advantages which can be claimed. Morcover, the average private owner is inclined to be prejudiced against the type for a reason which it is not particularly easy to see.
It is possible. however, that in these days of high revving small fours, the two-stroke will gradually demand increased attention, for at a medium number of r.p.m. it gives of its best. does not four-stroke, and produces power at the road wheels which is only comparable with a four-cylinder engine.

From the noint of view of upkeep it is very much ahead of the ordinary four-colinder poppet-valsed engine, for there are no valves to grind in or keep adiusted. nor is there the fear of valve breakage at high speed.
J.H.

ロ25


## Romance of Carburation.

IT is surely less than a year ago when the Memini earburetters were practically unknown in this country, but to-day there are very few motorists who are not familiar at least with their somewhat Jungle-Book-sounding name. In racing circles the Memini


Signor Memini. carburetters are gaining popularity almost every day: and I understand that no fewer than 15 of the cars competing in the 2川. Mile Race are using them. Signor Memini, who, incidentally, speak no English, has been husr at Brooklands all lasi week superintending tho tuning-up himself, and remarkably good results have been cbtained. Not the least attractive feature of the instruments themselves is their accessibility for tuning. Even the choke tubes can be changed without dismantling the carburetter or even removing it from the indaction pipe.

## 100 m.p.h. in "The 200 "?

IHAVE spent several interesting days at Brooklands during the past few weeks watching the practising for the 200 -Nile Race, and some of the practice lap speeds have been perfectly amazing. I have myself timed many laps which have been covered in so short a time as 1 min . 34 secs., which works out at 106 m.p.h., and have gathered from the drivers that even at that speed they have not been quite all out. The Darracqs during the practising have done laps at $106 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. without pressing their engines unduly, but even so I dare not prophesy that the race will be won at a speed of more than 100 miles an hour. General feeling among the Brooklands cracks this week has been that the winner's average speed will be $98 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. or thereabouts. In the $1,100 \mathrm{c}$ c.c. class the dittle Salmsons have shown that they can lap at more than 90 m.p.h., while some of the Austins can approach that amazing speed. Gordon England tells me that he is thinking of supercharging an Austin for next year's race and much more than 90 m.p.h. will then be attainable. Without a supercharger he can do very nearly ninety.
n26

## Street Saharas

THE original idea of dressing road surfaces with tar was to suppress dust. I am old enough to remember the ontcry that went up when motorcars came into use and clouds of dust blinded and choked everyone else on the road. Then some genius suggested tar as a remedy and it was rapjilly adopted. It is to be feared, however, that some surveyors havo not such long memories. How else are we to explain the fact that modern systems of surface-dressing are creating a dust nuisance far worse than any caused by naked roads?
In front of my house the road has recently been covered with tar, on top of which sand and gravel have been thrown down so generously that the street resembles a beach. Only a small proportion of the material is absorbed by or pressed into the tar; the rest remains to be blown about by the wind or raised into veritable " sand-storms " by fast vehicles.
This method of road-dressing is not confined to my neighbourhood. I have noticed it being practised in many parts of the country, and, unfortunately, odium for the resultant dust is not being altacherl to the responsible authorities, but to motorists. I am told that sand and grave! pressed into the tar produce a hard-wearing surface and prevent the tar from liquefying on hot days. This may be, but if it results in the dust demon being let loose again these virtues may be purchased at too great a price $\Lambda$ simple remedy would be a more accurate estimation of the amount of material required for the purpose

## Hushands Take Note.

IMET a young friend the other day frightfully "bucked" at selling a car within a few days of being given a trial as salesman to a well-known firm of agents. It came to his notice that a certain gentleman, whom we will style Blobbs, had jestingly declared, while playing billiards in his club, that he was getting too stout to walk and must buy a car Next morning my young friend look a demonstration car to Blobbs's residence avid for business. Blobbs, however, had left early, but Mrs. Blobbs was in Nothing daunted, my friend invited her to take a ride.
The lady accepted with alacrity. They had not gcue a great distance when the driver, with a perception which could carry him far, observed signs that his passenger considered she had gained somewhat in social importance. Wisely, therefore, he extended the trip to include several shopping calls, from each of which the good lady emerged with her head still

## Ric゙l/ MIXTCHRE: (contd.).

higher; and finally she asked to be taken to her busband's office. Hubby was hauled out, a brief attempt at rebellion was defeated, and he was bustled into the car. What Mrs. Blobbs said to her husband during the subsequent run the driver does not know, but prominent in the conversation that floated from the rear were such sentences as "We couldn $t$ refuse the young man now" and "I'm not going to be let down before the neighbours.

The result was a gratifying sale!

## T. B. Andre and his Cup

OCE of the most interesting personalities in conpection with the $200-M$ Me lace is $M_{1}$. T. B. Andre, ye: hu is one who enjoys the least limelight. I sup. pose it is because his name has become part and parec of the premier award as it were and that the glamear surrounding the cup itself tends rather to obscure the generous donor. Mr. T. B Andre is one oi the pioneers of the small-car morement, in which convection, some time hack, he produced the Marlborough ear. Of late however his activities have bicen evident more with regard to the famous Hart fo: l shock absorbers

## The Signal of Distress.

NCCH has been written lately concerning the sugII gested adoption of a recognized signal of distreso to he used by those whose cars have broken down and who require assistance from passing motor ists. I was recently stopped by one of these unfor tunate folk, and I commend his system to others who may be similarly placed. He merely stood in the centre oi the road-and a narrow road at that-and extendel both arms in a horizontal plane. The efficacy of his method lies in the fact that if it is ignored the charge would most certainly be one of man slaughter.

## An Annoying Trap.

SIPNNING along a busy main road the other day Ni suddenly found myself in the rear of a long procession of motor vehicles crawling along at a funereal pace. Lorries, motor coaches, cars, sidecars, and motorcycles were all represented in the cortege, but cyclists sped merrily on. Wondering whether we were ir the wake of a tank I stopped to ask a pedestrian the cause and discovered that hereabouts was a notorious police trap. It appears that in operating the trap the police select one vehicle and time it irrespective of the specd of the others. Thus it might be the slowest of the lot, hut if it exceeded the limit by the merest fraction the unfortunate driver would be summoned.

I went along feeling like the one rabbit in a warren which is fixed on by a stoat. It was comforting, though, to hear the comments oi char-i-bancs passengers anxious to reach Wembley. These made no bones about expressing their disgust at police traps and those operating them, and as constables accept from such quarters observations that would bring car owners before the Bench the refreshing criticisms somewhat compensated us for the tedious delas.

## A Mysterious Thump.

ACOLLEAGUE of mine is spending quite a lot of time underneath the chassis of his car endeavouring to discover the cause of a mysterious thump which is evident even on moderately good roads, and is sug. gestive of the sensation and sound caused by tyres which are pumped board hard: these, however, are certainly not guilty, as he has tried running them on the soft side. The symptoms indicate a loose gearbox anchorage or some other such point of attach. ment, but examination shows that everything is neat and tight. Nor is the thump caused by anything loose and heavy in the tool locker. He implores me to put the case to my readers and ask them if they have any suggestions to offer.
S.S.


CLYNOS FOR 1925.

The front and side views of the latest model four-seater Clyno show that detail attention bas been given to the general appearance of the car. The photis also show the neat all-weather equipment. Clynos with right-hand gear lever can be obtained, the third illustration showing how this has been carried out. These cars are fully described on page 522 .

## SPECIAL SPORTS AMILCAR FOR 1925.

## DETAIL DESCRIP. TION OF THE LATEST MODEL, WHICH INCORPORATES FOURWHEEL BRAKES AND A SPECIAL HIGH EFFICIENCY ENGINE.

'
HE new sports Amilcar, which has - just arrived on the British market. should make a direct appeal to all speed enthusiasts. As wili be seen fron the photograph, the car presents a very sporting appearauco and its general design is particularly good. The chassis side members are swept in towards the rear to conforna to the streamlined shape of the body, whilst a cowl over the radiator, the rakish-looking mudguards and a faring over the front asle all add to the suggestion of speed.
Tho four eylinder engine, which is rated at 8 h.p., has a bore and stroke of 60 mm . and 95 mm ., giving a capacity of 1,074 c.c. Certain modifications liave been incorporated in this engine, includ. ing a new-type detachable head, having an increased water space. The geardriven dynamo is bolted to the timing case, the magneto is now fitted with a vernier coupling and the starter is bolted into the fywheel housing Thermo-siphon cooling is used

## Novel Oiling System

The engine lubricating syetem is interesting. There is no pump, but the Hywheel, which dips in the oil, is a fairly close fit in its housing, and cast in this are "buckets" which catch the oil thrown up by the flywheel, and convey it through ducts to various points on the engine ; surplus oil drains dowr. into the sump to be again circulated; the system has the great merit of being simple and foolproof.
Bolted up to the engine is a three-speed-and-reverse gearbox, with central control, and the cardan shaft is taken through a torque tube to the differential


With so sporting an appearance, together with a road speed of $75 \mathrm{~m} . \mathrm{p}$.h.. the Grand Sport Amilcar should command a ready sale. The fully streamlined body has staggered seats and the spare wheel is carricd forward on the off side of the body.
less rear asle, which is in a banjotype casing. The bevel gears are of the spiral typo.
The two axle slafts are separatiely bolled to the crown wheel, and means are provided whereby the mesh of the


A part-sectional sketch of the frontwheel brake mechanism showing how the operating plunger works through the hollow swivel pin.
crown and pinion tecth may be ad justed. By removing the large cover plate on the rear of the axle casing the whole of the interior mechanism is exposed for examination or adjustment

The torque tube takes the driving thrust at its front end, and an interest ing feature is that a ball race $j$ filter midway along the length of the !ube to


It is unusual to find so many instruments as

COMPLETE DASH EQUIPMENT It andard fittings on a moderately priced car The Amilard rev,-counter is driven from a coupling on the timing case and the speedometer from the gearbox.
support the
whip.
A wide chamm! scelom was member fitted to the ant extends slightly on each sukt to form brackets, on which ars lut:at the rear quarter elliptic springs. 'The itont springs are half-ellipter Ily front axle is of H kection hetween : heprongs inld of oval section tuwards the zwilel jaws. By this method it is mate strong enough o withstand the reacion of the front wheel brakes. All ionl bakes are arranged to he uperals. together either hy means of the pedal or hand lever, and it is of interest to note that the fronl brake dromas are of larger dia meter than those at the rear

Brake adjustmunt is provided for by conveniently arranged wing-nuts at the and of each brakic rod, and a compensating device is filted on the main brake shaft. All the controls, both hand and foot, are conveniently arranged, and the steering, which is of worm and sector type, is very light.
Tecalemit grease-gun adaplers are fitted 10 all weaving parts throughout the chassis.

## Numerous Instruments.

A very completely equipped castaluminium facia board is provided and behind this is the large cylindrical petrol tank, from which the fuel is fed by gravity to tho Solex carburetter. The tank filior-cap projects through the scuttle dash.

The Rudge-Whitwortll detachable wire wheels, which are shod with 700 mm . by 80 mm . tvres, are fitted on to splined hubs and locked by a ringnut. Hartford shock absorbers are fitted back and front as standard.
The car is supplied with a guaran. teed speed of $75 \mathrm{~m} . \mathrm{p} . \mathrm{h}$., and it is claimed to attain $60 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. in 350 vds . from a standing start. We enjoyed a short run in a demonstration model, but, owing to traffic conditions, a high speed was impossible. We were, howeveri able to form an idea as to tho acceleration, and moro particularly as to the extraordinarily high braking efficiency of the car.
On a greasy road the ear showed not the slightest tendency to skid, however hard the brakes were applied.

Amilcars of all types are now being handled by the congessionnaire, Mr. Vermon Balls, 25, High Street, Fulham, S.W. The Grand Sport-type Amilcar, to which this description relates, is priced at $£ 285$ with full equipment.

## NEW 10 h.p. PANHARD

A REDESIGNED MODEL BY A FAMOUS MAKER WHICH COMBINES LUX. URY WITH MODERATE COST.

A Llcilt ca: which may well clam An : place in the luxury claes. is the new $10 \mathrm{~h} . \mathrm{p}$. Panhard, with ite sleeveHert lakes. The whole claissis is of ver. swhid construction and many novel ienimitas are mearporated in it: desinn. Tho wige hats a capachy of 1,393 c.c. and : 4 R. A.C. rating is 10.4 h . p. Very lugh sinel aleeves are used for the valves mistead of cartimn. A I'ahhard carburetter with a dash-operated mixture and low ruming contrel is fitted, and the fivei in prosure fed from a large tank Wing between the rear spring brackets. Thumesiphon coohng is used in confunction with a belt-driven fan. Tho idator is carried on a cross-member. Ou the near sile of the crankeaso is a rgen nil filler and lewel indicator, which Hesed by a hinzed spring lid.
Dipper Rod for Gearbox.
Bolted to the rear of the engine is a fons-spad and-reverse gearbox, with comral control and a visible gate; a dip stick for ascertaining the level is fitted in the gearbox cover. The clutch is a f:lie-faced cone, running in oil. The C.n :1xle is fitted with a differential and Cof very solal construction. An inTeresting ieature of this axle is that it ats undershumg reversed guarter elliptic

springs, an mousual bul very elficient layout. A substantial torque tube anchored to a cross-member takes tho thrust.

The enecial Panhard system of fourwheel braking is standardized on this light car. All four brakes are operated logether, either by the pedal or tho centrally placed lover. Each brake band is expanded by a rack-and-pinion motion, and tho makers claim that 95 per cent. of the drum circumference is utilized for braking.
Each brako is composed of a steel, Fewodo faced band, to the ends of which racks are secured: a pinion meshing with these racks will, when rotated, force the band into contact with the drum. The shaft of the pinion is, of course, connected to the brakie levers.

Instead of rods or cables, heavy tubes,
adjustable for length, are used to operate the brakes, and very accessible means are provided for the main adjust. ment.
Paris-Rhone electrical equipment is used; it includes a combined starter and dynamo. A refinement is to be found in the provision of spring terminals on the frame for all lamp cables. A castaluminium facia board carries the swithboard and speedometer, which, by the way, is driven by a flexible shaft fom the gearbox.

Detachable wooden wheels shod with 775 mm . by 145 mm . tyre: are standardized, and these, combined with the carefully designed springs, should allow of a high degree of riding comfort. Various types of body may be fitted, and the chassis price with full equipment is 25.500 francs, cr about $£ 308$.


DIGNITY IN
LIGHT-CAR DESIGN.

