

Vol. XXVIL No. 685
Friday. Jan. 8. 1926
Registerned ot the GPO
as a Newspoper


FINDING THE WAY.
With the modern arterial roads it is easy to drive from one large town 10 another, but on crosscountry runs some skill at map reading is necessary if the need for outside help is to be avoided. An article inside deals with the subject in an educative and entertaining manner.


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 in a Spring Mattress""TTHE way the car holds the road is extraordinary. I 1 have driven 7 makes of car, but in none of them did I get the same sensation of pleasure, and, indeed, some other sensation I cannot describe, that I got when I felt this little Standard like a magnet in a spring mattress. $W$ ith the needle on 40 she seemed to settle right down into the road like a bed . . . ." J. w.
The $11 \mathrm{~h} . \mathrm{p}$. Knowle is a 4 -seater 4 -door body. Adjustable front seats with hinged backs.
Choice of 3 colours-leather. Equipment includes scuttle ventilator, speedometer, clock, dashlamp, driving mirror, ash tray, screen wiper, petrol can and carrier, Dunlop L.P. 27 in. by 4.40 reinforced tyres.

## Standard

## 11 h.p. "KNOWLE" 4-SEATER

$$
\mathrm{E}_{2} 25 \begin{gathered}
\text { wilh completec } \\
\text { equipment. }
\end{gathered}
$$

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## 5 rom Tye Daily Telenraph


'THE following is an exact reprint of article.
"The winter months are apt to send motorists in search of economical and moderate-priced saloon cars. British motor manufacturers are realising this trend of the trade, and are catering for it very successfully. As an example of this type I may quote the new 10.8 h.p. ratcd overhead-valved-engined Rhode saloon, with its four-wheel brakes, comfortable coachwork, and four doors for the passengers. Its cost complete is $£ 350$, and, provided its owner will be content not to exceed a speed of thirty-five miles an hour. ils petrol consumption is forty to forty-two miles per gallon. Whether he will always care to do so when the engine is capable of giving a road speed of a mile a minute with four full-sized passengers in the car is another matter. In any case the fuel consumption is very low.
Provided with a four-speed centrally placed gear change, the driver finds the ratios casy to alter cither up or down without any special treatment. The acceleration is good. as on the Dorking-Reigate road this car, with four passengers, reached a speed of 55 miles per hour, and increased it to 63 milos an hour as a maximum in half a nil? from a gentle aumble of ten miles an hour. It gets up to forty miles an hour very quickly, so that the accelerating quality is at the right end of the
scale for a traffic emergency in which a sudden jump forward may save an accident. This Rhode saloon also sits well at speet on the highway, whether rough or smooth, so that the driver handles it with confidence. From the passengers point of view it may be added that the engine is quiet in running, the cushions are comfortable, the doors wide, and the leg room ample. On this trial all four passengers were six feet or thereabouts.
The stecring is particularly light and free from vibration, as with the Dunlop cord balloon $28 \times 4.95 \mathrm{in}$. tyres no wheel wobble was experienced at any speed. Thus this car is as suitable for a lady to drive as for a man. Wheel wobble is a very undesirable fault in a car that is to be handled by women, as it is apt to upset their newes. The equipment and fittings are in good taste and are especially designed to give an owner-driver the minimum of trouble. Lubrication is by the Rhode patent autmmatic system, every moving part being lubricated. The fourw ieel brakes pull up the car promptly without the help of the centrally-placed hand-brake. The power developed by this tiny $66 \mathrm{~m} . \mathrm{m}$. by $90 \mathrm{~m} . \mathrm{m}$. four-cylinder engine required good brakes, as this Rhode saloon, with a yearly tax of fll, can overtake many of the bigger-engined saloons on the road." This is further proof that

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FOR a legal man he really was lurid as he told me of the shortcomings of the cheap car he was running．He had one craving in life－formed by his early training－RELIABILITY ！
He had an open mind，and would buy anything I advised if I was prepared to sell to him on reliability and take the car back if it failed on that score． I put him on board a Hampton，and at the end of three quarters of an hour he said＂My dear Sir，I am more than satisfied，but can it stand up to the work at such a price？＂
＂You have your legal remedy，＂I replied，and then I told him the history of a few elderly Hamptons with which I was in intimate touch，and he was convinced． We came to an amicable settlement about his old car， and a satisfied client drove off with a smile．
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-that's when roads are most exacting and when
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## THE NO-TROUBLE CARBURETTOR




IMPORTANT LONDON TRAFFIC EXPERIMENT.

During the week Farliament Square has been the scene of an interesting trial of " circuiar" traffic control. Here is the entrance to the control area from Westminster Bridge, show ing the bold, white directions painted on the roadway. Every motorist should understand exactly hov the system works. A full explanation, illustra ed with photographs and a sketch plan, appears on pages 210 and 211.

## NOIS. NC

New Year Rush.
Ower a hamded temporary cletks bati (1) he: filken on by the London County Connell to cope with the suiden rush of husiness caused by the ronewal of ear licencos fur 1 ! 2 L .

## This Week.

This issue contains an mumber of more than usually interesting ieatures. Parifoular attention is directed to the deseription of the circular traftic experiment which was tried for the dirst time on Monday this week in larliament Square, London. So far as our own observations went, tho scheme worked with remarkable suecess. "Finding the Way" is the title of an article which. in addition to a number of useful hints for rond users, contains a brief description of the Ministry of Trnusport's road classification systen. The article appears on our centre pages. Our road test report deals with the 11.4 h.p. four-senter ('itroenl. We regret tiant we are obliged to hold over the promised artiele on washing a car' ; this is entitled, "With lInse and Sponge," and will appear next week.

## ON OTHER PAGES



LIGHTING-UP TIMES (Rear Lamps) for Saturday, January 81h.

$$
\begin{aligned}
& \text { L.ondon .. .. ..93 Ellinburgir . . } 4.27 \\
& \text { Nowcastle .. } \\
& \text { Birmingham } 4.40 \text { Bristal } \\
& 1.45
\end{aligned}
$$

## Our Cover Picture.

One wit the latest 0-20 b.p. Humbere finures in our front cover pieture this week. The photograph shows the R.A.C. guide outside his box on the Great North Road at what is locally known as the " Bedford turn," north of Temp-incl.

Econonizing in Rubber.
The war-ery contained in the reonomy programme lameled by the National Rubber Association and the Nathoual Automobile Cbanaler of Cumateres (America) is "A patel in time saves nine." Every motorear user and every garage manager is being asked to cooperate with the rubber trade in obtaining Inger tyre milenges and the greatiuse "if repaired tyres.

## Next ${ }^{-}$Week.

As indiented in a previous parugrabl, With Mose and Sponge," a copiously: illustrated artiele which explains the best way of washing a car, will be one at our principal features next week. As the result of carcless treatment during the washing process a new ear may soon lose its pristine appearance, but the writer of the article in question shows how. to a very ereat extent, this may be avided. The latest model of the fourseater Humber Nine will figure in our roald test report, and amongst other items we hope to include a most instructive article dealing with the care, fitting and repair of Bowden wire mechanisn ui all kinds.

No. 695. Vol. XXVII.

## Eusy Inventors.

of the $3 \mathrm{~B}, 000$ patent alphimations filed at the British lateat Ollice in 1025 over 12,00m related to moter vhicles and internat-combastion enมines.

## Second-hand Car Show.

The IRoyal Agricultural Hall, Islington, will be the scene of a used car ant motorevele show from March 1Sth to $2 \overline{7}$ th. Full information can be robtained from Mr. T. Pattison, 13, V'ietoria Street, London, S.W. 1

## " Logic Applied to Failures."

During Jamuary a paper. entitled "Logic Applied to Failures." will be read before the Coventry. Glasgow and Manchester Centres of the lastitution of Automohile Engineers by Mr. J. D Parkes. The paper deals with the correct investigntion of mechanical failures on all types of cars.

## Whose Sidecar?

An R....C. guide found a deserted motorercle and sidecar by the roadside in Leicestershire on Chrisimns Eve. Ife removed it to a garage and reported to the nolice and to the Club. The owner shonld communicate with the Royal Automobile Club, l'nll Mall, Loudou, S.W.1.