With an open touring body the new $10 \mathrm{~h} . \mathrm{p}$. Panhard presents an appearance which is not With an open touring body the new $10 \mathrm{~h} . \mathrm{p}$. Panhard presents an appearance which is
excelled by many heavy cars with twice the upkeep costs. Four-wheel brakes and Comfort tyres are refinements which will appeal to the discriminating owner-driver for whom the car has primarily been designed. A speed of $50 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. is obtainable from the touring model.

# Every Motorist Should Know That-_ <br> RACING IMPROVES THE BREED. 

SIMPLE FACTS ABOUT A VERY CONTROVERSIAL SUBJECT.

MANY controversies have centred around the title of this article but, although excellent arguments may be advanced by those who declare that racing experience is of little value to designers of touring cars, it must be admitted that equally sound arguments refuting them are in a majority.
it is common knowledge that racing cars very seldom bear even a remote resemblance to the standard product; in some cases, in fact, the racer is unlike the tourer in almost every respect. but fundamentally it must be remembered that the designer has the same problems to tackle in his touring cars as in his racing cars, and if he is successful in providing for the immense strains and stresses which arise in connection with the former, he is clearly in a better position to guard agaiust troubles likely to be encountered with the latter.
The knowledge of metallurgy which has been gained by motor racing is very extensive indeed; more information with regard to metals is supplied in fact. by motor racing than by any other purely destructive test. for racing stresses the materials in almost exactly the same manner, but, of course. to a greater degrice. as that in which they are stressed under normal touring conditions.

Since the war we have heard a great deal about the lessons learned by motorenr manufacturers on account of their experiences with aero engines, but it must not be overlooked that the speed at which aero engines run is vastly less than that which is common for racing car engines, and although aero experience may be valuable so far as making light parts is concerned, it must be admitted that a successful racing car engine is much more difficult to design and to build than a successful aeroplane enginc.

## Racing Standard Models.

Last rear's 200 -Mile Race was peculiar in that two cars which did extremely well-an Alvis and an Austin-might be described as having heen practically production jobs. In both cases 1924 has witnessed the sale to the public of large numbers of cars of these two makes. Which are almost identical with the ouccessful machines in the race.

The Salmson is another make which has benefited materially from the 200 - Mile lkace. In this case as with the dlvis and Austin, cars very similar to the racers are oftered to the pulilie, and during 1924 very large numbers have heen sold for use as ordinary high-speed touring cars.

Doubtless there will be ihousitnds of spectators at the 200 - Mile Race who will obscric that some of the racing cars are utterly unlike the touring cars of the same make. They should remember. howerer, that the cars in guestion are merely more adyanced examples of the standard articio, and that if the former prove successful then the latter, in years to cone. are likely to embody many of their outstanding teatures.
Overhead camshafts are a casc in point. Many cars in the 200-Mile Race will lie using these, and it is beyond question that the experience designers gain in the race will afford them valuable information with regard to the advisalilits of fitting overhead camshafts in future jears to their standard production jobs.

## Superchargers.

Last year's race made it clear that an engine is very much more powerfu! when supercharged. the result being that there are several supercharged cars in this year's race, and the number would be still greater if more time had been available for designers to experiment. There are several competitors in this year's race who already are experimenting with superchargers for the 1925 race

In addition to forming an excellent test of the cars, the race will reveal the quality of such essential items of equipment as sparking rugs and tyres It may be depended upon thim the tyres used on the cars which win their classces will be stressed to an extent far in excess of several thousand miles of ordinary touring, while the same naturally applies to sparking plugs.

Valves, pistons and lubricants are other-in niost cases proprietary-articles which will be put through the mill, and it will certainly be interesting to see how the cars using the various different makes and brands perform in the race.

## A SIMPLE ANTI-THIEF DEVICE.

ANOVEL method of baffling the attentions of the car thief came under notice recently. Its merits are its simplicity, as any competent car owner can apply it. and its unobtrusiveness, in which lies the secret of its success.
Briefly, it consists merely in turning the ignition switch round so that the "o off" position appears to be the "on." and altering the petrol cock so that its active and inactive positions are also changed over. The latter can be arranged by filling the channel in the plug with solder. and drilling through at right angles. On learing the car the petrol cock and ignition switch are left in the " off "positions.
There is no lock to pick or key to lose : the car looks quite normal. but the person who tried to start the engine without a hint of what was wrong would have to spend some time on the car before he pene. trated the secrets, and would thus expose himself to risk of discovery.

B30

In America they have discovered that locks may be readily picked, while ignition locks are circumvented by disconnecting the earth wire. If there is no ignition lock, and no apparent abnormality in the ignition system, the thici will not readily assume that this is the point to which he should direct his attentions. The same argument applies to the petrol supply, while the combination of the two would provide even a very determined thicf with sufficient material for cogitation to last him a long time-far longer than he would care to take.

Such a device also proves a source of innocent amusement for the owner's friends, who may be invited to discover how to start the car. $A$ test of this kind will show the readiness of most people. even experts. to "take things for granted." and wili teach them to give far greater attention to apparently unimportant details.

C H.

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## Topics of the Day

## Overburdening Small Engines.

TUHE extraordinary efficiency of the very small four-cylinder power unit has devcloped a situation which may prove its undoing. This is the tendency to flog it unmercifully by endeavouring to make it haul a load which is really beyond its capabilities. That such engines stand up to the

A Retrograde Step. very often they are worked up to their absolute output limit. Under such conditions they have not that reserve which is absolutely necessary if driving them is to be a pleasure.

Strangely enough, this tendency to "flog the willing horse" is more pronounced in cars of Continental origin, where we find two-threc-seater bodies-even four-seater bodies-mounted on substantial chassis provided with a power unit sometimes not exceeding 900 c.c. The maximum load which should be imposed upon the "small four " is very clearly illustrated by a well-known British design in which, without sacrificing comfort or appearance, the dimensions of the chassis and the size and weight of the body have been rigidly kept down, 60 that there is no question of overloading the 748 c.c. engine.

Body design, and the permissible limits of loading, should he governed strictly by the b.h.p. of the power unit, and manufacturere must bear in mind that to give service in the hands of the average private owner a car must be built to perform its everyday duties on a throttle opening not exceeding three-quarters.
It would indeed be a very great pity if at the zenith of its career the "small four" were to be killed by over-estimating" its powers of endurance. There is a limit to the output of every engine and the body designer must build down accordingly, otherwise the small-engined car cannot give continued satisfaction.

## The 200-Mile Race.

NOT the least of the many benefits which the 200 Mile Race has conferred upon owner-drivers is the fact that it has caused nearly all the prominent light-car designers to pay the very closest altention to the elimination of needless weight. Tho cars taking part in the race this year are all
Lighter
Light Cars. probably as much as 20 per cent. lighter than their the fact that lessons which have been learned by endeavouring still further to lighten racing cars will prove invaluable in lightening the staudard product of the factories in question. There will be several supercharged engines in the race. but whether supercharging will ever be developed to a stage when it will be practicable for adoption on all touring cars seems questionable. This year's race will certainly throw new light on the subject, and will encourage still more designers to pay attention to the many abstruse problems which are involved. If superchargers are found to be practicable for touring purposes, then the principal advantage to the owner-driver will be that still more power will be obtainable from still smaller engines. From a $1 \frac{1}{2}$-litre high-efficiency engine about $5 \mathrm{~s} \mathrm{~b} . \mathrm{h} . \mathrm{p}$. is normally obtainable: a similar engine supercharged may be made to give over $100 \mathrm{~b} . \mathrm{h} . \mathrm{p}$.

As a test of sparking pluge, valve gear and light reciprocating parts, the 200 - Mile Race is invaluable, but unfortunately it forms but a poor test of suspension, cooling and braking.

If road racing is ever permitted in this country, races such as the 200 - Nile will be very much more valuable than they are to-day, for the racing cars will be subjected to a test far more gruelling than the 73 laps which they have to cover to-morrow.

## COMPLETE GUIDE TO _ THE 200-MILE RACE.

W
ITH the object of assisting those who Flay be new to motor racing, aud also those whose memories may need refreshing, we give herewith a general resume of the objects, regulations and so forth which govern the 200 Mile Race.
The event was instituted by the Junior Car Club in 1921. and has been run off ammually since with conspicuous suceess. To encourage entrants, valuable awards are offered which include the T. B. Andre Annual Gold Challenge Cup, value 100 guineas, which is held for 12 months by the entrant of the car completing the race in the fastest time irrespective of class. This clause is rather important, because it emphasizes the fact that, although the race is split up into various classes, it is not beyond the bounds of possibility that one of the 750 c.c. entries might prove to be the victor. In any case. the winners of each class win outright cups valued at 50 guineas. while those who gain the second and third places in each class are awarded cups of lesser value.

As a tribute to the performance of any driver in covering the whole course within a time not exceed. ing that of the winner of his class by 30 mins., a gold medal is awarded; but. in any case. the track is cleared 3 hrs . after the start. A special prize is given in each class for the car which makes the fastest lap of those actually finishing the race.

## Classes and Colours

Competitors will be required actually to corer 73 Brooklands laps, which is 201 miles 1,728 yds measured on the $50-\mathrm{ft}$. line. This year there are three distinct classes, the engine limits in each case being 750 c.c., 1,100 c.c. and 1,500 c.c.
Cars in the 1,500 c.c. class will be painted yellow : in the 1,100 c.c. class red; and in the 750 c.c. class green. Each class will readily be distinguishable therefore as the race proceeds.

At the time of going to press it is expected that 45 cars will face the starter. They will be arranged in rows, the positions iti each class heing decided by priority of entry; the 1,500 c.c. cars, however, will be in the premier position, with the 1,100 c.c. cars immediately behind and the 750 c.c. cars in the back row. This will permit the field to spread itself out rapidly, and will lessen the possibility of any confu-


A BIRD'S-EYE VIEW. $\qquad$ This view of the track from aloft speciatly 200-Mile Race, reveals the principal points examined in conjunction with the righ
sion arising when the starting semaphore falls.
The progress of the race should be fairly easy to follow, the main key to the situation being supplied by the enormous scoring hoard which has heen erected opposite the pite. In addition, there will be leader boards. by means of


There are frequent trains from Waterloo, London, to Weybridge Station, which is shown above. Borall's Lodge entrance to the track is about ten minutes' walk along the road indicated. which the progress of the fastest cars in each indiviual class can be ascertained.

The chief marshal will have four Hags-green, red, checkered and yellow. The green flag is a caution that a competitor has broken a rule, the second intimation being given by the red flag. which signifies that the competitor has been disqualified and must leave the track. The checkered flag will be shown as the winning car crosses the finishing line, which will be nt the fork

Onlookers should note that after passing the check-

The Raced morrow, Satur 20th, at Bro bridge, Surre)

There are classes. For ing (1) 750 cc
(3) 1,500 c.c.

All three el off together, at 3 p.m. pron

The winne cross the finis proximately track will be ered flag the winning com petitor will corer one more complete lap, drawing in slowly to the competilors' paddock, which will be situated at the beginning of the finishing straight behind the grand-stand The yellow Hag will be shown should it be necessary for any reason to stop)

TECTS AND CONDITIONS OF THE RACE— MS FOR SPECTATORS AND TRACK ARRANGE. NTS -- WHERE TO VIEW THE COMPETITORS. Entries and Speed Table See Succecding Pages.)

epared by our artist as a guide to the general arrangements of the activity observation and so forth, at ance. It should bet zand photograph. (Inset) Brooklands track and its environs.
the public enclosure for cars and spectators, which extends from the foot of the members' hill io the apex of the triangle situated at the grand-stand.
The main entrance to Jrooklands is about half a mile farther away irom Weybridge Station, and is by far the quickest way of gaining access to the public enclosure; but, once the race is under way, cars cannot eross the track, and the ouly entrance and exit will be via the members' tumnel and Boxall's Lodge.
The following are the prices of admission:-Spectators, 5 s . per person; cars: four-wheelers, 10 s ; threewheelers, 5 s .

There are three principal restaurants in the grounds, these being situated under the grand-stand, in the main paddock and at the top of the members hill. It is fresumed that it will be possible to obtain refreshments at any of these restaurants.

There are innumerable vantage points from which an excellent view can be ohtatined of the racing. The grand stand, for which an extra charge of $5 s$. is made, overlooks the pits, and commands a view extending roinhly from the end of the Byfleet banking to the begmang of the home banking on the south-east side of the track.

## Speed on the Banking.

Without using the grand-stand, it is possible to seo the work that is going on at the pits; in fact, spectatore can gain access to within a few yards of the track itself. From here, also, a good view can be obtained of the main scoring board, but from any other part of the enclosure field glasses will be necessary in order to follow the positions on the hoard.

There is usually somo very skilful driving on the banking. for which reason the members' hill provides an excellent position from which to view the race. From the height of these slopes a view of practically the whole track can be commanded, but again fieldglasses are almost a necessity if individual performances are to be watched. It is usually difficult to obtain a position on the members' bridge, and onlookers should bear in mind that they can obtain an, equally good view from the edge of the members' hill, which immediately overlooks the track. Seats are provided here both of the open and covered order, but the latter look out towards the railway straight and the Byflect banking.
Interesting items of news wil! be given out by a giant microphone amplifier, which should be heard easily anywhere in the vicinity of the grand-stand.
the rilu, and it is to be hoped that, as on previous occasions, it will remain furled.

Liwh make of car has a. "pit "allotted to it, which supplies tools and materials whereby repairs can be effectur Only the crew of the car is allowed to touch the vehicle, and no issistant in the vits must set
lkes place tolay. September klands, Wey.

## hree separate

 irs not exceed (2) 1,100 c.c.ises will be run he start being will probably ing line at ap15 pm . The ared at 6 p m . foot on the track. Although general repairs aud so forth may be executed, the base chamber, cylinders, gearbox housing and back-axle casing may not be substituted by other parts during the
The actual race does not begin until $3 \mathrm{p} . \mathrm{m}$., but prospective onlookers would do well to arrive much earlier, as there will be plenty to interest them.

Given a fine day, there is ample ground for pienicking, an ideal spot being tho green slope of the members' hill.
There are two entrances to the track, one being at Boxall's Lodge, nearest to Weybridge Station. Cars using Boxall's Lodge pass under the track via tho members' tunnel, cross the main paddock and follow the directions given as to entrance to


The bub of activity. It should be distinctly noted that the finishing straight, seen in the centre of the photograph, will not be used by the competitors, except as a paddock at the "fork" or grand-stand end.

## THE COMPETITORS AT A GLANCE.

The greatest care has been taken in the compilation of the accompanying table, which contains all the latest information up to the time of going to press; but readers should be on the qui vive for last minute changes.


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R.E.C.
"She is a marvel. May I congratulate you on producing such a fine car. G.S.O

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## Terry's

## screen wiper


-just a few rubs across the screen when wet puts an invisible rainresisting film on the glass, and gives a crystal clear view for a long period. The 'Terry' "wiper needs nocontinuous movement - is non-mechanical, and unobtrusive when not in use Cleaning depth is adjustable to line of vision Held by spring pressure - may be drawn across screen by hand, when driving. Contains six chemically treated tapes, which last about twelve months in a high-grade rustles holder. No. 1, for ovetlap screens. $7 \ddagger$ inch cleaning depth, 9/6.
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## TIMING THE 200-MILE RACERS.

USEFUL TABLE AND GRAPH FOR SPECTATORS OF THE GREAT RACE.

rMHE speed-time list and the graph given on this page have been prepared for the use of renders who intend visiting Brooklands on the occasion of the 200-Mile Race.

Merely to watch the cars circling the track will be of interest, but owners of stop-watches, by making use of the speed table or graph, will be able to keep themselves informed as to the speed of any car from time to time

The specds have been worked out with sufficient accuracy for all ordinary purposes. For purposes of calculation the $50-\mathrm{ft}$. line is regarded officially as the average position on the barking occupied by a car at speed, and it will be obvious that a car which completes a lap above this line in a given time will be
travelling faster and farther than one which is on or below it, because the distance round the track is greater at the top of the banking than at the bottom.

To spectators on the Members' Hill the speeds of the cars round the short banking may appear somewhat slow, owing to the upward gradient of the track. Maximum speeds will be attainable along the railway straight between the timing-box at the railway start -just off the banking-and the half-mile box. The speed over half a mile can be obtained without recourse to the speed table by timing the cars as they pass between these two boxes, but to obtain the lap speed the car must, of course, be timed as it passes some definite point on the track, and any convenient point may, of course, be chosen.

## BROOKLANDS LAP TIMES.

Taken on the $50-\mathrm{ft}$ line, from $60 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. to $110 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.


## SCOTTISH TWO DAYS' TRIAL. <br> A GRUELLING TEST OF SMALL CARS.

UNFORTUNATELY the date of the Scottish Two Days' Trial, run by the Edinburgh nind District Molor Club. clashed with at least two events in Eng. land, with the result that it was poorly supported
There were only six cars entered, five of which came within the 1.500 ec. limit. They were Najor Jolinstone's white sports model $7 \mathrm{~h} . \mathrm{p}$. Jowelt, Capt. A. W. Britlain's 10 h.p. B.S.A. Enowdon Ranger), A. R. Croal's red Ariel. which he drove in this year's Six Days: Trial ; F. W. B. Basters 7 h.p. Austin, and George Evans's i li.p. Auslin, driven by $G$ Granger


## Cranger's Austin requires assistance on Caddonlee Hill.

The regulations for this trial had been framed on the lines of the Six Days' evont, with the exception that during and after the trial competing machines wero subjected to careful scrutiny and marks deducted for faulis.
To gain the special first-class award a cur had to finish in as good condition as it was al the start. A premium was put on reliability in that cars were allowed to deviate from scheduled time only to the extent of two mmutes. Failure on one hill meant the loss of a special first-class award, but not an ordinary first-class a ward.
On the whole the cars showed up very well indeed, and it is significant that in culy one case were marks lost on time.
A bridlepath over the Lammernoor hills was included as the first observed hill on Saturday, and with chains all the cars climbed it successfully, with the single exception of Cranger's Austin. Following this there was a Colonial section of une:ampled severity. An old drove road was crossed. and as it was swampy and frequently traversed by deep burns the difficulty of making any speed may be imagined. Capt. Brittonin (B.S.A.) broke a shock absorber and he deelared he had never seen so wretcled a road in a trial. Major Johastone's Jowet. and the Ariel were almost unrocognizable, being covered in mud. The Austins seemed to be better off.
Talla. with its average 1 -in- 6 gradient, troubled only one of the Austins, which н35
 A. W. Brittain (B.S.A) on one of the many grass-grown hills which were included in the trial.
was not going tou well. Then came Bodesbock-two miles of very stifi collar-work with an average gradient of about 1 in 8, and at the worst about 1 in 5. The best climbs were made by the Jowett and the Ariel.
About 180 miles were covered on Mon. day. One section. Middencols, near Tinto Hill, troubled everyone manly becauso of an awkward water-splash, which drivers came on suddonly. How. ever, no conpetitor was behind scheduled time at Symington, the lunch control.

In the afternoon the route was altered from the original run, and in place of two hills. which were known to he soft and muddy, there was substituted Cinddonlec. near Galashiels.

Caddonlee is a straight hill with a rise of about 1 in 6 for less than 300 yards It is a narrow lane and the surface is hard, with pebbles and boulders, some of them grass grown. strewn all over the 1rack. Tise Jowett, Croal's Ariel and

Brittain's B.S.A. made light of the hill, but the Austins with their standard gearing of 16 to 1 on bottom gear had to bo ussisted. Baxter made a fine altempt to get to the top without chains.
With the exception uf Brittan's B.S.A. which, as already stated, suffered a broken shock absurber, none of the car's was penalized Considering tho amount of cross country work done, this is exceedingly gratifying and the officials were extremely satisfied with tho way the cars stood up to the test. The results were an follow:
Special First-class Awards: A R. Crual (1,097 c.c. Ariel); Major J, I). Johnstore ( 907 c.c. Jowelt). Secondclass Awards: F. D. M. Baxter (750 c.o. Austin); George Evans (750c.c. Austin): A. W. Brittain (1,067 c.c. B.S.A.). Special prizo for best performance: J. D. Jolinstone (Jowett) Special prize for machine in best condition (appearance and mechanical condition): A. R. Croal (Ariel).

## THE 1925 AUSTIN SEVEN

TTHE Austin Seven has recently been improved in several respects, and in its new form will be standardized for 1925. The appearance of the car has been greatly enlanced by the betfer blending of the bonnet and scuttle lines and the fitting of a vertical instead of a slightly sloping windscreen. Another important improvement is the widening of the tops of tho doors, thus allowing much easier access to either of the front seats. The botloms of the doors, it should be noted, remain the same width as on the previous model.
In order to provide more room in the rear compartment the body has been slightly lengthened, while the hood has been redesigned to provide more overhead clearance and to improve the geveral appearance of the car with the sil!-weather equipment erected. The sidn curtains are of an improved pattern, the forward pair being fitted with signalling tlaps, while the rear pair are provided with larger celluloid lights than those previously fitted. Finally. an improved form of instrument board permits the instruments to be arranged to better advantage and allows more room for the uddition of other accessories according to the taste of the owner.

Turning now to the chassis one notes the standardization of a Ian, which is
drisen by a flat belt and provided with it cranked bracket to facilitate the ten. sioning of the drive. Another improsement is the fitting of a fabric in place of a metal universal joint on the frone ond of the propeller shaft, while a third alteration incorporates mud-excluding flanges over all four brakes. Shock absorbers are standard, those in fromt being practically concealed by the fitting of the number plate.
The specification of the car, which is fitted with a miniature water-cooled four-cylinder engine. having a bore and stroke of 56 mm . and 76 mm . ( 747.5 c.c.), detachable cylinder head, magneto ignition, thermo-siphon cooling, pump lubrication and roller-bearing crankshaft, incorporates a clutch of the single. plato type, a three-speed rentrally controlled gearbox built in ono unit with tho engine, and an axle of the threequarter floating type, equipped with a differential and torque tube, the final drive being by helical bevel.

The brakes operate on all wheels, which are shod with $26-\mathrm{in}$. by 3 -in. oversizo tyres, a epare whed and tyro forming part of the equipment, which also includes electric lighting and start. ing, horn, separato and adjustable front seats and the usual all-weather hood and side curtains

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"The Light Car and Cyzlccar " Pholograph.
RACING IN THE RAIN Shocking weather marred the first days racing at Boulogne, the race for small cars being the attraction. The well-known Brooklands driver Mr B S. Marshall, piloted a Bugattl to victory, using Lodge plugs.

# The <br> Grand Prix de Boulogne 

and "Coup de Regularite," for the most conalstently cood performance

## won

by Mr. B S Marshall on his 1,496 Bugatti,
with


The 1923

## 200 MILES RACE

 at Brooklandswas won by Major C. M. Harvey on his Alvis. fitted with Lodge Plugs.

## BROOKLANDS AUTUMN MEETING <br> austin seven gains first three places in one RACE-200-MILE CARS SHOW THEIR PACES.

$T \mathrm{~T}$ is becoming increasingly evident formune a B.A.R.O. handicappers are forming agreat rospect for smad racing handicaps during the autumn meeting of the Breoklands Automobile Racing Club, whick took place on Saturday last. far from being discouritged, the driverk of the cars mider 1,500 c.c. should feel thattered-especially as dies were well represcited in the results.
There were eight races altogether, of Which, however, only iour were open to lighit cars. In all cases however, these cars had to c.mpete ayainst others with
engine capacitise lietween 1.500 c.c. and engine
10.087
In the first liglit car race of the day, the 31 st 75 min.p.h. Short Handicap, there war a held of 15 starters, the limit
 Bentley, which started from scratch.
Meesons A.C.. driven by Kaye Don, and Capt. A. Waite's Austin Seven were a couple of 200 - Mile cars which showed their paces in tiis race. The winner, however, was Capt. Campbell (Star, 1,344 c.c.), second place being gained, after an excellent race, by J. P. Dingle in his Austin Seven. An Amilcar came to grief, lusing a con rod complete as it aped towards the short banking.
In the 17th $90 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Short Handicap Capt. Barnato's Wolseley was a popular winner, with F. Scriven's big Austin second and a Gralld Prix Vauxhall third. Of the remainder two were light cars-an A.B.C. and an A.C.--Loth being unplaced.

## The Austin Trio.

Austin Sevens secured remarkable fulccesses in tho 31 st 75 m.p.h. Long Handicap, the two previously mentioned being reinforced by E. C. Gor-don-England's 200 - Mile racer. This was comparatively new to the track and had not been properly run in. Nevertheless, ovor the $8 \frac{1}{d}$ miles it put up a wonde:fully good race. At thic end of the first lap Dingle led Waite by a couple of lengths, but England was close behind and was rapidly overhauling the second
man. At the end of the secoud lap the positions of the first two cars had been


These unique photographs were taken at exactly the same point
THE POSITIONS on the track They show incidents in the Thirty-first $75 \mathrm{~m} . \mathrm{ph}$ REVERSED. Long Handicap. (Top) At the end of the first lap Dingle's Austin led Waite's. (Bottom) At the end of the second lap, Waite led Dingle by almost the same distance.
reversed, Waite leading, with Dingle lard on his tail. Meantime England had crept up still closer. The three Austins came towards the finishing line in a bunch, and the winner seemed to be decidedly uncertain. Waite won, however, by what appeared to be haif a length from Gordon England. Dingle was no more than three lengths in the rear. It was an excellent race, won at a speed of just under $75 \mathrm{~m} . \mathrm{p} . \mathrm{b}$., good going for such tiny racers.
Both Waite and England have had ample time in which to tune up their cars for the coming classic struggle, and they should both easily be capable of exceeding an $80 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. lap speed.

A Grand Prix Vauxhall started from seratch in the $17 \mathrm{th} 90 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Long Han. dicap, and, considering that the limit men, A. Whale (Calthorpe) and E. C.


## OVERTAKING

THE FIELD. Barnato (Wolseley) overtakes Whale (Calthorpe) in the Seventeenth $90 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Short Handicap, which the Wolseley won.

Gordon England (Austin Seven) had only 1 min. 17 secs. start over a car capable of lapping at nearly $100 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. - the distance of the race being $8 \frac{1}{\frac{1}{2}}$ miles-it was not surprising that the Vauxhall proved to be the victor. Nevertheless, great credit is due to W. Barnato (Wolseley) and E. C. Gordon England (Austin Seven), who gained second and third places respectively, and were no more than a few lengths behind.
Kaye Don (A.C.) was a popular fancy, but, unfortunately, he "packed up" with engine trouble on the last lap; otherwise, he would have figured in the picture.

## Results.

Thirty-first 75 m.p.h. Short Handi-cap.-(1) Capt. M. Campbell (Star*); (2) J. P. Dingle (Austin) ; (3) A. Boorer (Bora*). Average speed, $79{ }_{2}^{\prime} \mathrm{m} . \mathrm{p} . \mathrm{h}$.
Seventeenth 90 m.p.h. Short Handi-cap.-(1) Capt. W. Baruato (Wolseley); F. Scriven (Austin"), P. H. Gurney (Vauxhall"). Average speed, $76 \frac{1}{2}$ m.p.h.
Thirty-first 15 m.p.h. Long Handica p--(1) Capt. A. Waite (Austin); (2) E. C. Gordou England (Austiu); (3) J. P. Dingle (Austin). Average speed, $74 \frac{1}{2} \mathrm{~m} . \mathrm{p} . \mathrm{h}$.
Serenteenth 90 m.p.h. Long Mandi-cap.-(1) P. H. Gurney (Vauxhall ${ }^{\circ}$; driver. Barclay); (2) Capt. W. Barnato (Wolseley) ; (3) E. C. Gordon England (Austin). Average speed, $96 \not$ m.p.b.

Note.-Cars marked with an asterisk have engines exceeding 1,500 c.c.

# FURTHER DETAILS OF 1925 CLYNOS MODIFIED ENGINE DESIGN. FIVE STYLES OF OPEN COACH WORK. COMPREHENSIVE EQUIPMENT. PRICES FFOM £175 

L
I. AST week re announced ithe com Aprehensive range of Clyno cars for the coming soasun. whach provides a series of open and dosed two and foureater vehcics, ranging in price from $£ 175$ to $£ 345$. The prices, which are extremely low, in view of the value given, have heen made possible only by considerable increase in outpul, it being hoped to produce on an averago 100 cars a week during the ensuing 12 months.

The general design of the $11 \mathrm{~h} . \mathrm{p}$ engine remains unaltered, and incorpurates side by-side valves, a detachable head and a monobloc casting, the cylin ders of which measure 66 mm . by 100 mm . lubrication is by plunger pump, and an oil-lovel gauge is placed on the side of the crankcase.