## French Coachwork.

The subtle difference between English and French coachwork is plainly: exemplified bs an accompanying photograph of a standard Freuch fabric saloon borly on a $10-20 \mathrm{lip}$. De DionBouton. Completely eguipled, the cat sells fur $£ 575$, at which figure it represents very good ralue for money, being fitted with six side windows, doublepamel windsereen and the other refinements usually associated with a highclass saloon


LIGHT CAR PROVERBS.-No. 2. rhis drawing depicts a well-known saying With which every reader should be familiar. Write ti on a postcard addressed to the Editor
and marked Proverb No. 2 in the toD Ieft and marked Proverb No. 2 in the top left hand corner. Aprize of a guinea is offered If two or more readers submit the same winning proverb, the prize will so to the sender of the first to be judged. Only one solution may be submitted by individual competitors. No judsing will be done before or after next Tuesday. For the winner's name and address see next, week's ' Around the Trade.

## That Increase

When will writers in the lay Iress who deplore the increasing wumber of motor accidents realize that motor traftic is increasing by leaps and bounds and that the netual proportion of accideuts is no greater than of yore :

## Echo of the London-Gloucester

Cyelecar enthosiasts will be interested to know that in the recent L andon-Glon-cester-Loudon trial the four cars of the Morgan team were awarded enps, th fifth obtaining a similar nward

The "Super"-taxicab.
" 1 know something thent meterears, said a withes at Sontlpert, and whit on to say that a taxicab was being driven so fast that it develonned "speed woblde.

Jury Demands Cycle Lights.
That bicyeles should carry tear lights was the rider by the jury at a chester impuest unon a cyclist who, riding au unlighted liecele, was knou-kerl down by no avertaking matneyem.

## Colouring Concrete

The Comberland County Conncil has been successful in building: is concrete bridge coloured pink hy the admisture with the ennerete of a shecian colonrin: materinal. This lends interest to the surgestion that concrete romb should be slighty tinted so as to reation glate.

## R.A.C. and Emergencies.

In a circular letter inent to itc memhurs the IR.A.C. states that the (lub) has mudertnken to hell, the :mblumities in maintaining essential public iransport services should a mationt forereney arise. It will be recalled that the IV.A.C. has assisted in this caparity on prections oceasions.

That Deadly Exhaust.
Considering the number of people who attended to matorears in huildings insufficiently ventilated it wes mircellous there were not more dealle from exhnust fumes, siad we Dradford coroner, Mr. J. (i. Hutchinson, at an inguest recently. The public should know that the oily smell fif the exhaust was no eriterion of the percentase of prisonots gas. There wat also, he added. danger from sucll fumes in closed cars if the various joints in the exhaust systemboften situated lablow the floor-hinards-were leakin:


## CONTRASTS IN TYPES.

The upper photographs show the near and off-sides of an attractive body cspecially built for an Austin Seven chassis by a firm of New Zealand coachbuilders. On the left is seen a $\mathbf{1 0 - 2 0} \mathrm{h} . \mathrm{p}$. De DionBouton with a standard Fronch !abric saloon body. The car complete is liste 1 at $£ 375$.

## Touring in France.

Juaders visitin: Firanee who monose (1) stay in that enuntry for mome than (ie) days, are wathed by the 1:A.C. that they minst obtain an identity card on arrival, of there will be eonsiderable enmplication when thes wish to return home

## Germany Bans Racing.

In view oi furcign compution. Geman mambammers have decidad


## Police Activities

There apluears to be a striking inravise in police activities with regnas to 10-mile limits, minsuitably silenced PMansts and illegible number plates. Particular care is mecessary in the Lamdon aren. $A$ ease lans cume to our notice where a summons why served six weeks after the police torlk their initiat action.

## Steadily Growing.

The proportion of motorears to popreIntion is steadily growing in the United Siates. St present there are over 20 million motor velicles registered, this heing an addition of over two million during the past 12 months. Of chis gigantic ional no fewer than 17 million

## GEARS IN THE MAKING

Testing a gear wheel for ovality or other faults at the A.C. works. Errors are shown by a telltale clock adjacent to the operator's left hand.

## The Amsterdam Show

The ammal Dutch Motor Exhibition at Amisterdam will be held from January 15th to 24th. British light eal makers will be represented by the Custin, Clyno, Rhode, Rover, Singer and Wolseley.

## Car Rally at Monte Carlo.

Un Janury : Oth there will he a car rally at Monte Carlo; whilst coincidins with the holding of the Paris- Nice trial, which takes place from February 1Gth1.Sth, there will be a car carmival and ho usual liattle of I'lowers at Commes and Nice. In automobile wreek will be hell in Cannes, heginning Fobruary 2sth.

## The Indianapolis Grand Prix.

Wready the kecnest interest is beinf token in this year's $1 \frac{1}{2}$-litre Indianapolis race, and entry forms for this, the fourteenth race of the series, which is dixel for May 31 st , have been sent out to every prominent driver in America and Europe. This, of course, is the first year in which 91 d cubic inches (i.e., $1, g(x)$ c.e.) has been fixed as the enginecmpacity limit. in previons sears 120 iarles ( 2 litres) having been the limit. leaders should wateli the pages
 Inction cons and mo monery will be acerficeor on racins. Thic position is rambe elval by the decision of the Girmanal Xational Mutorear \ssociation. Which ays that it will not sametion :


## Good Business in U.S.A.

th spite of the reluect prices of ears Which were "fowtive during the thired fluater of 10:3, the profits of Ameri"all moter and motne secessuries combanim: were mbly slighty bollow those fire the sement imatere, whitst for the nine manhls anded Sugtomber they ex-

 matneticel?

## Routes to Sutton Bank.

Wi: learn fom the North Yorkshire Autemobile Cluh that the road from Ifemaley throngh Nievouls and Seaw. ton to the top of Sutton is not now suit:hble for motor trallie. Notorists are therwfore advised to take the route via Suroxton surd Waterlon Lane. It should be nuted nlso that the roald m! whol is known as " White Horse Fhll. between Kilburn and ILambleton Hotel, is also minsuitahle fre motor trallice.

## A Singular Accident.

Morlem progress has created n new peril. During the high wind which marked the depmeture of the Old Year a friend of minc, writes "liocus," was about to drive his ear into his home garage, when, without any warning, his neighbour's wireless pole smaphed and fell across the ear. It demolished the vindsereen, wrecked the bnonet, and made a nasty mess of the borlywork. Fortubately, the enr owner was mpening the zarage doors when the crash eame; otherwise be would have been serionsly injured. With the widespread use of wireless poles, many of which adjoin public highwnys, some method of ensuring theit soundnes: would appear necessal's.


## Trams and the Roads.

Stating the case for the reinforcement of tramway tracks, The Roadmaker sins: ." When one considers the concentrated land of a loaded trameno vehicle woighing from 15 to 20 toms. sheeding along at a finirly hirh rate aul taking the form of a decidedly live loat acting on : comparatively small ares, thon the finmation laid down to withstand this shock, torether with the additional lands of motor vehieles in the same areal, "anmet be too well strmanthened for such heary duty as this."

## Doctors and Obstruction.

1hr. IRoland Sells, when fined $\mathfrak{f 1}$ at Suuthend for causing an obstruction with his car, made a vigorons protest to the magistrates, pointing out that, whist doctors apparently were not allowed to leave their cars outside patients: lonses, motorwans were permittod to remain stationary outside shops for considerable periods whilst goods were being loaded and molonded. Tlu manistrates, we learn, have sineo abangol with the polien for evers ennsidelation to be extended to doetors.


WITH the excention of the Gnome. I know of no mutern crelecar which is fitted with balloon tyres, but when air-cooled G.N.s were at the height of their popularity I remember seeing several which had 710 mm . by 90 mm . corers in place of the $6 \overline{0} 0 \mathrm{mw}$. by Ge mm. fitted as standard.

Opinions concerning the big tyres were divided, but experionce is the best argument, and it was generally conceded that the practice was not to be recommended. The reasons given were as follow:- If the tube were pumped up to the pressure recommended by the makers, it was far too hard for comfortable riding, if it were allowed to be " soft," steering becume erratic, the car rolled badly on corvers and punctures were more probable because of the largerarea distributed orer the road surface.

It seems reasonable, howerer, to suppose that the correct pressureload ratio could be found without difliculty, and I must confess that the idea appeals to me.