An improvement, which has resulted in much smontier running, is the fitting of plain bearings in place of ball bear ings. This has necessitated the leneth ening of the engine by some 3 ins. which has caused the radiator to be mounted rather farther forward and a longer bonnet to be standardized. This, with the raising of the frame on the springs, has produced a holder-looking appearance, and, in conjunction with the extremely attractive lines of the new londies, resulis in an imposing and grace ful vehicle
The gearbox. which is mounted on the frent end of the torque tube and
allehored otl the centre cross member of the frame by means of a housing which antomatically takes all wear, is mow controlled from the off side by a special arrangement of cross control, which cat be fitted to existing central-change boxes. The sireednueter is driven ofi the back of the box, while the magneto and throtile controls are mounted on the column below the stecring wheel. The silencer is some 8 ins. longer that that previously fitted, while the present tolque tube, brake work, robust spiral hevel-driven rear axle and single-canti lever springs are relained

## The Coachwork.

The open bodies are available in the following forms :-Two seater, occa sional four-seater and full four-seater at two-seater with two doors and a four seater with three doors, being rather more expensise than the simpler types Gencrally speaking, the same gracefu lines so far as the shell is concermed are relained, the side-members of tho frame being fitted with extensions to vupport the four-seater bodies.
On the latter the front seat is en tirely removable, and can also be slid to provide adjustable legroom, the bottorn of the seat being secured by studs and nuts, which are casily acces sible when the cushion is withdrawn. The foot-pan extends across the width of the car. so that the passenger as
well as the daver can benefit, while tha neat arrangement of the instruments and cubby bole and the standardiza tion of a sloping windscreen are uther features of noto.
On the four-enter the side curtantas extend for the full length of the bod: and can be stored behind the rear squab while the sools are kept under the rear seat. To complete the protection of the rear passengers, a :ubstantial celluloid screen is made to slide up and dows helind the front seats
On the two seater the back of the dickey forms the lid, and is supported on two straight rails, which slide ints the dickey when the lid is folded down The side curtains extend well past ilu passengers heads, and are kept at the hack of the dickey squals, while the to tre stored under the seat
Tho equipment is extremely compm hensive, a O.A.V. lighting and starting set, larger headlamps. Snuth clock aml speedometer, Cox Atmos carburetler Fellows marneto, balloon tyres and petrol can and holder being provided
In addition to the tominn models, sports model equipped with a four speed gearbox with central control will shortly be avalable. The lop-gear ratios aro $37,3.9$ or 45 , and purchase: ent specify a solid or a differential-fitted axlo according to their requirements In addition, a locking device for the axle (itl be supplied
The front axle is capable of taking front-wheel lorakes, and the engule is specially tuned and equipped with a longer bontel than standard and : large-bore copper exhaust pipe. which, in conjunction with the sporting two seater bosjy, produces a paricularly smart appearance. The makers' addres: is Clyno Engineering Co. (1322), J.td., Wolverlampton

THE slide valve. which has proved itself so efficient in steam-enginc and locomolive practice, has not of recent years been cons:dered suitable for use in fast-running internal-combustion engines, owing to the difficulty of maintaining the high compressions now common, and furnishing adequate lubricant.
The $11-24 \mathrm{~h} . \mathrm{p}$. Imperia is an $1,100 \mathrm{cc}$. class vehicle, made by an old-established Belgian concern famous for its careful workmanship. Poppet valves are entirely dispensed with and slide valves utilized. These work in grooves on each sido of the cylinder walls, opening or closing the inlet or exhaust ports as they are raised or lowered. Instead of working in special chambers, the slides nctually form part of the cylinder walls, and are ground and polished in the samo way as the juner walls of the cylinders.
Two camshafts, situated in the crankcase, operate the valves through a epecial device, which entirely prevents any lateral movement of the lower part of the slide. Deop grooses milled in the backs of the slides ensure the proper distribution of oil, which is fed under pressure.
The pistons, of aluminium alloy, re ciprocato in cylinders of 66 mm . bore, while their stroke is of 80 mm

The crankshaft is carried in very large diameter ball races, and is of particularly robust construction.

It is claimed that the engine, which is water-cooled on tho thermo-siphon principle, develops 24 h.p. at 3,500 - 12

## THE SLIDE-VALVE IMPERIA <br> A WELL-BUILT BELGIAN LIGHT CAR WITH MANY NOVEL FEATURES

r.p.m. A Solex carburetter, supplied by an Autovac from a D shaped 10 -gal lon petrol tank at the rear, is fitted There is a Bosch magneto, with auto matic advance and retard

The clutch is exceedingly light, which permits of rapid and easy gear changing, and consists of a single steel disc mounted between two Ferodo discs, with a simple means of adjustment.

A four-speed gearbox is built in one l:nit with the clutch housing and engine, and embodies, at its rearmost extremity, the simple servo mechanism of the fourwheel brakes. Central control is provided, as also is a specdometer drive integral with the box.

An open propeller shaft transmits the power to the rear axle via two fabric universal joints. The rear axle is driven by holical bovel and crown wheel and a lour-star differential.

The brake pedal operates the trans. mission brake, which also forms the servo motor which applies the fruntwhoel brakes, so that all four wheels are braked equally and evenly. The side brake lever expands shoes in the rear-wheel brake drums only. The brake adjustment is very simple, and every working part, as, indeed, every part of
the entire chassis, is lubricated on the Tecalemit grease-gun system.

Tho steering gear is of the worm and wheel type, and the fabric universal joint is fitted just above the steering box, so that the rake of the steering columa can be varied at will without touching the steering gearbox, while it also absorbs, in some measure, road shocks which would otherwise bo transmitted to the hands

Semi-elliptic springs are fitted fore and aft, and are soverned by special Imperia rebound dampers; the makers claim exceptional road holding qualities for this car.
Sankoy steel wheels, with 730 mm by 130 mm . Nichelin Comfort tyres have been standardized. Tho equipment in cludes Bosch magnelo, dynamo, and sitarter, electric horn, Tudor 12 -volt bat tery, Jaeger clock and speedometor, Tecalemit grease-gun and all tools. The gear ratios are 5.1 to $1,6.7$ to $1,10.2$ To 1 and 20.4 to 1. Roverse 18 to 1.

Imperia cars are handled in this country by W. G. Nicholl, Ltd., $50-54$ Whitcomb Street, London, W.C.2, and the price of the $11.24 \mathrm{~h} . \mathrm{p}$. model, fully equipped and with English four-senter body, is $£ 375$.

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LUCAS INSPECTION LAMP. No. $3132 / 80$.-Particularly convenient to use, the 16 ft . leugth of cable being retained ou a reel in the body of the lamp. so that it cannot get entangled. Ebony black finish. 15/6 each. Postage 6d. extra


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IN relurn for a moderate subscription the 1 Automobile Association provides members with an efficient and comprehensive Road Seivice which extends from Land's End to JJhn o Groats.

By means of this service the member is looked after from the time he decides on his trip to the time he reaches home again.

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On the road the khaki clad A.A. patrols will be found everywhere ready and competent to undertake minor readside adjustments, obtain tyres, petrol or other supplies from the nearest garage, and otherwise lend a lielping hand.

Siould a member wish to ring up an hotel or garage, or get into communication with home or office whilst "on the road," a telephone will be found installed in each A.A. sentry box for his convenience. The telephones are avalable for use at any hour of the day or night.

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If unable to call, send a postcard to-day, and the booklet will be despatched by return of post.


The services of the staff of "The Light Car and Cyclecar" are always at the disposal of readers. Queries of general interest will often be answered under this heading, but a stamped addressed onvelope should alway's be enclosed. Correspondents are requested to write upon one side of the paper only.

I_ow-pressure Tyres.
A.E.C. (.Maket Weighton).-Several tyto makars cas supply low pressure tyres for dittin! to standard 710 mm . by 90 mam. rhms will beaded ediges.

## Reclaskids.

G. B. I. (lfercford). You can equip your light cat witls the Rectaskid device withont fear of sprangs breaking or any such complications arising. We have
testud Rectajads oursplves, and numerous readers have written saving how satisfied they are with them. If you conmanicale witls Rectaskid, Ltd., 30. Grosvencir Place, London, S.W. 1, they will gladly furnish you with full detauls.

## Better Steering Grip.

C.E.W. (Nuneaton)-There is a variety of different means for making a sterritig wheel more easy to grip. Some drivers bind the rim with twine such as that used on cricket-bat handles and others use insulation tape, but the best plan, if a rather bulky rim is not objected to, is to buy a rubber cover speciAlly made for the purpose. These resemble diminutive cycle tyres and are easily sprung into place over' the rim of tho wheel. Any large garage can supply them.

## Peirol Pipes.

C.T.I. (Hessle).-The reason why petrol pipes have coils in them is to allow a certain amount of "give" in the piping. The coils also tend to absorb vibration. It is a good plan say once a year, to remove the petrol pipe-particularly if it is short and subect to much vibration-and to anneal it by heating until nearly red-hot and then quenching instantly in a bucket of cold water. When quenching one end of the pipe do not hold the palm of your band over the other.

## Front-wheel Brakes.

G.W. (Bromley).-It is necessary in the case of nearly every standard make of light car to use a front axle specific. ally designed to withstand the added strains when front-whee! brakes ara used. Because $a$ manufacturer lists front-wheel brakes nt an extra charge of £20 you must not assume that he could convert your car for that figure. In the case of the car you mention, if it is a front-wheel-brake model it will be fitted with a different axle, different springing and a special type of wheel hab.

## Crankshaft Whip.

N.H.J. (Worthing).-The car you mention should prove quite satisfactory, and we have received excellent reports as to its performance. There is very little risk of whip in the two-bearing crankshaft. These crankshafts are used in the engines of soveral racing light cars with entirely satisfactory results.

## Crankshafts.

W F. (Truro) -The balance weights of a eingle-throw crankshaft are formed on an extension of each web opposite to the crankpin Some crankshafts are built up, but it is the more usual practice to drop-forge them in specially shaped dies, the forging being afterwards anneuled to remore the internal


A conventional single-cylinder crankshaft, showing the balance weights.
stresses caused by the hammering. The crankshaft is then set up in a special lathe and the journals are turned to diameter, plus a few thousandths of an inch. A final operation in a grinding machine finishes the journals to exact size.

## Extra-air Valves.

J.D. (Kingston).-An extra-air inlet controlled from the driving seat is certainly a usefnl fitting, but it requires care in using, because if the mixture is weakened unduly the engine will overheat and there will be a risk of burning the exhaust values owing to the very high temperature of the escaping gases. On the other hand, an extra-air inlet is very useful when coasting down a long hill, as by closing the throttle and opening wide the air valve, clean, oool air is drawn into the cylinders, where it acts as a scavenging and cooling medium and also prevents oil being drawn past the pistons.

## Bulb Horns.

IH.P. (Bideford). We can certainly recommend no-twist horns, which have a very shrill note. They are superior to several other horns, and are unusually reliable.

## Starter Cables.

A.R. (Henfield).-The cables which lead from the battery to the starter are made of heavy wire, because a very large current is required by the starter, and thin wire would overheat.

## Flexible Pipe

S.G. (Totlenham).-The repeated lreaking of a copper petrol pipe can be cvercome by tho use of Petritlex, is flexible tubing manufactured by Blaisdell Petritlex Tubing Co., Cassiobury Works, St. Albans Road, Watford

## Speedometer Driving Belt.

P.S.R. (Durham). The only way to replace your endless fabric speedometer driving belt is to remove the bolts from tho fabric universal-joint spiders and then slip the new belt over the cardan shaft. If you do not feel inclined to do this, why not fit $s$ leather belt. the ends of which are secured by a fastener?

## Castrol Oil

A.B.IR.J (Chatham)-The peculia: smell of tho exhaust of a car using Castrol $R$ is due to the fact that this lubricant contans a large percentage of castor oil. Although the smell is perceptible to following traftic it is not noticed by the driver of a car using this lubricant, and we can recommend it to you with every confidence.

## 8 h p. Humber.

C.I.H. (London, S.W.14).-You are correct in believing that there is a saloon-bodied Humber Eight. This little car has an excellent performance; it will seat three adults, and naturally gives complete protection from the weather. We are forwarding to you a copy of the report of a recent trial run which we had in one of these cars.

## Saloon Car.

D.B.C. (Earlsfield).-As you admit you prefer a car to bo closed, we should certainly advise you to get a saloon rather than an open four-seater provided with a hood and all-weather side curtains. The latter have improved both in design and effectiveness during the last year or two, bat they must not be expected to give the same comfort as may be obtained from a car specifically designed to be generally closed.

## linproperly Connected <br> Terminals.

G.N. (East Ham). -The fact that you are unable to get your ignition timing right, coupled with the fact that you have just bought a new magneto distributor, suggests that the higli-tension wires are not connected to the proper terminals on the distributor. Are you sure that your new distributor casing is not intended for a magneto of opposite "hand" to yours-that is clockwise, instead of anti-clockwise. If this were the case it would account for the apparent confusion of the numbering.



#### Abstract

 responsibility for the opinions expressed thercin, give preference to those lefters which deal with subjects of general infcrest. Nio anomymons communications will bc accepted, but the uriter may usc a mom de plame if desircd. Leffers should be as brief as possible, but not abbreviated. We rescrve the right to


 make any alferations or deletions which we decm necessary
## CHAMPIONS OF THE THREE-WHEELER.

## Their Name is Legion.

## Morgans, Mercedes and Daimlers.

1 read with awe "Daimler's" letter in this controversy, and should think that his costly super-car must be the last word in luxury and speed. I am really surprised that he

## A Renly 10 <br> "Daimler."

 does not enter for the " 200 ," but, of course, I appreciate that a more or less circular track would be a bit incouvenient, owing to his catching up his own exhaust.It is noticeable that he has not met a Morgan on the road that can pass him. I have met this sort of driver before, only he usually drives a char-i-bancs.

Still, do not take it to heart, "Daimler." We Morgan drivers appreciate your little joke, and if I, for one, ever see anything resembling your "luxury" car, I arr hanged if I will not throttle down to about $5 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. and let you pass me just for encouragenient.
F. T. Hardy.

Chislehurst.

* Apart from other considerations, large cars are not * eligible for the " 200 " !-ED.