Has any reader had unsatisfuc tory results with the trle of two speed gear fitted at one time to $P$. and M. and Rosal Enfield motorcycles: Consisting of two chains siving different ratios and locked to : countershaft by independent friction clutches, these gears appear ideal for a ciclecar transmission.

A single lever, serving both for the clutch and gear control sufficed in the case of both the I'. and M. and the Royal Enfield, and in the latier instance a nominal 8-10 h.p. was 'asily transmitted. If this arrangement would transmit so much power and liaul a heary combination with Hree or four adult passengers about the country, why has no cyclecar manufacturer erer made use of it? $J$ know at the present time of two small concerns which are toying with lho idsa of marketing a cyclecar, and both of them hare a fric-lion-kear machine on the drawingboard.

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Turning over some old photographis the other day, I came across one or two views of the friction-driven Richardson, and they recalled memories of a rather exciting week-end which I had with one of these cars.

Let me hasten to assure my readers, in fairness to a reasombly good rehicle, that wy troubles were not wholly due to faults of design, but rather to sheer bad luck-the old tale of a split pin which had not been replaced and a mut which hast worked loose. Unfortunately, the nut in question was the sheet-anchor, so to speak, of the whole assembly, and it was indeed fortunate that 1 had reached a spot within a mile or twn of the end of my journey when the friction gear "unhooked" itsell in all directions and left me prat:tically strauded.

It was then quite dark and rainingr hard, so 1 hope my readers will not: blame me for abandoning the car and covering the rest of my journey in a public converance. On the next das I returned to the garage, and within an hour had the Richardson running and on the road, but I am afraid that I had done quite a lot of damage to the drjeen disc, this being the only part which had to be renewerl.

It was a pity that the Richardson went out of production, for it was a really serious attempt to solve the cyclecar problem. The engine, as my readers will remember, was an aircooled two-cylinder 8 h.p. V-twin J.A.P., the drive being by open shaft to the friction mechanism at the back. wilh a final drive by chain. Could anything be more simple or offer less mechanism for the ownerdriver to keep in order? The body of the Richardson was one of its strongest points, and it was a really comfortable two-seater for those days. The wheels were not detachable, and I could not help thinking that this was a disadrantage. It had the effect of cutting down the
cost. howover-it mon imlondant consideration.

In the Richardson w... Aoulat have seen friction drire at ins bewar for it had to propel a vehicle wathinge lass than J0 cwt., athe oms. motsober, which it would have bew ifflioult to orerload. Eren the mun unlimistic supporters of ririction drrse armmit that there is a limites amosmon of load which rises catl ( $\quad$ mallonlathly shoulder. Incidentall!. Fomsing dio-signs-of radiator-sombtimits catsit their shadows belore thant. Lomk ati the sloping "radiator" of 1hac Iticlardson and compare if wills a widl known make of modern ranilus car.

We know, from onf (ald rerlin!r days, that chain drive is mover mome satisfactory than when the chatas wre lubricated by a constant streana of oil, as in the catse of tho lithle oil bath which figured on Sumberans, amal 1 notice, coming down 10 more modern times, that where aldains are emploved for racing cars it is not at all uncommon to find that lubrieant is fed to each chain by a special pipe, the end of which terminates close to the top side of the unper run. I thimk it wombl be quite a grod flan to adopt this system on standart touring machines whiels have chain frive, but I think it would be fat better to direct the oil on to the upper side of the lower run, thereby endeavouring to defeat the effects ot' centrifugal force, resulting in a saring of oil and in better lubrication.

Or course, a system like this might prove to be expensire, and the oil bill of the enthusiast who decided to do the thing properly might be very heavy. There should be moderation in all things, howerer, and if the supply of oil could be regulated so that some two or three drops per minute were the maximum amount of oil which could pass. I feel sure that the cost would be saved lyy the increased life of the chains and the sweeter running of the car.


FEW GOLD MEDAL WINNERS.

W1.: print below the atwatels tratued by alt the efolecan and ar commetitors in the Mutor -Yoling Club)'s Imaton-wxeter-ton (fin) E -1/our Trial, which started on the hight ot December 2silh, and it will the haticed that, consithering the rrinte mathe of the event, a very titit bamher of suld metals has

Tッ) switre at guld medial at comperifor had io maindain an average Thent uf 20 m.p.h. Throughont. nered bwike more thath 10 mins. early or 10) mins. late of the prescribed whembles. In addition, he had to makt at mon-*|0| ascent of leak and

Marlpits Hills, to average a certain sped orer hatr a mile from a stand ing start on satcombe Hill and to resiart on the 1 -in-5 portion of white sheet Hill, covering the first 10 yds. from the slarting line in 10 secs.
The speeds which had to be averaged on Nalcombe Hill were:cars ower $]$, $\mathbf{y}$ (h) c.c. and three wheelers, 18 m.p.h.; cars undel 1.5(\%) c.c., 15 m.p.h. .; and cars under 1.1110 c.c., 12 m.p.l.

To win silver medals competitors were ralled unon never to be more than 10 minutes early or 20 minutes late of sehedule time, to make clean ascents of two of the observed hills,
and in be within $2 \mathrm{~m} . \mathrm{p} . \mathrm{l}$. of the gold medal speed on the timed ascont of Nalcombe Hill.
Bronze medals, of course, are more in the nature of souvenirs than of awards, for they are given to ereryone who did not qualify for a higher ward hut who managed never to be more than 30 minutes late or 10 minutes early, regardless of the manner in which the hills wre climbed.

We understand that the reason for a number of competitors receiring no awards was because they were caught more than 10 minutes early in a secret check.

SUCCESSFUL AND UNSUCCESSFUL CAR COMPETITORS

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## 259 "ט. 13. Ware, 7-17 h.p. Coventry Victor

251 I). F'. Iferboura 8 h.p. Morgan-Aero
 Channon, 11.9 h $\quad$ Morri-Cow
Capperion. 12.40 h. P. RHey. Marshall, $11.9 \mathrm{~h} . \mathrm{p}$. Riley. E. Leverect, $11.9 \mathrm{~h} . \mathrm{p}$. Riley, G. L. Jarksoct, 1250 h . . Alvis. E. Iferrens, 11.9 h.p. Murris-Coviley 13.9 h . M.C. Super-enur! G. Cooper. Whit, i1.9 h.p. Riles.
W. H. If. Blackburn, $12.5 \mathrm{~b} . \mathrm{p}$. Niler.
F. Derey, 12 h .p. Riley.
i. S. Llewellsn, $11.9 \mathrm{~h}, \mathrm{p}$. Morris-Cowleg.
A. Slewelljn, 11.9 h .D. Morris Cowleg
IV. F. Kendrick, 16 h.D. A.C
II. F. Pedlar. I1.9 h. M. Mnris-Conicy.


W. F. Ratclith, 11.9 h.p. Riles.
S. II. Newsome, 11.9 h.p. Rifer.
A. Thomas, 12 h.p. Yulcan.
R. G. Mndicar. $16-50 \mathrm{~h} . \mathrm{p}$. Waverits.

Bealle 16.50 h.p. Waverlcy.
T. Whliams, 11.4 h.ए. Humber.

423 F. F. Burge. 11.9 h.p. Morris Cowley.
BRONZE MEDAL:
412 I. S. M. Scott Moncriefl, 10.4 h.l. Whis.

## NO AWARDS

262
364
277
282
287
305
306
307
316
342
357
392
113
414
419
421
 B. F. Rusecll, 10 h.p. Morgan-Dlack C. Couper. 10 h.p. Musgan-Aero Chadwick. 9 h. p. Rurer Collicer, 8.9 h.p. Talloer. Bartley, ${ }^{\text {g h.p. Gwynne. }}$ Hendatl, 8.9 h.p. A.V. Hicar. Sone, 9.5 b.p. Siclitite Ndingion, il.9 h.p. Frazer-Nash. Robinson, $11.9 \mathrm{~h} . \mathrm{p}$. Frazur Nash. 3earman, 13.9 h.n Morsis-bisford. Reigate $12-40$ h. n . Nriall ก. Ifawkes, 32 h.p. Auburn.
Denotes traselling marshal.


IIr one may judge by observations made during the busiest hours of the day, the circular trattic control experiment which was inaugurated on Monday last in Parliament Square, London, is a conspicuous success, and it seems likely that, encouraged by the far smoother working of trafic which has resulted, the system will soon be adopterl not only in Parliament Square, but at other busy centres in London aud the principal cities of the country.

Briefly, the system consists of making traflic turn left directly it enters the control aren from a side turning, but there are exceptions as will be shown later. After turning left drivers follow round in a cluckwise direction until they reach the turning they wish to take. when they swing easily out of the streath.

Traflic flows in one direction ouly and automatically regulates itself. Time is saved because there is none of those irritating bold-ups which are a very aggrarating feature of point control.
Exactly how the arrangement works out in practice will be understom if an actual example is taken. Let it be assumed that a driver approaching Parliament Square from Westminster Bridge wishes to turn into l'arliament Street, leading to Whitehall. Under the ordinary regime he would, haring ubtained the consent of the policeman on point duty, B14
meroly swing risha, hat under the circular tathir control sesfom he wound bum left as though making for labace Yord. athd, travelling in a clockwis: direction, Would ratwerse the four sides of the Fullare, turning left inte Whitchall within a few yards of the spot where he curned lef! in the first place.

This may appear to be a quite unnecessary waste of time nud anergy, but it must be remembered that his progress would be uninterrupted, and that, on the average, he would probably travel from W'estminster Bridge to Whitehall in a shorter space of time than that occupied under the point control system. Obviously, where the two roads with which he is concerned are closer together, the adrantag. will be even greater.

There appears to be one dilliculte in connection with the scheme as it operates in Parliament Square. Jraflic wishine (1) cross from Great Georgi Strect to Westminster Rridgo has to intersect that wishing to cross from Praliament Streus

The panoramic view shows, by arrows, the direction taken by all traffic entering the square. The arrows have been drawn in by the artist and must not be confused with the real official arrows on the road surface. The short arrows in the plan show, as an example, how traffic from Westminster Bridge, Palace Yard, Victoria Street and Great George Street, passes into Parliament Street for Whitehall. to Palace Eatd, and at this junction-as indiented by the heary arrows in the site phan-point control is essential during the busy hours.
The haw, if it call be so described, is due to the peraliar traftic conditiuns which exiet at this junctiont.


One rather novel feature is that within the " magic circle" there is no right or wrong side of the road: in fact matit a turn to the left is menditatent, the watlie matomatiently hase the wrong side of the toat oo as

lhang oll ohservatims we were struck by the ease

 by large white arows batated on the mand surtare, the -anditints wome on different from those which exist momally that there were in evilence all the elements for at rally lian-atas trallic mix-un.



## A UNLQUE SPECTACLE

In the photo. on the left we have the unique spectacle of traffic swinging round the "wrong" side of a central refuge. Within the control area there is no right or wrong side of the road. A point duty policeman is seen on the extreme left, his mission being made clear in the text and by the site map. (Oval) The public are taking a great deal of interest in the experiment and "lunch time lookers-on" are very numerous.

# REALLY DIRTY JOBS- 

```
-AND HOW TO TACKLE THEM.-HOW TO
DRESS-A"LAND DIVING SUIT "-PROTECT- ING AND CIEANING THE HANDS.
```

T() mosi wher-duvers keephing a car in guod order is pleasant work, pruviding that the various jobs which have to be dome are not of too dirty a character. Unfortumatels, however, the car has not ret been built which can be viled and adjusted in white kid gloves, and some of the work which falls to the lot of a careful owner is really "messy:
Often, for instance, there are little atijustments which can be made only by crawling under the chassis. such ats tightening the nuts on a rear universal joint or charg ing the leather gaiter which covers the sulined joint The brake spindle greasers may be really accessible folly from under the car, whilst a ratting exhaust pipe prints to the necessity for tightening up the clips which hold if to the chassis-another job which must be aracked from beneath.

## When Access is Difficult

On most car: the dutch spigot and withdrawal mechanism require lubrication periodically, and some times can be reached only by lying on one's back: whilst. as a final example, one may mention draining the sump.

To tackle any of these jobs half-heartedly is foolish, and may, indeed, he nothing more than a waste of timeThe owner at the outset must be determined to tackle the work systematically, and he must be suitably clatd. A hoiler suit or an old lomge suit specially set aside for the purpose are equally satisfactory.

The sleeves at the wrists should be tied with string to keep them out of the way and shirt sleeves may with adrantage be rolled above the elbows. A tight-fitting (ap should be worn and a light muffler tied round the neck, whilst last, but not least, for working beneath the car it is an excellent plan to mear goggles.

In a "land diving suit" of the kind described the dirtiest jobs can be tackled with the greatest degree of comfort that is possible under the conditions which necessarily rule.

For a matter of eighteenpence or so it is possible to


If ${ }^{\text {s gloven are not 'worn - and they are often inconvenient }}$ -the mails may be partly protected by scraping them acrons a tablet of soap. This will prevent dirt finding
purchase what are known as homsemation whes The latest examples of these are fitted with lual how grips for the fingers; but if amateur mechanics consilder that ther hamper the free use of their hands, they should not be above protecting their finger nails low stang them actoss a tablet of soap-a precaution whinh will save quite a lot of scrubbing afterwarls.

## The Inspection Pit

A boiler suit is preferable to a lounge suit. for " Whes " cau be washed fairly easily, and, further, they can be slipped over an ordinary sut, thus sawing time. Again, oue's ordinary jacket can be removed when a boiler' sult is worn, thus giving far greater frectom fror the arms.


This sketch plainly indicates why an elaborate costume like that illustrated in the heading picture is necessary. It prompts the question : why cannot the sump plug be made more accessible on all cars?

An inspection pit is a luxury of which the home garage seldom boasts; but when the plans are beine prepared for a private building of this nature it will he found that the extra cost of including a pit in the specification is comparatively small. If you are fortunate enough to have a pit, remember that cleanliness is next to godliness.
Only too often oily rags, paper and all sorts of "junk" accumulate on the floor of the pit, which soon becomes a danger to the health of anyone who has to work in
it. A waming of another lind is called for also never have a maked thame in an inspection pit. Jetrol fumes, being heavier than air, sink into the pit and gradmally fill it with what may asily become an explosive mixture. These fumes do not disperse quickly, and, for safety's sake, some form of ventilating shaft entering the pit at the bottom ant in direct communication with the open air is alvisable if not absolutely necesary.

There are a mumber of essentials for really satisfacfory working under a chassis, one of the most important in the absence of a pit being a "crepuer." This, in its simplest form, is a flat board with it small cateiton wheel at each corner, upon which one can lie and push oneself hackwards or forwarts.
In a more elaborate form the creeper has a cushion top and cassered wheels, so that one can move about in any direction. Anyone with the rulimemts of carpentering knowledge at his disposal should be able to make a creoper which will give just as satisfactory service as the most expensive article that can be bought. Armchair castors work admirably.

## A Few "Essentials.

Amoneressentials are rags, paration and a stif brush. flae rags should be graded into clean and dirty, the later being used to clean off mud, oil, and so on, after it has ben hasened or partially remored by the use of the paratlin brush. The paratin shond be cartied in at that and faily large container, which can be kept under the paricular parts which are being cleaned so that the sumerthous paratlin will drain back into it. th is a mistake to trust to the magie properties of parallin thone when the marts to be cleaned are thickly Gallal with a mixture of mud atm grease. On these


An untidy garage is a bindrance when any kind of work has to be done on the car. Rubbish should be thrown away; useful articles stored in their proper places.
occasions an old taljle knife will work wonders, skimming off the dirt and leaving the parts beneath so clean as to require only a final wipe orer with a piece of barathn-moistened lag.

To tackle a dirly job in the cleanest possible manner is one of the best ways of cloing it in the shortest space of time and in the most sntisfactory manmer. It the owner las "sared up" a lew jobs which necessitate crawling bencath the cliassis or using the inspection pit, as the case may be, it is an excellent plinn to have the car washed thoroughly as a preliminary, and, although a washer seldom regarels the removal of dirt from the underside of the crankease, and so forth, as part of his job, he will at any rate pare the way for the final cleaning operations which hare to be carried out.

Whilst working under the car it is more than probable that one will come across traces of rust on certain parts where its presence is undesirable, and one will feel in a far happier frame of mind it the rust is remored and a coat of some suitable protecting medimm, such as black enamel, numied. The oppor-
funity shoukl not be missed of " trying" all the accessible parts for slacliness, amd if any show the slightest signs of being lonse they should, whenever pradidable, be lightened uf.