## Big Car and Three-wheeler.

I am ashamed to continue this controversy, but may I say one word more? I am now " up against" "Daimler" and a Mercédes. Perhaps I could myself draw comparisons from my experience of a " luxury" car which is

## A ‥Teaser <br> for "Daimler."

 not supposed to be inferior to either. Of course, as regards luxury there is nothing to be said. One cannot get for $£ 100$ all that is obtainable for a couple of thousand. From that point of view I might-if I were made that way-" look down with amused contempt at the driver of a three wheeler' ": but if the little three-wheeler, which I drive as often as the other, "bounced all over the road," while I had to " hold on to the wheel with hectic grip"-" hectic grip" is good-I might possibly, for very obvious and sordid reasons, continue to persuade other people to buy Morgans, but I should certainly not drive one myself.As regards speeds, I admit that $50 \mathrm{~h} . \mathrm{p}$. is capalle of bigger things, in certain conditions, than $9 \mathrm{~h} . \mathrm{p}$., but there are conditions, such as "Fair Play" mentioned, in which I do not think that "Daimler" would feel for me on my humble mount all the contempt which he professes.
As regards skill, everyone can drive a little car, and everyone can drive a big one-after a fashion; but I fancy that good driving tells no less with a small car than with a big one. I have had some experience of drivers of all sorts with all types of cars. As " laimler" says, "Anyone can bang him मeans about," although winy anyone should want to do so 1316
with a "top gear" machine, big or little, I cannot imagine I do not often " try to show what I can do" or "pul it across " anyone, in any kind of car, nor do I think that Mor gan owners sin more in this respect than others-" Fair Play" did not complain that a Morgan passed or attempted to pass him, but that he failed to pass the Morgan-nevertheless, it would give me much pleasure to meet "Daimler" in a Worcester lane when I am plodding along on a " beastly three-wheeler."
H. in. S. Mungan

## Luxury versus Efficiency.

As a Morgan owner I have followed with interest and enjoyment the Morgan-Mercedes correspondence, but the letter from "Daimler" has fairly raised my "petrol level." His cal' he says, " does $18 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. and 54

> Performance
> Pref rred. m.p.h., and puts him in the "luxury" class." The m.p.f. might, but not the m.p.h.! He remarks that it requires "some" ilandling, and then refers to tho "hectic" grip of the Morgan drivers. Also-"To chango gear on a big car reguires an artist": to "draw" the clutch out I presume! No-to change gear on a big car generally needs big boots and a heavy hand. The gear lever is a rarely used article on the Morgan, as it is a "runabout" with a high power-weight ratio and a good top-gear performance on hills.

What a nasty man "Daimler" must be. Look at his further remarks-" moderately fast, reliable-as cyclecurs go." Now for it! as "Daimler" said. In 32,000 odd miles in England and Wales I have never been passed on a hill by a Flercedès, Rolls-Royce, Fort, or any other type of "luxury" rehicle, including the Daimler, but I will not mako any further sweeping statement in case " Daimler" should chance my way; then I should buy a Morgan with a four-cam J.A.P. or overhead-valve Blackburne engine, and "Daimler" would have to fit a supercharger, or go in for something really big and tast, say a Levland Eight. By the way, how comes "Daimler" of the "luxury" class to be interested in The Eight Car and E'yclecar?

Morgan-J.A.P

*     * Every post continues to bring us contributions to this controversy, which was started by the subtly humorous letter from "Fair Play." Tho general concensus of opinion is that the Morgan can more than hold its own against the "luxury" car on tho scores of speed and easo of driving. Whilst we are always anxious to publish letters of general interest, we think that this subject hav been discussed sufficiently, ąnd must be closed after next week.-ED.


The SternOracle says: "There's a lot of talk about vitamines for people-how food without vitamines doesu't do you good. But what about cars? What's more marvellous than the difference that a touch of MAGIKOYL in a car's petrol makes? Here's Mr. P. Hooper, of Copnor Bridge Road, Portsmouth: he most kindly gives us his experience :-

Most certainly you may use the remarks I made in any waj you wish, and as a confirmation of those remarks may I add that my car is an 'Austin' Seven, and that in my daily journeys there is a certain bill which, before using 'MAGIKOYL,' my car would not climb without clanging down to second. The morning after I added 'MagIKOVL.' for the first time, the car climbed the same hill on top at 30 m .p.h. with 3 up. Ithiuk that speaks for itself."
"Do jou know a certain hill' that you have to climb on second? Use a little touch of MAGIKOYL-half an onnce in every gallon of petrol is all: the halfounce measure is on the can-and take that hill on top! MAGIKOYL, really lubricates the upper half of the cylinders.

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| Caloott | Calthorpe | Hillman |
| McKenzie |  |  |

## OUR READERS' OI'VIONS (contd.).

## A Criticism-and a Grumble.

## British Light Cars Attacked.

Three years ago I purchased a second-hand $10 \mathrm{~h} . \mathrm{p}$. Adler. It is still running perfectly. Apart from sparking plugs, the only replacement has been a crown wheel, the teeth of which

Germans I broke off when learning to drive. I amt
Preferred! considering selling my Ader and, being British car to replace it. But I do not believe any Britisb car could give me as good service as my old Adler has given. From the average druver's point of view no light car comes within measurable distance of the old $10 \mathrm{~h} . \mathrm{p}$. Adler. The truth is the Germans seem to lave the secret of making the rylinders and other necessary parts of the motorcar engine, whereas our own people are quite unable to produce a car that can be run for three years without breakages and endless trouble.
Without posing as an anthority, I may state that I have used my Ader in every kind of weather and, on frequent occasions, I have averriged 25 miles an hour for 50 miles or more I do not believe anyone could name a British car with as steady and safe record of service as my Adler.
I would like to see Britain first, but in this the Germans have beaten us to our henees. J. Bloomaerg. Golders Green.

- Our correspondent does not mention why he has such a - poor opinion of British light cars. We know none which conld not comfortally averago $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. for 50 miles, while pre-war types which are still in regular service more than refute his allegatinns with regard to the longevity of the refute his nlegations
british hagh mo-ED.


## The Metric System Criticised.

Being an ordinary "Man in the Street," with an interest in cars generally, I am often vexed at the ridiculous and, to me, meaningless use-peculiar to writers on motor matters
Pints or of the foreign term "litro" as applied Liires i engines. In the same category is to he writers of the use of the centise by Englishmen and English writers of the use of the centimetre and millimetre in giving measurements of machinery and parts, but in America the inch is the unil of measurement.
We are the pioneer race in engineering. Our products are the finest in the world, and to a non-technical individual the term " litre"--a measure of 1.760 of a pint-is of little use as giving a relative indication of output. Wo do not indicate the power potentiality of steam cylinders by the pint, although sucin would be perfectly consistent with the practice to which I object.
We have a finer set of measurements of all descriptiona than any other nation. An inch bears a defnite and proportional relation to the unalterable polar axis. The pint, of course, bears strict relation to the inch (cubic).
The French litre and also the metre and its sab-divisions have no proportional relationship to any defnite natural feature: and so leave most Englishmen in the dark.
When writing for our information why not leave the use of "" litre"" and " millimetre " for the French, and substitute for them the equiralents in good old British inches and pints? 1 suppose, however, the tatter would not he "classy" enough for the aristocrats of cars-fancy a $1 \ell$-pint British Anzani! Bristol

## Useful Accessories-Traffic Control.

## Addition to a Jowett Car.

Not being blessed with a surplus of wealth, ways and means had to be considered when I purchased my Jowett it st year, and after 12 months' uso I am more pleased than ever with th periormance, and it is, in my opinion Cornfort and most economical to drive. After receiving Convenience. though not absolutely necessary-which inspection lamp and starter.

Leather spring gaiters seemed desirable, and I thought it possible that I could make these and cover the springs miself. Sufficient oildressed black-faced leather was obtained for

NEAT AND PRACTICAL. By means of simple tools the ownermany usefu make tions to bis car with a minimum of expense. A letter on this page describes these two fittings.

the springs and laces at a cost of 4s. 6d. This was cut into eight shoped pieces, 14 ins. by 7 ins., and from the scraps circular pieces, 5 ins. diameter, were obtained for the eight laces; by cutting from the outside of the circle, leaving a teng at the commencement, laces 3 yds. long aid $3-16$ ins. wide were cut. A small bole was punched in the tang for a slip-knot. The proper method of cutting these laces is with a knife, but I found no difficulty in my method of cutting with scissors.

In fixing the gaiters each wheel was in turn removed, the spring well cleaned with paralfin and a brush, then coated with a thick gear oil and afterwards with Ambroleum, a pound of the latter being sufficient for the whole set of springs.
On driving the car, with the gaiters finished, it came as a surprise to me to note the improvement in running, and my only reiret is that I had not earlier attended to this addition. Undoubtedly a much neater job could be obtained by lacing the gaiters, but the spiral winding is simpler and it strains the leather well into the springs.
A cubby-hole that I have just made as a surprise for $m y$ wife has been very much appreciated; after it was finished an exclamation of, "That's just what I wanted!" well repaid me for the slight trouble I took in thinking out and making this detail.
The box is made from zinc, with a $\frac{1}{4}$ in. brass tube bent to shape and soldered to the front edge; a flange soldered to the box and fixed with screws at the back of the dashboard completes the arrangement, which, after being blacked, looks quitc presentable and does not in any way interfere with the ample leg-room provided in the car.

The photograph will give some idea of the size of the box. Bristol.

## A Plea for Traffic Controllers

It has occurred to me, and perhaps to many other motorists, to wonder why our Government cannot train some ex-Service men to act as traffic controllers on dangerous or busy cross roads. Millions of money are being wasted Train ex-Service in the payment of doles, and it is nothing

Men. less than a crying injustice that members of the A.A. and R.A.C. should have to see year by year thousands of pounds of their subscriptions expended on the payment of road scouts for the protection of motorists.
We are heavily taxed enough as it is, and I maintain that it is the duty of the Government to be responsible for traffic control and not to leave it to the generosity of others.

AA 199064.

> SPECIAL " 200-MILE" NUMBER.
> TO AVOID DISAPPOINTMENT
> ORDER YOUR COPY TO-DAY.

OUR READERS' OPDNONS (contd.).

## The Scott Sociable-Signposting-Mileage Records.

## Helping the Repairer

I noticed the discussion in your correspondence pages on assisting the repairer, and I particularly like the ideas of "C.B.M.-B." of your issue of September 12th. 'The advice

## -and <br> Oneself.

 as to assisting the mechanic oneself on ono's own car is a really sound practice, proriding that one does not become too knowing." and that the garage proprie for does not regard one's efforts as interference 'lhis idea is pasticularly applicable to my case, for one will often find garage people who are not familiar with the details of a ScottSociable, and unfortunately there aro still people afraidyes, afraid-of a Scot.t, either cycle or Sociable, under the, to me, erroneous improssion that it is an awfully complicated piece of mechanism calling for constant adjustamentsThis deters many fram ownership, and I may-pardonably, 1 hope-avow wat neither machine holds any terror for me, and my ownership of both goes back only to 1922, but by study of the instruction book of both machines I can claim to overhaul and take down either with confidence, and yet I am only a privato owner.

When I had reed of outside help I did as "C.B. M'.B." suggests-went with the garage oirner and gave him my knowledge on which to work.

I have several tumes been asked to give my opinion on these machines and it is extraordinary how some people fear the unconventional, and yet when one is familiar with it the Scott product in eitler case gives ono an insight into the henius-unconventional, yet sound-of the late Mr. A. A Scott, and persomally I can sce nothing in these delightful machines to "put the wind up" any owner.

Their fascination still puzzles me, but it is very real, and it seems a pity this is not more known.

The sensible owner will add to the pleasure derived from his car if he studies it well and knows "how the works go" on any make. Incidentally, this would have saved me 16 miles of hauling home one day if then I had have "known things," as my trouble conld have been adjusted on the road in 5 mins.

That laught me a lesson I never forgot!
Scott-Sociable 270.

## Eetter Signposting.

Your article on better signposting in a recent issue greatly interested me, and the idea of placing signposts 30 yards from cross-roads is certainly good; but owing to the way the posts are constructed I find it extremely difficult

## A Suggested

 Improvem: nt. o read the left-hand and forward arms I have just returned from a tour in Essex, and on several occasions I took the wrong turning through not being able to read the signs with suff cient speed.
## By placing two of the opposite arms of a sign- post at different levels as shown all four direc- lions may easily beread. Aletter on the subject appears on this page.



Nut having a reverse gear on my Morgan, I had to wheel and push the car about in very narrow lanes to turn round; whoreas, if signposts were constructed as shown in my sketcl, I should have had no difficulty in reading the left-hand and forward arms. No doubt others have experienced similar trouble.

* Reference to ineffective signposting has frequently been
- milde in The Light Car and Cyclecar. Essex is notoriously bad in this respect.-En.
と50

Mileage in One Day.
To whom stands the credit of having accomplished the greatest number of touring miles in one day? (a) In the least time.
(b) Single handed in a light car or cycle-

What is the car
Record?
I recourt the following personal effort in the hope that it may be of as great an interest to others as it will be to me to read of similar and, perhaps, more interesting feats by my fellow-motorists.
1 recently had a run from Combe Down, Bath, to Newquay, Cardiganshire, on tho Welsh coast, and back, at lotal distance of 320 miles, on a $11.4 \mathrm{~h} . \mathrm{p}$. Standard. Learnup Combe Down at 6 a.m., I mado Abergavenny for breakfait and a fill up of petrol at $8.30 \mathrm{a} . \mathrm{m}$., travelling vja Gloucester and Ross, a distance of 85 miles. Lack of traffic at this early hour made possible a good speed. Leaving Abergavenny at 9.45 a.m., I arrived at Newguay at $1.15 \mathrm{p} . \mathrm{m}$. for lunch and business. This latier part of the journey of 81 miles was covered in 31 hours.
The return journey took rather longer, owing to the fact that from Gloucester I was driving in darkuess. Temwing Newquay at 3.10 p.m., I made Abergavenny for a late tia and more petrol at $6.30 \mathrm{p} . \mathrm{m}$. After 40 minutes' vent for tea, I started off again at $7.30 \mathrm{p} . \mathrm{m}$. I pasced through Gloucester on lighting-up time, and thence in darkness to Combe Down, where I arrived at 10.55 n.m.
My actual running time was 12 hrs. 20 mins , or an averace of a lithe over 25 miles per hour over the whole distance of ${ }^{3} 20$ miles.

Ugavia.
An Appreciation.
From your condensed correspondence column I note that C.S." (Devon) offers the spinion that your reports on races. speed trials and so on are the most interesting feature of T'he Light Car and Cyclecar.
No doubt some articles appea! to one more than another, lat, to me, your excellent paper is interesting from cover to cover.
The front picture is always most interesting and real, while all photographs are pleasing and educative, not only to tho grown-ups but to the young.
Wishing the journal all success.
William McMerdo.

* Constructive criticisms fromi readers are just as welcomo as this letter of appreciation.-ED.


## Checking "Tip and Run."

On Friday last, on leaving my small car ar a garage for the weekend. I recejved a receipt upon which was filled in particulaurs of the make of my car, its registration number

## and the "dato in." A duplicato was re- <br> An Effective Remedy. tained by the garage. Before I can removo my car I must present this receipt.