## Examining a "Suspect."

With the paratlin tin and burush handy it is comparatively easy to clean any suspected nut or bolt, and examine it at close ruarters, for slackness is not always caused by a loose nut and investigation always pays.

A fimal hint for the comfort and convenience of the amateur mechanic may be given. Creepers are seldon fitted with any form of hearlrest, but a support of this clescription will rob an awkward job of much of the discomfort it freruently causes. Any sort of hearlrest. will do; in an emergency a petrol or oil tin laid flat will serve almirably, especially if an improvised pillow is nlaced in position to take off the "hardness" of the in .

Here are a fow "condensed" hints that may prove of servien when really dirty fobs have to he iackled:

An ordinary brush of the -type supplifed with pots of paste makes a gotd paraflin brush.

Newspapers lied rombl the legs and acting as gaters


Never use a naked flame when working in an inspection pit. If an electric lamp is avai!able make sure that the bulb is guarded by a wire cige.
are an admirable protection against grease and dirt when a boiler suit is not worn.

A brazing brush, which has bristles of stiff, flat wire, is excellent for cleaning the urblerside of the sump or other places where caked oil ant mud usually collect.

If a "creeper" is not available, the operator should lie on sacking or an old mat, especially when the floor is of concrete.

Adequate illumination is half the battle. In the absence of an inspection lamp a pocket flash lamp will often enable a satisfactory examination of ans particular part to be made.

Oily rags need not be thrown amay. They make good fire-lighters, providing, of course, that they are not clamp.

Let us now asume that the work has been concluded. that the tool kit has been tied up and put away, and that there remains nothing for the owner-drirer but to wake himself presentable once more.

Really hot water is the secret of the easy remoral of dirt from hands and face. no matter what is used as a basis for getting rid of oil and grease. There is a selection of patent hand cleansers on the market, and nearly all of these will be found to work well; but in the absence of any special preparation of this Find it is a mistake to use paraftin or petrol. These have to be applied fairly liberally it they are to get all the dirt out of the lines of the hands, and both are injurious to the skin. It is far better to fall back on the domestic stock and use one of the powdered preparations which are sold for cleaning pots and pans. These, when used with ortinary soap, will work into a good lather, whilst if a nail brush is also called into play an eren more satisfactory result will he obtained.


## A NEW VACUUM BRAKING SYSTEM. <br> AMERICAN INVENTION WHICH PNEUMATICAIIY SUPPLEMENTS THR PRESSURE ENERTED BY THE DRIVER ON THE BKAKE PEDAI OR LEVER.

ICADEQUATE braking power is not a failing of the average light car, the strengts of the driver being sufficient in practically every case to apply the brakes satisfactorily. At the same time a considerable amount of energy is used for this purpose duting a journes, and devices which reduce the effort reguired go far to lessen driving fatigue. The serro princigle, in which the momentum of the car is used to apply the brakes, is already well known to our readers, while racumbrake operation is gaining in favour on large cars.

A new application of the latter nrinciple is embodied in an American invention known as the l?. K. Booster brake. This derice is sis small and light that its weight is only 13 lt . ; yet it is capable of adding a pull of 360 bb . to the pressure which can be applied by the driver.

As will be seen from the illusiration, the Booster brake consists of a short cylinder. T ins. in diameter. through which passes a hollow sliding shaft momnted in long bearings at each cud. This shaft is provided with suitable ports. One end of it is connected with the brake lever or bedal and the other end with the brake rods. On the ceatre of the shaft, within the cylinder, is mounted a piston, and, by means of a by-pass at one end. connection is made by pipes with the intake manifolil of the engine.
When the engine is rubuing. the suction produced is used to withdraw air from the interior of the cylinder on both sides of the piston, so that normally the piston has a vacum on each side of it. Suitable valves
enable either side of the piston to be comeneted with the atmosphere or with the intake manifold as reguired, this ralve oneration being entirely automatic and brought into play by the movements of the shaft.

When the brake lever is moved tuwards the "on" position the shaft is drawn forward, and, in deing so, the valve which admits air to the roar of the piston is opened and atmospheric pressure pushes the pistom forward. thus adding power to the pull of the brake lever or pertal. Directiy the perlal movoment stops, the valve closes and tho pressure is held: if the lewer is all further depressed. morre air is admitted.

When the hakn fonsure is re-
leased, the hatkwatd murement shaft of lly shatt
(inno the rear (:)linder to the ர: : ćullll pipe, which ruickly exlathet the air willin it and resstales the Thiculum on each मistom: if the bratke lever is
 zaplodls air is ad mitter 10 the fromb site of the pistom, thus forc ing the brake of vers guickly.
The cylinder, it is clamed, is casily filtod to any chassis, as it is provided with brackets ly which it may be attached to one of the side members of the frame, being secured in such a way that the sliding central shaft is in line with the brake comnections already existing.

It should be noted that the I? K. Bonsin lirake is designed rather to supmement the power applied hy the driver than to oforate the hrakns entirely, although, of course, it dons the matomity of the work

## EXHAUST GAS POISONING.

D1HNN the winter months the all-important question of exhaust gas noisoning cannot be given too much consideration and attention by the motorist when working in the home garage. The main point to consider is never to start up the engine and keep it running without ample ventilation. The arerage small garage is not usually well rentilated, and with the cold weather we have been experiencing of late too much rentilation is not at all comfortable while working in the garage.

Carbon-monoxide gas, which is present in the exhaust of all car engines, has been known to be the cause of many deaths, as, being odourless and smokeless, it does not gire warning of its existence until it has the victim in its clutches. For instance, in the late war many hondreds were gassex by an explosion of T.N.T., which contained 60 per cent. or more of carbon-monoxide. Of course, the carion-monoxide content of a motor-engine exhaust is only small, but il becomes fatal when human beings or animals breathe certain quantities of it in a confined and unventilaterl ipace, such as a small garage. в20

Carbon-monoxide poisoning results from breathing air that has been contaminated wilh llat gas, and it is the writer's intention to set forth useful information on symptoms and how to act in cases of carlon-monoxide poisoning. This information has been furnished will the help of a well-known authority on such cases, and should be carefully read and memorized.

In carbon-monoxide poisoning the most important titing is to get the gas out of the patient's blood as quickly as possible and to get oxygen into the blood instead. The victim should be immediately remored into the fresh air and, if possible, to a warm place. So soon as he begins to breathe pure air, a good deal of the monoxide is exhaled and the hlood slowly resumes its normal oxgencarrying function.

Often this gradual elimination is too slow: it may reguire from nine to fifteen hours, during which timu serious developments can take place. Medical assistance should, of course, be called; in the meantime, how ever, a good deal may be done to assist the patient in obtain a greater supply of oxygen. This is done by
rolling him on his stomach, with the face to one sirie so that the nose and mouth are tree for breathing. A succersful scheme is to locate the victim so that one of his hands is muter his chin while the other is extended straight out beyond his head. This position tonds to expand the longs, and it is the posture which is commonly adrocated in the resuscitation of ammently drowned persons.

## How to Restore Breathing.

Just as in the water rescue, the noprator should stradthe the patient's hody, facing his head and resting the balms of his hands on the loins-the museles of his latuld-with the thombs nearly touching ach other and the fingut's spread over the lower limbs.

With arms held straight, the operator now swings forward so that the weight of his body is gradually brought to bear on the victim. The act should talie thout two seconds. Then, leaving the hands in place, he swings backwards and forwards, cansing one comHele repiration about every four seenels. This Attompt at rosoring breathing shonid be eontinued motil the patient bugins to breathe, or at least for three holls.

Occasionally respiration restored in this manner will Fow, aritin, amd this shotuld be watched for. In such -atio the phocelure must be gone over agath. Dhother (ssembial point is to keep) the victim 1lat ; it it should berombe momesary to tramport him to another place, it - insis to carry him on a stretcher, or even on abort. Nor liguid hould be given umtil conscioushess hats relumand.
Ifon arriving, the physician, if he fimbs the vietim till in at state of coma, may admintster oxym.th. hhal-

four times as fast as will ordinary air. Still better results are sad to be olstained by having the patient breathe a mixture of $\bar{j}$ per cent. carbon-dioxide in oxygen. I'me oxygen, howerer, is more easily obtained, lecause it is used in industry and by the healtio atuthorities, as well as by the rescue personnel of Gre departments.