The system is excellent, and, were it universally adopted, any such action as removing "a large Buick car" "while the garago staff was busy would bo almost impossible; or, if done. the garage proprietor could easily trace the owner of tho car, as 120 would have the registered number. and he could thus claim for the damage, if any, done to other cars on ito eemoval.

Sistem

## More Trouble from Flints.

I quite agreo with "Incensed" that it is time steps were taken to prevent small fints from being strewn about by the road authorities. What is the use of pulting these dangerous stones down when most of them are either carriod away or thrown on one side by fast traffic? I sympathize with "Incensed," as I myself have had to scrap a new inner tube because of one flint holing it in several places owing to my having to travel 100 yards or so bofore it was convenient to pull up.
E.H.W.

* Wo regret that, owing to great pressure on our spanc consequent upon the inclusion of special pages dealing with the 200 -Mile Race, a great many interesting letters are unavoidably hold over, and it has also been impossible to find room for the usual "Information Wanted" column. We shall reply by post to these readers who are sceking information - En.


It is wise counsel to buy a British Car, which is the cheapest in the long run, and certainly the most satisfying. You get "built-in" qualities with a British Car that you don't get with the imported article. Whilst buying British, however, you might just as well make a gilt-edged investment by selecting an ALVIS, acknowledged to be the " World's BEST Light Car." In a class by itself, it possesses exclusive qualities that have bred the maxim: "Once an ALVIS Owner always an ALVIS Owner." Not the least of its qualities is the lead it always gives in design and performance. "Runabout," in the "Autocar" of July 4th, said: "It is a road car de luxe such as I did not expect to see for ten years to come." That is a recommendation you cannot afford to ignore.

Why not investigate or write for a calalogue d THE ALVIS CAR \& ENGINEERING CO. LTD., COVENTRY
YONDON DISTRIDUTORS Menls's Ltd., 21 \& 155, GL. Forthand Street, w. 1

## AROUND THE TRADE

Mr. J. E. Price, who has rejoined Swift of Coventry, Lid., will control the distribution of their products in Coventry.

Mr. R. C. Robb, who has been appointed sales manager for London and the Home Counties for the Stevenson jack ing system, has taken offices at 95 , Great Portland Street.

Joseph Kaye ard Sons, Ltd.. have received a new Admiralty contract for the supply of their well-known seamless, ser-rated-steel oil-feeders, fitted with interchangeable spouts. Similar oil-feeders are available to the public.

We learn that the Manchester office and service depot of Ramsdens (Halifax), Ltd., manufacturere of the Jeavons lubricating spring gaiters, have been removed to 338 . Deans. gate, Manchester. The representatives are Messrs. Merriman and Howard.

On Saturday, September 6th, S. Smith and Sons (M.A.), Itd., entertained the children of all their employees to a party at the works. The expenses were borne by the management and staff. We understand that the children are :Iso given a party at Christmas

A useful indicator which shows the condition of accumula tors is the Carpax syringe hydromeier, which, if frequeutly used, will ensure good sorvice and a long life for the battery. This useful accessory, the price of which is 4 s . 6 d ., is marketed by the Carpax Co., Ltd., 312, Deansgate, Manchester.

We are told that, owing to lack of space, the Houdaille Hydraulic Suspension Co.. Itd., of New Bond Strect, W.1, will only have two exhibits at Olympia this year-the Houdaille hydraulic shock absorber on their own stand, and
the British Beri shire windscreen cleaner on the stand of the Midgley Car Lighting Co., Lid.

The sales organization of the Clyno Engineering Co.. J.tel, of Volverhampton, has been greatly strengthened by the appointments of Messrs. Rootes, Litl., New Bond Street (Iondon and S.E. Comnties); G. Heath and Sons, Birmins ham (Vorcestershire. Warwick and Staffordshive) ; \lessra. Lookers, Ltd., 19-35. Mardman Street. Deansgate. Manchester (Lancashire and Cheshire); Mandes' Mntor Mart, 100, Paris Street, Exeter (Devon, Comwall and Somerset) : and the Central Garage, Town IIall Square, Bradford (Yorkshire).

## MOTOR TERMS TRAVESTIED.



Solution to No. 29.
Owing, perhaps, to the ingemuity of our artist, the suggestions for this week's Motor 'Term were neither: sn numerous nor so gool as the previons wedes. The winner of the puinea prize however, Mr. A. W Wilkinsan, of 23 , Leathwaito Ioad. Clapham. S. W. . submitted a rery gond solution, "A Conling Fan." The most. popular terms were, of course, those which referred to cooling, "Water-cooled," "Wrater-cooling, and " Super cooled " being examples. Many readers favoured "Flooding the Carburetter," while "Streamlining were, "Water-in(c) tho Carburetter" and " $(\mathrm{K})$ nut and Wiasher," although the first-named was hardly a motoring term.

Readers are once again asked to keep to the rules of the competition. All solutions must bo submitted on postcardsother communications will be ignored. Only one solution may be put on each postcard, and it should be remembererl that the judging takes place on Tuesday morning. It is therefore, inadvisable 10 send in entries to reach us on tho Thursday or Friday following.

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## SECOND-HAND AND NEW

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## SECOND-HAND

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 A.B.C. 1924, Regent model, C.A.V. starter, lighting. very good condi-


 A.c. Wanted, A.C ears in exchange tor new modola; bighest market

 A.c., 1924 Empiro, 2 senter, blue, brand nnw 2316 accept $2270 ;$ clock, speedometer, patonl stecring, ola. Albert Farnell. Monningham
Line, Bradford.
A.C., sports alumindum body, very small mileago, pertect ordor, tax paid to December 31 st. $f 180$. The Headingley Molor and Engineering Co.
Lid., 8 Ouley Rd.; Leeds. A.C., 1321-22, sports, aluminium body, sell-starter, clock, speedometer. rev. counter, new Dnnlop cords, over 60 mp .by excellent condition. 150 guineas or exchange molorcycle and cash 51 Upper Richmond Rd $617-!35$
East Putucy. A.C., 1920 . standard model, C.A.V. dynamo lightigg. full eqnipment. including fire lamps, apeedometer, clock, tax paid. $£ 155$. Mandes
100 Gt. Portand St.,
$617.54 \mathbf{S}^{\circ}$ A.C., 1924 (May), ans-weather. 2-scator, apecial finsh. Marles steering.
 A.C., 1921, aport, model, fited with selt-starter, clock. speedometer. rov. counter, fauttess condition, 2165. Black and Finch, 222 Gt. Port
land St., W. 1 . Pbone, Museuni 227 L .
 f180. Smith and Hunter, 90 Gt . Portland St, W. 'Phone, Muscurn
8136 .
$617-866$ A.C., 1924 (July), 12 hp , Rosal 2 -seater. speclal finish and nobolstery,
 A.C. 1924, anyweather model, as new, 2290: 2923 Empiro model. in


 AC. snorta, 9.5, tax September, 1919, perlect mechanleal condition. all brand-new Dinlop tyrea, Sankey detachable whells 5 lamps. E.AV. तy.
 A.C., 1922 , lominium, oports, starter, copper exhaust. rev. counter.
 ALBERT 192211 hp 4 -seater, Highting and atarter, speedometer, cloct. most exceptional condition, fally guaranted, used, slu5, or ${ }^{2} \mathrm{mall}$ de 9,10, 11 Royal Parade, Weet Croydon. Phone, Croydon 2450-2451.

Reailers are referved also to "THE MOTOR" (Tuesdays, 4d.), which contains each week many hundreds of advertisements of new and second-hand cars of all kinds.

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

ALBE日T 4-scater, 1921, G2 medel, drnamo lighting nnd btarting Inxel for sear, dock, spectometer, 2 sparo whecls, hood cover, otc.; tho
 ALBERT, 1930, 11.9. 4-5calcr, serrice in sll-masher, dost erorhavice
 Phono. Westerí 4140 and 3568 . 1 ., 1 ammeremilh Rd. Kens-127

 ALVIS. New or sccond-hand. Try IIcily's. Tha Sole London Distribr-
 Mayfair 4203.
Alvis, 1924. $12-40 h \mathrm{~h}, 4$-senter de luxe, nem, unused, onls showronm aniled, list price e495, our price e3gs, or amau deposit bal nace orer 18 monkls. Allen-Rennett Motor Co., Lid., 8, 9, 10, 11 Moyal AMILCAR. Boon and Porter, lita., Amillcar specialista, ofler:-1922


 irio horn, Jinsting sido screons, 85 guineas: privaie oviner. 178 Hornsey
lid. Phono, North 3176 . ARDEN, miendid 2-ecater, 8hp J.AP.. 3 specis, starter, hood, screcn,
 ARIEL 9, brand-new, 1924 model, 4-seater do luxo model, seli-starter
 ARIEL IO, 1924, de luxo model. all-weather equipment. dashlamps.
 ARIEL. A-scater. chumm model, 1925 in excellont condilion, fiso.
MUSTIN 7. 1923, shock abeorbers, sido cumains, electrio and Klaxon horne, aparo wheel and tyre, escellent condition, tax paid, bargain,

 AUSTIN 7, 192J, allweather ebumms, perlect, Lax paid, fllo. IIarring
 AUSTIN, 1924, 7 hp , sports, 2eeater. Brooklandi model. dynamo lightnf. taxed, epara whee, cost, July, x 325 as hrand now, bargaln,
 AUSTIN, 7hp, 1923 model, aplendid condition. tax paid, $\mathbf{1 1 1 0} \mathrm{cash}$. AUSTIN 7, Juls, 192J, all-weather, chummy, taxed, mechanical starter, 2 new Dunlop cords and tubed, recently overhanled, perfect condition, AUSTIN 7, lato 1923 periect condition, complete accessorics, small mileage, nny trial at Colirsn Bay. Box No. 6726, co. Tho Light Car
AUSTIN T, $192 \overline{3}$ (October) mileage 3.000 , spring gaiters, aluminium Mdepmat, Sherborne, Dorset.
 Class condition,
jed. K nowle, near Birmingham. near Bentloy Heath Schools, Widney
$617-1132$
 A.V. 2-ncaters and A.V. monocars at ridiculous prlces, $\pm 20$ upwards;
deferred terms. Andrewis Motor Mat deferred lerms. Andrew Motor Mart, 151 White IInri Iane, Marnca.

 price f275, including jicence, Usual gamantec. Mann and Overion's,
itd. 10 Lower Grosvenor Place, S.W.1. Tel., Victoria 4634.617 .517 BEBE PEUGEOT, 7-48hp, 4-cylinder, almost ncw tyres, specdometer, tax less goods to drive anay, ss2 Ralue. Mr. R. Lindsay. 98 Vicioria Rd., Aldershot. BEBE PEUCEOT, $1915,7 \mathrm{hp}, 2$-seater, 4 -cslinder, 3 npeeds and rorersc,
 BELSIZE.ERADSHAW. Gordon Watney and Co, Lid., 31 Brook St., stock, guaranteed, trom f100; delerred payments and part exchanges,
RELSIZE-BRADSHAW 1922 2-senter, royal bluc, pordomeler, gracliometer, step mat, nll-weather curtains, Michelin cord tyres. fully equipped,
A. 95 . Ser below. BELSIZE-BRADSHAW 1923 2-peater, dynamo lighifge and e- lesiarier
 BELSIZE日RADSHAW, 1924 . 4-seatcr, atarter. dynamo, all-weather, 5 whecls. Dunlop cords, specdometer, Triplex screin, Wefco gaitery, 7 monthe unoxnired maker. bowden extrazar, tionas, condition and appearance cxceptlonally good mileage


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

gelsize.bnanshaw, 1922 , 9 hp 2 .scater and dickey drmamo inghe
 BELSIEE-BRADSHAW, 1922 , acli-startcer, dymamo lightinge sncramoter 2-skater, dickoy. disu whe
St. Thomas Rda
Hackncy
BELSIREBAADSHAW, 1923, 4 -acatcr, lighting, starling, nll-weather
 BENJAMIN, danonatration car, sporta model, recisicred lans menth,


 BLERIOT-WHIPRET, 1923. lithe nsed, 5 perfect efres. clectide Ins: hight rnd other necasorics, excellent running order
Qucen's Itead Garage, Finchles. Finchley
G6.
 Tube)
 BLERIOT WHIPPET, 1925, 8hp, 2 -senter (brand new). elpotriw hither,


 B.S.A., 10hp, 2 scezter, dickey, de faxe mosdel, dqnamo lightins




 augarri, 1914. Breselia model, sporta, 2-seater, excepplionalls fazt
 CALCOTt 19192 -seater. 10 hn , nn-negleted, 4 new esres, clect He hooter
 CALCOTT 1921 -scater, dickey, Ilucas lighting anil starter. speculs


 Condition, burgain. Ablby, 162 Grosvenor Rd., Vauxhall Briduce 617.581 CALCOTT, 19212 .scated counce wilt dlekey, dynamo nnd starler excel-

 Wilvins, Slmpson, opposite Olsmpia, flondon. CALCOTT, 1914, 10 hp, 2 -seater, dickes, plectric lighling, nl1. weal hry equipmont, good running ordcr and condition, lax pald, e3887.1114
 CALTHORPE, 1921, 11 hn. 4 -seater, starier. renainted in execllent conCity Rd, Chester. ${ }^{\text {dition }}$, Tho Chester Eugineering Co. (1918) 1 I7-918 CALTHORPE, 1922, 4 -scalce, de luse, spacdometer, clock, rear sereen, reall leather. licensed, marrellous bargain, 99 guineas. Julian, 84 Rroant 617 -907
St., Reading. Phiono 1024. CALTMORPE 1922 10hp 2 -seater, dynamo and atarter, dickes anal ep-
 CALTHORPE, 1922, 10 hn , sporta model, Etarter and 11 hiting, spare
 CALTHONPE 1924 nicdel 2 -ssater. double aunken dickey dynn mo 17 ight
 CALTHORPE 19142 2.seater, renills good mechanical condition ${ }^{2} 28$; ex
 CALTHONPE. Moores Presto, Croydon agents Calthorpe cafs. Promntost delivery new models with effrient service to follow. Large slork scond

" THE MOTOR MANUAL." The most comprehensive handbook on motoring oblainable.