While respiration treatment is being administered, the circulation of the blond should be aided by rubbing the limbs and keeping the horly warm with blankets, hotwater bottles, heated bricks or other devices. This helps in tiding the body over a period of low vitality. Other stimulants, such as hypodermic injections of raltein, sodium benzoate, or camphor in oil, should b: given only $\begin{aligned} & \text { by the physician after he has considered the }\end{aligned}$ possibility of orer-stimulation and the lizelihood of consequent collapse.

There is a record of instances in which persons poisoned by carlou-monoxide have been saved hy diredt blood transfusion.

## Avoiding the Danger.

I'o quote a well-known proverb, "Prevention is better than cure," and owners will do well to consider how the danger may be aroided. The obvious way is never to lun the engine in a garage, but this is scarcely praclicable in the case of nwners who carry out their own atijustments. The best plan. therefore, is to slip a length of tlexible tubing over the exthat pipe, the other ent of this tubing being led to the open air. Failing this, all doors and wiudows should be opened and the engine not left rumting any longer than is necessary. Where it is possible in extemd the exhaust pipe, it will be found that metillic tuhing is better than rubber hose.
F.G.B.

## CARRYING TWO SPARE WHEELS

FAMINSNE from tyre trouble is never mane desira ahb than when fairly long journegs have to be underbaken in winter. Punctures dannot be prepented, but lie carrying of two spare wheds will make it far less likely for annoying and messy rondside ratals to inner mbes to be necessaly.

An extra whed can always be obtained from the mathufacturers of the enr, hot the carrying of it somedimes presents a difliculty

With sports car's one finds freguently that the spare is carried on the tail; in this case an extension piece can the made which will screw owe the existing anchorage shat so that two wheels insfead of one can be clamped in position. The extension may be made conveniently from tubing internally screwed at one end to go on the existing stud and at the other to take a set-screw.
Un touring cars it is usual for the spare to be fitted ul, (an the running-board which hats a well into which the lower part of the whed lropes Olviously the extra wheel must be platod outside the well. The disathantage is that maness some form of supplementary support is made. the pxtension piece upon which the whecls are monnted may have to carry all the weight of the extra wheel: but it must not be forgoten that if the original spare fits snugly into its well so that the rumning-boabd really acts as a support for it, it will in turn be the means of supporting the second wheel, and no auxiliary bracket will be strietly uecessary.


Sliowing how the extra wheel may be mounted, by means of a screwed extension, on the same bracket that carries the existing spare.

When the spare wheel is ratried well forward on the ruming-board so that part of its circumference is sunk into the wing. the problem is not so easily solved, but his arrangement is seldom adonted on light cars, and loes mot, therefore, call for particular mention. If a second spare is fixed as shown, care will be noeded when driving througi narrow gatewas.

Where difliculte would be experienced in Gxing up a second wheel on the existing spare-wheel carrier, an endeavour should be made to house the extra wheel in the dickey. Nowadnys most dickey-sent cushions are removable and are seldom wanted on a long tour when two people only intend to make the trip. If the cushion be taken out there will be plenty of room fur another wheel, and it will still be possible to close the lid of the dicker.
Failing an extra spaw wheel. the long-distance winter tourist should make al point of equipping himselt with a spare tube and, it possible, a spate outer cover. The former can be packed neatly and carried in the tool locker: the later can be lashod in position beside the ordinary spare whecl. It would not be out of place here to suggest that iar less trouble in connection with wheel changing will be experienced it owners take the trouble to go over their trres periodienlly. extracting fints and "stonping" cuts and gashes. Remember also to grease the hubs whenever the whenls are changed, and thus prevent the likelihood of rusc.

ALTHOLGH largely of French manufacture, there is so much essentially English about the $11.4 \mathrm{~h} . \mathrm{p}$. Citroen that there are doubtless many folk in this country who beliere it to be of British origin. The chassis are actually manufactured in a giant works on the banks of the Seine, under the control of M. Andre Citroen, who, immediately after the war, transformed his huge munition factory juto a car works and presented the world with a smeill car, the name of which has become a byword.
In a highly standardized jols such as the Citroên, radical alterations from year to year are not to be expected, thus the chassis for 1926 differs from that of last year in four points only. These are the fitting of aluminium pistons in place of cast-iron, a stouter crankshaft, larger and more powerful brakes, and an iuproved steering layout incorporating a bigger reduction between the wheel aud the steering arm.
The particular model which was placed at our disposal by Citroën Cars, Itdl., for an extended test was a four-seater with English body, the price being $\{210$ and the equipment so complete as to make that fignre one which represents surely the last word in value for mones.

## Exceptional Equipment.

The body is graceful in outline sturdily constructed and well finished. It is essentially of the heavy but comfortable type. the car as a whole weighing, unladen. 18 cwt . The equipment includes a sir-panel rear windscreen with aprons, driving mirror, l3oyce Motometer, Folberth automatic windscreen wiper: electric horn. Citroën combined filler cap and petrol gange which can be rearl from the driving seat, clock, speedometer, licence holder, dash lamp, oil gauge, strangler, Hartford shock absorbers at the rear and an adequate kit of tools housed in a commodions mahogany tool box firmly anchored to the off-side running board, where it is ensily в2ㅡㄴ

Very complete equipment is a feature of the latest Citroen models. The engine is one of the few in the light car category which still employ a fan.

accessible. 'Ihis contains, amongst other items. a very handy inspection lamp and a grease gun for chassis lubrication.

The front windscreen is of the two-panel tyle, whilst the lighting system is of the five-lambl order and an electric starter is fitted. When it is added that there are four doors, all with pockets, ample legroom woth front and back, space for two adults and a child to sit in comfort at the rear, deep comfortable cushions and squabs and rigid all-weather equipment, it will be seen that the purchaser is being given the benefit of every penny of the purchase price.

Before dealing with the performance of this car on the road, it might be as well to refresh the memories of our readers with a brief review of its specification. 'The four-cylinder water-cooled engine ( 68 mm . by 106 mm . 1,453 c.c., tax $£ 12$ ) is built as a unit with the single (lryplate clutch and three-speed gearloox, the anchorage of the whole being of the three-point order. 'The ratios are $4.4,8.1$ and 14.1 to 1 .

An open propeller shaft twansmits the power to the Citroën "herring-bone" final-drive gear, which, of course, incorporates a differential. Steering is by worm and sector-irreversible-whilst the suspension all round is by quarter-elliptic springs, those at the rear being duplicated, and superimposed. The equipment includes five Michelin detachable disc wheels, will, Comfort tyres.

The brakes are of the internal-expanding trpe, and the Citroun is one of the rew light cars in which this principle is adonted for the transmission brake, which
is just behind the gearbox. Incidentally, the brake drums are heavily ribbed to dissipate heat.
We may bery apmopriately start to deseribe our impressions of - 100 miles running by dealing first with the really efticient electric starting mechanism. From bead colla the angine springs into life at the merost bouch on the starter button, which is operated with the left heel, the riyht toe being kept on the accelerator and the left hand free to operate the strangler.
the slow-running adjustment is mounted on the dashboard itself. It might, with adrantage, be brought up to the facia board so that it is more accessible. We must admit, however, that we had no occasion whaterer to adjust it during our test, the one setting serving admirably Toth for starting from cold and for idling when hot. Incidentally, it is somewhat surprising to disemer, after one has found how merrily the starter swings the engine, that the electric system is of the (-woll ant not the 12 -volt variets

## More Comfort Than Speed

both brake and gear lever are central, but in movid ing : (herl) athe comfortable seat the makers of the Finglish buly have rather robbed the driver of easy and complete accessibility to them, particularly when the Eual hewer is in the second-gear notch. The gears, of course, ate operated with the ease characteristic of the Cibveth, the chutch is light and smooth in action, and tho wembral driving josition is most restful.
Unumatomably the steering has been improved, but fars let it he salid that the car which we took over from Wirminh building. brook Grecn, Hammersmith, Conclon, II..1, hand only 100 miles to its credit and it. was un-- lemiably stiff. It was refreshing to discorer as the mileane momet up that the car became easier to control athd far more lively:
It would bo fair to saly that this model, as it stands. is one which has been produced more from the point of view of comfurt ham speed. We found that the best m.p.1. Was just over 40 and that $37-38 \mathrm{~m} . \mathrm{p}$.h. was really the most comfortable maximum speed. Again, $20-25$ im.j.h. was about the limit in second gear, whilst 10 m.jph. Wats mobably the limit in first.
Within a few hours of leaving brook Grean we wore


The essential running tools are carried in a polished mahogany chest fixed to the offside running board. The contents include a spot-light and a grease gun; for small articles there is a shallow lift-out tray.
loeading northwards over treacheroms, iceionumd roads onr heddamps piercing the inky hackness of at reat December night-and what excellent headlampis, torn. They threw a well-focuserl and brilliant benm, which allowerl us to cover some 2 -i or 2 m miles in every hour and when we struck those icy films which were the modoing of more than one motorist rluring the Christ


The door on the driver's side is a great convenience, entry or exit being easy without disturbing one's passenger. The controls follow standard Citroen practice.
mas holidays, it was fomm that the well-defined battern and the large area of the Michelin balloon tyres helped the calr fo hold the road in a very reassuring manner.

Needless 10 say, in anticipation of snow or sleet showers-definitely promised in the previons nights halletin from $2 \boldsymbol{O} 0$ - every scrap of all-weather equipment had been erected, and rery warm and snigg it was as we sued תlong the bleak North Road.

On the ensuing days a number of cross-country trips were undertalien, but we lad no desire or even tempta tion to lower the hood and dismantle the all-weather cruilment, preferring to guard against the effects of the bitter weather and travel in miximum comfort.

We have already intimated that in the first place the rar appeared to be stiff and somewhat unwieldy, but as the sheromometer approached the 300 -mile mark the major part of the stiffness had van ished and we began to appreciate the far better acceleration and hill-ckmbing which are made possible by the aluminium pistons.
The brakes were beyond reproach; the font brake, if anything, a little ton fowerful, but this obviousiy leaves a useful margin for that slight neglect which nearly every car has to suffer and we have no adrerse criticism to uffer on that account.
liew cars on the British marlet can lay a more legitimate claim to being real family models than this four seater Citroen. Cheap in first cost, commotions, riting very comforiably and-in parentheses be it said-without even a suggestion of rolling on corners, well equipped and giving a petrol consumption of some 35 miles to the gallon, it represents a proposition which must undeniably attract a large section of the motoring community.

In addition to the model which we tried, the range of $11 .-1$ h.p. Citroens includes a three-seater, $\mathrm{El65}$; threeseater, $£ 180$; two-seater, $£ 20$ : saloon. £245; three-seater coupe, $\mathfrak{2}_{2} 75$; coupe with dickey, $20 M$; landaulet, $\mathrm{f}_{2} 9 \mathrm{~g}$.


0NE of the jukes actuently made against eariy petrol engines was that the oil consumption was approximately mual to the-petrol consumption. This fault has, in recent rears, been eliminated to a large extent, and the actual consumption of oil (i.e., the amount which disappears) in a modern engine is relatively very small.

In spite of this welcome adrance, there still remains the problem of changing the oil in the sump. The makers of a car usually advise draining the sump every 1. 020 miles or thereabouts. Adrice of the same order is given by the oil companies. In either case, the condition of the engine and the manner in which it is driven and maintained are not taken into consideration. Fet these intluence the lubricating properties of the oil very consilleralily. It is, therefore, proposed to describe onc or two simple tests by which one can gain a rery definite estimate of the quality of the oil after it has spen a certain amount of service.
It must be understood, in the first place, that oil may lose its power of lubrication through one or more of three causes.
(1) Oil may be partinlly charred and carry particles of carbon and other impurities in suspension. In other words, it becomes "dirty."
(2) The oil may be diluted by petrol which has entered the cylinders in liquid form (through the much condemned practice of priming, or through an inefficient induction system) and has passed the piston rings and drained to the sump.
(3) Water may hare reached the sump through a bad joint in the water-jacket.
It may seem to be bordering on the ridiculous to suggest it test for the presence of dirt. Of course, if dirt is present in quantities large enough to clog up the filter there is no doubt about its being sufficiently contaminated to require changing. But, apart from this extreme case, it is not easy to estimate the extent of the presence of dirt by merely looking at the oil in bulk.

## Comparing Old With New.

A good plan is to place one drop of it on a clean pirce of white blotting paper, placing beside it another drop of clean oil of the same grade. If the paper is now held before a bright light, the two spots appear as mose or less translucent discs and the presence of dirt (if aby) in the former is plainly seen and its relative amount and character casilr estimated.
The dilution of lubricating oil by petrol is a serions matter. Most oils (all the mineral oils, in fact) are readily soluble in petrol, and the presence of petrol has the effect of materially reducing the viscosits of the lubricaut.
Now; the imporfance of having an oil of suitable n2!

Viscosity has been much discussord, and ahliongh it is admitted that a suitable riseosity is mon the only pro berty called for in a lubriesm, it is a vens neeessars property, whthout which other murits wombl he heless
Most bearing surfaces work undor wh-inhrable mres sure, which, of course, tencls to shateme out the filu of oil spparating them. It is the visinsily of the oi Which resists this squeczing-out offom Apart, there fore, from its friction-reducing profnemien, an oil musi have sufficient viscosity at the temprathen at which the bearing works to resist being cjumbl hy the pres sure exerted. A greater viscosity than hhis is undesir able, because its effect is to increaso rusistanm: We see. therefore, the importance of using (aml mantaining) oil of the correct viscosily

## Viscosity lnvestigations.

To compare the viscosities of 1 wo ands is suite a simple matter, but to obtain the riscusity of a sample expressed in some definite unit is a mulh more difficult undertaking. Howeser, the former is, forlunately, the prohlem with which we have to deal, and all that is necessary for this purpose is a shore langth of glass tube, about 10 mm . bore and 100 mm . Jong, drawn out at one end, learing a hole about 1 mm . atooss. Two suitable points are marked on the tube, either by seratehing with a diamond or by fixing two strips of stamp edging.
To use this simple appliance one merely fills the tube with oil and notes the time in seconds (aken for the


A visual comparison between clean and dirty oil gives an accurate indication of the quality of the latter.
oil level to fall from A io $\mathbf{B}$. This mmber is directly proportional to the viscosity of the oil.

In the writer's engine Mobiloil A is used in the sump. A fresh sample of this dil was rom through a tube similar to that deseribed, and the time noted was $\$ 2$ seconds (this being the average of a fen trials). A sample of the oil taken from the sump after doing 2.000 miles (the makers of the car recommend changing at intervals of 1,000 miles) ran through the tube in 76 seconds, care being taken that the oil was at the same tomperature in both tests.
loor comparison we will take the viscosity of new oil
$100 \times 76$
as 7110 , when that of the used specimen berones

## 82

 this drop by the following facts:-The visensity of all oils falls with a rise of temperature, and experiments (1n) the ail in flustion gave these figures:-

$$
\begin{aligned}
& \text { Timprerature } \\
& \text { in loxgroes }{ }^{\text {r. }} \text {. } \\
& \begin{array}{l}
711 \\
\text { 4 }
\end{array} \\
& \begin{array}{l}
\text { (4) } \\
\text { (1) }
\end{array} \\
& 120 \\
& 1111 \\
& \text { 16il } \\
& \text { (S1) }
\end{aligned}
$$

These facts clearly reseal the importance of rectification, and it is to be hoped that rectifiers will somm make their appearance on small cars.

## Detecting Water.

The presence of water in any considerable quantily will, under the agitation of the engine, form an emulsion with the oil resembling mud, and nodifliculty is experienced in recognizing it. The best test for small traces of water is copper sulphate or "blue vitriol." This suhstance owes its blue colour to the presence of water in the formation of the crystal. If a little blue vitriol is crushed, placed on a tray and left in a warm oven fori an hour or ${ }^{\text {ftwo, }}$, weystalline structure is destroyed and a powder, consisting of more or less anhydrnus copper sulphate, is left. This powder is white. If a little of it is shaken up with a sample of oil, the powler will show a deep blue colour if a mere trace of water: is 1 resent.

It "should be borme in mind that if the anhydrous powder is left exposed to the air for a time, it will absorb moisture from the air and turn hlue ngain. In this case it will need leating once more before it can be used for testing purposes.