# SECOND-HAND IIGHT CARS AND CYCLECARS FOR SALE (conlinued). 

 CALTHORPE roupe, 1923, 4 , peed model, Mell:ord cord, good order,
 CALTHOAPE, 10hp, coupc, 1915, electric light and starter, splendid CALTHOAPE, 1919 model, 2 seatur and roomy, doublo dickes, 617 lighting
 CARDEN







 CARDEN, 1F25, 7hF, こtcalcr, s19. Rous, 50 Tulketh Hrow, Preston,

 CITROEN 1.23 12.4 hp + -atier, lighting and starter, Hartlord ebock
 denosil
10,11
10 CITAOEN 102S 114 4. ABter, excellent randizicn, fully equipped, ouner CITROEN, 1924, 7 3hp, J-seater car, in uso 2 montha only, and an
 CITAOEN, 11 . He fuxe, fully equipned, very nioe condition, caxed

 Relcer, achilitil 617-141

 CITROEN 1923. 4 water, Jynamo nad alarter. excellant condilucu. Eashon Rid. London. hire purchane. The Lught Car Co., 331, $617-602$ CITROEN, 80 guineas, 4 -seater, taxed, starling, lighting. new hoods
 CITROEN, A-seator, October, 1921, owner-driven liflle used, palnt and

 Rd, Lnndou.
 CLULEY, 1923. 111ıp, 2-seater all-weather, taxed tor yenr, smals mile 665
 Ihmmersmith go. Notor Co., 24J Hammeramith Na.. 6. 617.836 CLULEY, do fuxo model, 2 -sealer, brand new. 1924 engine, fully guaranted, thop soiled, 1 ist prico this molel $£ 350$ roduced for quick sale 10

CLYNo. Mcbes and Mebes (Est. 1893), Clyno specialists and diberibu-
 duced price $£ 165$ one Occasional 4 -eazer, liss price $£ 208$, redond prico Anforight-hand change. 144 Gt. Portiand St., W. 1. Pbone. InnRham CLYNO, 11 hp 1924, occastonal 4 yoater, wilh adjustable driving teat, key whools, clock, specdometor, Thply gradiont moter, stepmats, pilo car fols inalde, aluminum number platea, body palnew bluo, with polished bonnol, S-lamp lighting set and ataricr. revarnished lati monh, whole
car as now. Years tax naid, and insaranco tull Juls, 1925 included, prioe
6168 botweon Apply, Ownor, Decs, Lingfield, Surres, or phone 10 . 17 ekenn
617 and
 CLYNO, several brand-new, 1924. 4-acaler models. standard apecification, janamo lighling and starter, clock, gimedomolor, all-wather

 Choscor.

## SECOND-HAND <br> LIGHT CARS AND CYCLECARS FOR SALE (con'inued).

COVENTRY-PREMIER 1922 2-seater with double sunken dickey, 5 dotachable diso wheels, kood oet of numlop cordia all round dynamo bight-
 COVENTRY PREMIER, 4-wheeler, dynamo, de., 262 10an: exchangea, COVENTRY PREMIER
 31se. 260, can bo ecen alier 6.30. 24 East st.0 Bromley. Kent. 617 COVENTRY PREMIER, 8hp. 1921, 2-seater, water-cooled, ikjarmo

 COVENTRY PREMIER 1921, 3 wheck, dickey, Rax, \&narance pald, electric, apare whel, all accenories, overhauled, trial, 268, near otler.
Norton. 172 Brownhlu Rd., Catiord. COVENTRY.PREMIER, 1922 (date Euaranteed), 2-seator, dynamo lishting, 8 hp, water-cooled, hood, screan, diso micela, lampa. Spato Wheel biggosi Margan in London Sy gininasi archange motorcycic.
 lent condition, yeara Lax, \&60. 395 Reddings Lanc, Hall Green, 617 - 639
 CROUCH, $192 \overline{3}$, coupe, with solf-starler, speedometer, atc. re-uphol-

 DE DION, 1915, 10hn, small 4-seater, atream-lined hody, dynamo lighting, 5 detachabion rime excellent ondition throushout and fery emart Palace. Sydonham 225. ${ }^{617979}$ DEEMSTER, 1923, 2-zeater and dickes, Anzani cngine, repainted, over-
 OEEMSTER 1920 2-seater, perlect condition, very 2art, $\boldsymbol{s 1 2 0}$. Ware, 56
617 -x 860 DEEMSTER Royal all-weather, $12 \mathrm{hp}, 1924$ model brand new except for

DERBY 1923 sports 2-seater, fllted sunken dickey, overhauled, repainted thin month, dsnamo lightring, onare wheels and trrea numcrous acces-


 DUPLEX, $1921,10.8 \mathrm{hp}$, small 4 seator, dynamo lizhting. 5 Michelia detachables, nearly new tyres, leather upholatery, one man hood, aillweather oquipment Eantug rear screens, magnificont condition, 617.1105
63 Solon Rd., Brixton. ENFIELD, $192 \overline{3}$, snorts, 3 -seater, all-weather, starter, 5 lamps, full eqnipmant, now, condition, $\ell 195$, cost over $£ 500$. Laslio. 26 Green Rd, $618-999$ EAIC-CAMPBELL, $1920,10 \mathrm{hp} 2$-sceter, clock. Fpeedometer. Fell 15 red . in axcellont mechanical condition. 285.. The Chether Engincering-90.
(1918). Lid. Cxy Rd., Chester.

ERICLONGOEN, 1922, 8hp whter-cooled, super-sporth, streamlined aluEninum body, red chas sin, dynamo. 5 detachables. apeedomotor, clock gauge. Orcrhauled 1924 at cost of $£ 50$, receipta shown. $\mathbf{x 9 0}$. 19 Terra-
FIAT 1922 Lourer. $10-15$, mechanically perlect. Jost painted and done up as new. licensed and insured, and trial. s195. Holmer, 41 Sit Peeris 617574 G.N., 250,1922 dynamo lighting, clock. speedometer. otc., 5 detachNorth Wembley. G.N.a. Wo have sercral good second-hand cars for sala; reaconable prices.
 G.N. 1921-2 10 hp 2-veater, dynamo lighting, apeccometer, aparo wheel.
 G.N, 1921. 8 hp Lucas denamo lighring. spare wheel. sood tyres, fully

C.N. 1920 (latc) 8 hp 2-seater, dynamo lighting, speedoractor. electrio
 C.N., s35, 1920, dynamo lighting, oversize tyrea, hood, side curlains: 78 WiUsh St., ILampstead.
C.N. 1920 model. completo with Smith'g full dynamo lighting set, spare Wharley, Roy tiant, wood bridse, Sulfolk.
O.N. specialists. Repairs: apares of every description in stock; largest servico akency in Millands. Tto Redditch Garagcs, Lid.. Redduch.
2xz-496
Phone 117.
 C.N., $1920-21$ I Ieguro, Jynamo sperdometer, licensed, aluminium body.


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

 Chancis.
C.N. 1922 . 2 -seater nnd dickes. Frazer-Xnsh oh.h.r. enkine, dynamio, C.N., i 923 . 2 -seater, dickes, fully cquipped, excellent condition, 90 as. Below.
C.N., 1921 . fited with 19222 -senter bady sunk dickes, dyanmo lightG.N., 1921. 2-senter, dynamo, fulls eavipped, repainted, dickey, excel2unt condition, liconsed, 63 Eulucas. Below
G. N., ${ }^{1922,}$ nill-wather coupe, 2 seater, dickos, dynamo equipped,

 thave 1920 touring model. $£ 35$ : 1921 tourng medel $£ 47$ 10.: 1922

C.N. 839 10s. 1920 in exoentionally fino condikion hroughout.

 C.N., 548 . erchnnges, delerred payments, 1921 G N., 2 -scater, hood,

 dane. Barnes. Phone, Putney 1827. Notor Mal

 Winoreccle; weekly payments, Wandsworth Motor Lxchangr, Ebner 617.565
C.N., 1921 Regere. aluminium body been carefllly driven and well


S.N. 2-seater. 1921 dicker seat, drnamo lighing, speedonecer. clock,
 C.N. 12332 soner tor, dickey, shath drive rany extras, in perfect order,
 C.N., 1922 dynamo. specdameter, delachable whels, dickey only done C. N., 55 guineas. very latc 1922 , dynnmo $1 / 1 \mathrm{ghinng}$ tax paid. sunken C.N. excellent order, fust repninted French srey and new hood fited,








 c. W. K. 10 hn 2 anate. efle endid meohanical condition, nny trinl. good apnearance, $x 45$ or small deposit, bnlance orer 12 monthly instalments

c.W.K., 1920. 10 ho , 2 -senter and alckes, dy nnmo ilifhling, hood, fulls

G.W.K. 2-senter, reliable running oriler, detnchable whecls, Zenith, C. A.V inagneto, spot cabb, drive awny. $£ 32$ 10s. $75 \mathrm{Kew} \mathrm{Rd} Richmond 799.$.
C.W.K. 2-seater, splendid conditlon, 540 or offer. 75 High si, Wan-
617 eciga
C.W.K.̈. $£ 35$ We hare scrernl G.W.K. care in atock from $£ 35$ unwards;
any trial ran given: inquirica invited North Essex Molor Co Nлffon any trial rangivan: inquirica invited North Essex Motor Co Sjifron
Winden. Phone 16 ,

G.W.K. coupe, Normbar, 1923, maroon, electric lighting and etartiag.
 C.w.K. $1924 \begin{gathered}\text {-seater, dolifared } \\ \text { S210 }\end{gathered}$


617-925
G.W.K. 1915-16 2-scater, excellent condition, unused slnco Junc, 1922, SWart appearance, uaual accessoried, laxed, £25. Hurst, 3 rulso 11310
G.W.K. 1921 2-3-seator, donble dickey, dsnamo lighting nrw tyres all
round. taxed, in good conditlon, 65 guineab. 51 Upper Richmond rd. Liast Putnes.

17-134
G.W.K., 10 hp . 4 -cylinder, 1921 , do lumo 2 -renter, dollble dickey, elcetrio ider larger car in cachauge. Mathews, 49 Sidwell St., Excieri-1134


## SECOND-HAND <br> LIGHT C.ARS AND CYCLECARS FOR SALE (continued)

G. W.K. 9.51915 2. senter, dynnno lighting, detachablo wheels, spare,







 HILLMAN raciug car, run consistently at Brooklands, stritminacil



 HILLMAN, sports model, polighed aluminium hody dynamo lighting.
 Phone. Alustemm 539 .





 HUMBERETTE, 1914 . 9up, 2 .seater, dickes, in exenllent condition, Humber

 HUMBERETTE, 832 , exchanges defecred payments, 2 -seacer, 8hn.




 JOWETT, 4 -scaler, late 1923 , with extras cost 117 condition 617 -500 PLione, Milcham 1597,
 KINGSBURY JUNIOR, 1921-2. 2 -seater, water-cooled, 3 -speed, reverso.


 KINGSBURY JUNIOR, water-cooled, tax pald, 3 specds and recerse,



 LACONDA. An oxceptional offer. 1924 K.K. 2-scater, semi-coupe, grey, upholetors. harso dickes, funy' equipped ai makers' specitcatious, ns new,
 Ished 1893), Tho Original Light Car Specialists, 144 GL. Portland St. $617-482$ LAGONDA coupe 1914, electicic lizht, tparo whel recently thoroughly
 LAGONDA, Irto 1921, 4-scater, starter, full eguipment, all-weather hond, oxcellent condition, Inxed December, deturred terma, exchanges, bergan
£95. Cass Motor Mart, Lid., 5 Warren St., W. Muscum 623 LAGONDA 1923 coupe, repainted and overbnuled, e155. Below 617-560


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

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

MORGAN. Momac's have the following Morgans for alo. All fuily 1920 Grand Prix, 8hp w.e. J.A.P., dickey geat at rear, tax paid. £75. 1524 De Kure, 8 hp w.e. J.A.P., dgnamo, fully equippod, Lar pald, 2125
 $\pm 122$ 10s.
1924 Aero, $10 h p$ w.e. Blackburne, dynamo, Dunlap atraight-sided tyres, hood, frontabeel braken, etc., mileago 700, 2140
1924 Slandard model, 8hp a-c. J.A.P., folly equipped, grey, f110.
Any of tho abovo machince can bo nupplicd on deferred terme. Your present machino accepted in part payment. Homac"s Morgan Servico
Depot. 243 Lower Clapton Rd., N.E. Phone, Dalston 2408 . $617-562$ MORGAN, do luxe, excellent condition, paintwork as new, bargain, f75. MORGAN, 1922, GLandard, 8bp JA.P., a.-c., goad condilion. licensed, MORGAN, do luxe, 8hp JAP. w.e. englne, overhauled Julg, new cylinder, ote., good condition, all accessorics, acetglene, P. and L. lighinag.
$\mathbf{\$ 5 5}$. School fouso, Middlo Green, Slongh.

 MORCAN do luxe, 1921 model, price f55 Margan Anzani, 1923 model, Gno bus, \&75. Andrew's Motor Mart, 151 Whito Hari Iane.
Barnes, S.W.13. MORCAN ranabouts. Writo for our apecial list. All modeln in stock, trom 552 10s, to $£ 142$ 10s. second-hand. Overhauled and guaranteed Exchanges and delerred terms arranged without delay. Elco, Lte. 11.15 MORGAN, \&59, cxchanges, delerred payments, 1920 , do luxe, 2 seater, arrocoled, hood, acreen, lamps, Iaxed, fast, amart. Seabridge, 35
IIansler Rd., East Dulwich. Sydenham 2452 . $617-506$ MORGAN de laxe, 10hp MA.G. water-cooled, Beted clock and tax pairl, MORGAN do luxe, 1920,8 J A.P., whale recently overbanled, repalnted
 MORGAN, 192J, Laraily, w-e Blackburne, specdemeter, stoll mileage, MORRIS-OXFORD, 9hp, 2-seatcr, defachablo whechs, orerbauled, taxed
f35. 620 Adelaldo Rd, Swiss Cotage. N. W. 3 . NEW CARDEN, 1924 (March). Family model, accommodatee 2 adalis and 2 chilcren, 60 m.p.g., electrio light, kick-startcr, mplendid conditiun, NEW HUDSON, 1922, J-wlieeler, fally equipped, dynamo lighting. spart on exchange 1923. 1924 chummy or 4 -seater light car cash adjasiment. Johneon, 20 Ballour Rid.. L. Sands, Nottinginnm
 RENAULT, $1923,8.5,2$ seater, starter, Laxed, exceptionally nice conRHODE. Occasionsl 4, exceptionally powerful and tast. pertect order throughout. Aax paid to December Jist. Rl00. Tho Headingloy Motor
RHODE, 9.6 hp , 1923 , all-weather mion light blue, black wings, dynamo lightiug. solt-starter, spedometor, clock. mifror, electrio and or dianry hord tyres.
Balor.
RHODE, 9.5hp, 1923. ©ports, 2-senter, maure, alaminium wings, dy mamo lighting, spoedomoter, clock, snotlight and
vary smartand appoarance is now, fig. Below.
RHODE, 9.5bp, 1922, occasional 4 seater. grey. black wiogs, dymamo


RHODE, 1922, chummy, dynamo lighting. dashlamp, clock, speedomood, side curtaina, excellent mechanical condirion, f105. Watkins, Frogmoor Cottage, Rlekmansworth. 'Phone, Rackmansworth 75. 617 -168 RHODE 9.5hp 1922 occasional 4 -scatcr, dynama lighting, specdometer dashlamp. ${ }^{6}$ paro wheel, fully equipped, excellent condicion, runs per fectly, blue, black wings. trial, appointment, flso. Skinner, 310 617 (ower
Addscombe Rd., Croyden. RHODE, $9.5 \mathrm{hp}, 192 \mathrm{~J}_{\text {, }}$ sports 2 -seatcr, royal blue, black winga, dynamo horng 4 new Ranson tyras greasc-gun lubrication, tax naid, 40 m.p.c. 60 m.p.h. overhzuled and repainted in May bs makers. 8200 . New-
bold. 75 Kenilworth Court. Putncy. S.W. 15 . RHODE, $9.5 \mathrm{hp}, 1923$. 2-scater smorts, red, aluminium zings, tyres as
 Cotiage. Sandbanks, Dorset.
RHODE, $9.5 \mathrm{hp}, 1922$ (Doccmber). ©ecastonal tecater, dyomo lighting self-starter, specdometer, clock, dashamp, cocaanut and robber mats. best ofer reccived next weck secures. Callins. 5 Asbles Terraceinath RILEYS... Gusrantecd eccond-hand Rilers, ororhsuled by Riley
spectalista. Mas wo send you monthly Usts? Lowes Motor Works. Sussex.
RILEY, 1922, 4-seater, grey, exceptional condition thranghout, expert examination welcomed, $\mathscr{1} 145$. Streston and Smith, 12 Woodstock St.
Uxford St., London.
617.572 RILEY, 1922 , 11 hp . 4-seater, with all-weather equipment, rery nine
order. taxed for rear. E215. Newham Motor Co., 245 Hammersmith order. taxed for Fear. s215. Newnham Motor Co., 245 Hammersmith
Rd., 6. Phone. Harnmersmith 80.
RITZ, 2-seater, 10:2, 4-cylinder, under 5.000, bought 5-scater. f50.
Blodworth, Fromo.

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

 ROVER, 192J, chumms moisl, oripinal isrem, laxed 1924 the whole New is in absolutely new Cond
ROVER. 8hp, 2-scaler, 1922 , slandard muipment, irial, s80. Fi. P ROVER 9, 1924, 4-sealer, 4-cylinder, water-cooled, o.h.r. starting, ichting, equipment, mileago 500 , taxed yesr, insured, Joly, 1925 , abso bridge Grovo Rd.. Kingston.
ROVER, 192s. 8, chumms, gref, specdometer, etc, most exceptional

 FOVER 8, 2 -sealer, dynamo lishting nnd self-starter, splendid condition, Honnet Motor Co. Led, 8, 9, 10, 11 Royal Parade. West Croydon.
Phono. Crosdon $2450-2451$. ROVER, 1921 , 8hp, 2escaler, spare micel ifres rery kond, mmant ap
 ROVEA, $1922,8 h n, 2-s e n t e r$ and double dickes, specdometer, spare
 ROVER $1921,8,2$-seater, de lixa model, leather upholstery, cic., spleg-
 ROVER Eight 1924, electric startor, spedometer. finc condition, x110,
numer returning abrond. Box 6718 , c.o. "The Lighe Car and Cyclecar.: relurning abroad. Box 6717 -c858


ROVER, sg5, instalments ennsidercd, 192 J (late), 8hp Rover 2-seater,


ROVER, 8 hp, 1923 chumme model de luxe, with gell-starter, leather upholktery, elork, кpeedometer, nll-weather scr
mnd in specially nice condition, $£ 110$. Below.
ROVER, 8hp. 1921, drnamo lighting, spare wheel, very nice mechaaical conirn. Bonapparnce, 59. Below.
ROVER, 8 bn, 1922 , 2-seater, dinamo lighting. apare wheel. specdometer, wire. Paddingion 6049; or call Kirk nnd Co., 22 Pratd Si, Paddington,

ROVER 8hp 1924 2-seater, dickes, starter, many extra fitings, as new
citio: alsa sers apecial 1921 2-scater, most mittaclively flied and welf cl40: also rers apecial 1921 2.scater, most atiraclively filced and well
ROVER Eighta, choice of 3 . Including de luxe 2 -qcaler ancl chummy

 ROVER 8, 1922 , de luxe, smeedometer. efc, taxed, food tyres, new J'utney.
ROVER 8, de luxe, 1923, Glted clock and specdometer, tax paid Dc cember.

St. $8 t$.
$617-576$
1921-22, dynamo lightinge usual equinment an fic following extras:-Folding dickey seat, clork, specdometer, epring faiters, petrol gauge, mirror, sido curtains, hood oorer, mahogany dash


ROVER B, $\quad$ I921, perfect condition, \&57. Craig, 108 Jriwards Rd,
Erdington, Birmingham. AOVER 8 , late 1922 , taxed and Insulcd, mereral extras, splendid con
dition, 885 . 85 Milfelds Rd. Clapton, F. 5 . KOVER, 1924, de luxc, 8 bp . 4 -seater, dark red, only used fow weck sido curiains, many extras. licensed year. beautilul condition, $£ 250$

ROVER 8, the bargain of the weck. 1924 4-eater. purchascd new months usc, any trlal or examination, delirer by road anywherc, f110 Write, rall or phono The Hampton Eng. Co., St. John's Rd., IInmpton
617-552
Wick, Middeser. Kingsion 202 .

PoVER 8, June, 1924, perfect, lady owner going abroad, electric
 ROVER 8, chummy, June, 1923 specdometer, extra air, mirror, wiper
cte. 6,000 miles. best over $\& 100$ Speacer Are., Scunthorpe QOVER 8,1923 , chummy, lax raid, little used, excellent conditon, appearance as new. £105. Owner. 126 Onslow Garderls. Wallington, KUVER, 9hn, 2-seater and double dickes; lalcat model, starler, elfghtls shop-siled. liberal exchanec allowaneo or delerred terma. Boon and
Porter. Litd. $59-161$ Castelnau, Bnrnes, S.W.13. ROVER. E88, 8hp, 1923, 2-icaler, as ncw. dickey, sporiomere, side curtain, taxci, great bargain. Arbby, 162 Grosvencr Ri., Vauxball 617.808 ROVER, 1922. 8hn, 2-enter, exerllent condition, f80. Bartlette. 93

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

 ondition, 113 s.
ROVER. 19228 hp 2 .ecater, dickes, dennmo. cmuipped, licensed, very



 nover 8ht 19232 2.sener. excellent rondition, f90: frchange or hirm ROVER 8, 1923, nl!-wenther 2 -scafer, £68 64 Chnrelh St.. 617.604 rid
ROVER, late 1922. 8lip, repainted primrose, low prossire on tyrue

 Excleigh. Slarcross.

 SALMSON. Mann and Mandower, Lid., apthorized ngents for Sulmon

 SALMSON, mith Brooklands type boits, purchased end Ausues, 1924 ,
 SALMSON, £95. 2.sgater and dicker, dynamo lighting. apare what


 special dianranco pricico $£ 165$, or small deposit, balunico over is monihs.




 slerced 3 Bediford cord. in absolutely exquisite condition, taxect
Motors, Bromiog. SINGER, brand-ncw, fhop-ailed 4 Eepater do luxc, as listed $£ 235$, accept




 SINGER 191.5 -srator, dsmamo lighting, caxed, extellent conclition, bary



 ton $\dot{\text { did.0 }}$. Surbiton.
SINGER, ©85: cxchanges. delerrel payments, rers nice 1919-20 Singer

 curtaine, atarter, $£ 170$ or near oller. Cane, 185 East Dulwich Grove,
G.E.22.
$617-129$ SINCER, IOhn, 1914, 2-snater, dirkey, fully taxeri, Insurance, dymamo


SINGER 1924 , 4-acater slo Inxe, brand new, sliphtly showroom golled, simpson, oppasite Olympia, Iondon. Telephonc, Jhammersmith 238 . SINGER, 1924, moder de luxe. A-scater: the car whlch just completed i 2,000-mile tour through the Ewies Alps without a lorced stop; guaran-

 SINCER, 1922 , do loxa 2-seater, dickey, repainied and overliauler, new hood, 6 tyrea (2 unused), taxed and insured. Fuaraniect frst-clasamechanical condition and rery emart appearance, any examination or lrinl SINCERS. Sen ollr anerlal olfer of y year's frce Insumnce. Pago No. 15. Henmotors, $30-32$ IIIgh SL., Wendsuorth, S.W.18. Battersea 1509 . $617-548$ STANDARD 2-scater, $95 h p, 192 J$, oh.r. englae, dynamo lighling and ar, in firstolasa condition el 145 . cxickey, taym lur year, res Phone | or wire, Paddingion 6049; or call Kirk and Do., 22 Praed St.. Prddiog |
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taniand. Muores Presto Croydon agenta Standard cars. Prompteat


 STANDARD, 1524. 114 hin, 4 seater, all-weather body, dynamo lighting
 STANDARD, £5ū; 9.5 hp 2 -scatcr, dickoy, 5 detachable whcela, lampa,
 STANDARD, 1935 9.5, 4 meatur, self-starter, halloon tyren Dar De-
 STELLITE, 445 , Whances doferred pasmenta, 1 gl4, 2 -seater, dickey, Ihd., East Bllwich. sydenharn 2452 . STELLITE, whivered 1920, 2-seater and dickey, dynamo lighting. speedo-

 swift. II Prowio, Croydon agents Swift cars. Promplest dellvery





 WIFT, 1902. - water, with dickey. 6 det achablo wheols, dynarao and
 SWIFT 10, Qtater, 1920, double dickey, taxed, guarantecd porfect oon-



 8136 . Smith and Munter. 90 Gi. Portiand $s t$. Whone. $\begin{aligned} & \text { 617.868 }\end{aligned}$
 TALBOT, 1924, Bhp de luve, sell-starter, magacto model, Martionda an
 TALBOT, 1924. 10-23, 2-scater, dickes, starting, lakhsing, numerous
 TALBOT, lato 1923 , $10-23 \mathrm{hp}$, 4 -seater, do luxo, in rery pire order, any trjal, oramination, 200 ens. exchanges, extended payruents Mears and
BLshop, 225a llammeramith RJ. Mammeranailh 2230 . $617-528$
TALBOT, 10-23. 1924, theeequarley coupe, equivaleat to niw. laxed and witis cxtraa, $£ 340$
iALBOT, 10-23, 1923, special three-quarter coupu ns new throughout.
ALBOT 10-23, 1923, 4-seater, all-weather, de luxe, mon lixarion
 TALBOT, 8-18hp, very excellent condition, newly nainted, fully equipped, many extrag, vory fatt, 60 m.p.h., owner going broad, muat aell guickl (
TALBOT counc, $1923,8-18$ many extras, 2 sparo wheels, machanica
 TALBOT-DARAACO, 1922, 8bp, 2-scater, Anished tawn, leather up-
 TAMPLIN. 1922, eide-by-aido 2-seater. 8bp. 3 speeds and reverse mechanical condition and tyre excellent, genuine eacrifine, 23910 . or exchange good solo motorcycle. Tho Croft, Let-on-Solent. Gospart,
TAMPLIN, 1921 ianden, alaminium winge, spredometer, disch, escen (
 land St., W. Mayfair 4027 . T.E. 1922. water-cooled,

TEMPERINO, ${ }^{1921-22, ~ 9 h p . ~} 2$-seater, 3 speeds an revarse, electilo Tedungion Garage, 160 High St. Teddington. Kingstóa 2562 orchage


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UNIT 1920 2-geater. excollcrt condielon f40; exchanges or biro VIOLET-BOGEY, 7hp, aporting 2-noater, 5 detachablen, dises bulboil
 on, Birmingham. 617-e909 WESTW000 syorts, 1921, overhead Dorman, ontaido copper exhaust, cry tost, el Railton, Cobham and Co., Led., 5 Cumberiand 81 WOLSELEY 10, de luxa model. perfect order. many oxtras. Lax paid. tand. Tho Hoadingley Motor and Engincoring Co., Lid., a Otloy Rd
$618-902$ W0LSELEY 10, 1924 , purchased 3 weeks ago, absolutely, now, conf W. 617 -ه912
 WOLSELEYS, 1924, £50 and you aro on the road with any 10 hb nodol Lax Betore buying accond-hand cat aree his ayments. Catherine St. Aldwyb. W.C.2. Regent 691. Notor Co, Waldori 617-964
 showroom wiled, s265, unual prico ES25, apecial bareann: canh or eaty poymenta. Wikini, Slmpao, odporlt 238 . 617-1152 WOLSELEY-STELLITE, 10hp, aports model. fitted with brand-new 2 radiator, 5 dicm whele, nod tyrcs dyapmo, 5 electric lampe and har overy possiblo bearing rebuhbed, no nign al wear anywhere, radiator.and all fitimss replated many extras taxed till December, and trint wel

 lovaly condztion, bargala. Ashby, 162 Grosvenor Rd., Vauxhall Bridge $617-583$
Q.w. Victorla 3433 . WOLSELEY, 10bp. 1 ato 1923 model, 2 -eater, complete with dynamo apare whel and tyre, hood, Lools. oto., in excellent order and condition.
 WOLSELEY 10, 1922, 2-ncater, double snnken dickey, dynamo ughting Later, 12 parments of 88 Sercral other? 2 ad 4 seatero
 WOLSELEY 1923 Thp 2-soater, doubloscreen. speedometer. excuptiona Ki7-843 WOLSELEY 1924 10hp 2-Aeater mith dickey, starter, side screens
 WOLSELEY 1921 2-seated ooupo, dynamo and starter. excollent condi614' Euen Rd London 601 LE ZEBRE, 50 per cent, uoder list. Brand nes. 8 hp, chummy 4 bla whels wire, $710-90 \mathrm{~mm}$. cord tyrea full equipment, complete tor road, 2145 ; 2 -seater, 1135 ; chamin $£ 100$ exchangeq, and detcrred
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