A piece of glass tubing drawn at one end makes a convenient methed of comparing the viscosity of used oil with new.

## A SIMPLE FILING SYSTEM.

$1)$Itobinblar fow subscribers to the Light Car and Gaclectr hind their copies of the paper. It covers - Helh a wide fiefl that only a page or two of each number are likely to be of use to any particular reader for finture reference. Moreover, it is not ushal to include adsertisements, which often contain information worth liepuing, in it bound volume, but every keen motorist should lile piages likely to meet his special needs.

The best thing for this purpose is a large book-form sile of the "wire-arch" iype, with alphabetical index sheets. This kind allows any sheet to be filed without disturbing the rest and each sheet to be turned orer indenendently. A punch is the only other necessity.

A simple and clastic method of indexing must be arlopted to make the information readity accessible. The easiest way is to write on the top of the feont of wach shmet, tirst, in capital letters, the class to which its contents belong, secondly the subdivision, if any, in hata class, and, fimally, the detated description.

Thus, a sheret containing a deseription of the Solith (ambletter shoukl be headed "CABBLERETTER, tulth." In this catse no subdivision of the class is neressatry. It is then filed under the index letter $C$. If the description covers (wo sheets, they must each be marked, i.e., "CARBURETTER, Solith 1 " and "CARRURE'TTER, Solith $2, \quad$ so that, if the second shect were remored by mistalir, there would be no ditticulty about
putting it back, even though the letterpress contained no mention of the word Solith.

Every sheet referring to carburetiers should be filed under the heading "CARBERETHER:" A description of the Cyclone extra-air valse should be headed "Calibl .RETCER, Extra-air Valre, Cyclone." In this case the subdivision "Extra-air Valre" is necessary. A plain sheet of "pmper should also be filed, headed "ExTRAAR VALVE," followed by the instructions " See CARBURETTER, Extra-aid Valve.

In the same way everything referring to tyres should he filed under the heading "TYRES." An article oi vulcanizing, for example, is best headed "TYRES, Vulcanizing." But a plain sheet should be included thader. the index letter V, headed "VLLCANIZiNG," followed by the instructions "See TYRES, Vulcanizing."

It often happens that two articles are described on one page such as under "Interesting Accessories." Suppose descriptions of a Quickfill grease gun and a Beemlight spot-light, both on one sheet, were to be filed. The page could he headed "GREASE GUN, Quickfill," and a piain sheet filed, headed "LaMP, Spot-light. Beemlyte," with the instrnctions underneath "Ser ChLEASE GI'N, Quickill." Possibly there might already be a sheet on file deswibing this spot-light. It would be sulticient to write the eross-index direction underneath the hemding already on the sheet. IP.R.


THE SECOND PART OI AN ARTICLE WHICHEXPLAINS IN SIMPLE I. ANGUAGE THE WHYS AND WHEREFORES OF A COMPLEX SUBBECI'

WE have seen the methul adonted in a carbureter 10 produce a mixture of petrol and air in approxi mately correct proportions and it will be mederstood that it is necessary for the mixture to be in a condition suited to the needs of the engine. These conditions may now be considered.

Before all else, it is necessary for the protrol to be vaporized, as the jet delivers it in the liquid form. It is well known that every liguid requires a definite amome of heat to convert it into a vapour, independent of that required to raise it to the boiling point. This heat is called the lateut heat, and if it is not supplied externally it is taken from the objects immedintely surrounding the locality in which the evaporation occurs. This, of course, results in a fall of temperature. The following latent heats may be useful for purposes of reference and comprison:-

Water, 966 IBritish ihermal units per lb.
Petrol, 250 to 288 British thermal units per 11 .
Benzole, 232 British thermal units per lb.
Commercial alcohol, 520 British thermal units bee 1 b .
For the petrol to be vaporized, therefore, it is absolutele necessary to supply to every gallon of petrol passing through the jet approximately 1.900 B.'Th.U. of hear. This is equal to the heat required to raise about 14 gallons of cold water to the boiling point. The more readily this heat is supplied the more readily does the petrol evaporate. but the point to be remembered is that the petrol will not esaporate without il.


It can be prored that if no heat is fortheoming from external sources, a correct mixture of air and petrol will be cooled 33 degrees $F$. if the petrol is completely raporized. Now, hiere are two important aspects of his question.
(1) Assuming that the petrol is all raporized, this is all to the good, for the function of the induction stroke: n2 6
is to get as mach mixture into the eylmon an pmsible.
Mmen here refers to weight, not volume, and ass at cold mixture will be specifically hearier than one which is warmer, the reduction in lemperathe will be an adrantage.
(2) On the other hand, at low temberatures thenetrol will not vaporize so readily, and lhe mistum may reach the evlinder before the process of wapmation has had time to take place complotely. 'This will tond to increase cabbonization, and, in any casi. will smomsly impair the efficiency of the engine. Fimther, if the initial temperature of the air is lose than ting agrees F., it will be seen that, assuming comblen wapmation. the temperature of the misture will fall bown : 3 degrees F., and if the air contains much moisture (it alwas: contains some the result will be a dajowit of hoan frost in the cholse tube and aromad the jol.


In acromatical work, where engines are called mon to work at the low temperatures of high altitudes cases have oceurred in which the choke tube has been almosi completely oljstructed by a deposit of hoar-frost, of course resultiug in engine stoppage.
Thus it is necessary to heat the carburcter, but it is one of those diflicult eases in which one is called upon to supply enough heat, but not too much. Ther: must be sulficient to raporize the petrol completely and prevent the formation of ice, but no more. Generally speaking. the case is met by placing the carburetter in some sheltered corner where some heat may reach it from the engibe, but for certain classes of acronautical work and motor work in cold climates something more is necessary. In such cases the choke tube is generally jacketed and put in circuit with the hot-water systeu.
Perhaps one mas add that the proximity of the carburetter to the warm engine, while quite necessary in cold weather, is not only umnecessary, but undesimble, in hot weather. There are many olijections to moving
the carburetter fo cooler summer quarters, but someHing may be gathed by fixing a screen of asbestos or wher non-conducting material to serve the purpose of intercepting the passage of the heat from the engine (1) the carburetter.

In the early days of petrol engines the mixture was sumbled by a surface carburetter. This consisted of a lank tolding a gallon or so of fuel throngh which air was draw on its way to the engite, suitable provision being made for regulating the strength of the mixture. An improvement on this desigh was the wirk carburetter, in which a mmber of wicks hung from a framework into the petrol and air drawn through this wick chamber became heavily charged with vapour.

An instrument of this type was a standard fitting on a famous luxury ear until comparatively recently. Amongst the reasons which led to its abandonment were bupuar prejudice and the fact that it did not work at tull whiciences with modern faels, a much lighter spirit being rermirat.

Is the eomblete vaporization of the petrol is of sumomo importance, we may protitably investigate the


A gauze cone of correct area fitted in the induction tract will improve vaporization by breaking up the pelrol globules.
fromess which groes on in the immediate neighbourlivod of the jet. Consider one drop of petrol. The only portion of this which call evaporate is the surface. The interior of the hrop has no chance whatever. It is thereforo necessary for elficient working that there should be the maximum amount of surface between the petrol and the air. In other words, the drops of petrol should be as small and as numerous as possible.

This condition is often produced by drawing a small quantity of air through the jet with the petrol, as is done in the common scent spray, thus delivering the petrol in the form of a mist. In addition to aiding the evaporation of the petrol this has a further admantage in reducing the inertia effect, with which we will now deal.

## Induction Pipe Design

Consider a four-cylinder engine with an induction pipe of the form shown in the sketch on this page. Let the firing order be $1,2,4,3$ and suppose that No. 2 rylinder has just completed its induction stroke. The next ralve to open is No. 4 , and behind it is a stationary column of mixture which has to be set in motion before any can enter the cylinder. This takes time and energy, owing to what is known as the inertia of matter. No. 3 cylinder is the next to perform a suction stroke, and when this valve opens it tinds the mixture already in motion behind it, and therefore is able to take adranlage of some of the work done by the piston of No. 4.

No. 1 cylinder bears the same relation to No. 3 as No. 4 ditl to No. 2. Hence we see that with this type of induction pipe there is a teadency for cylinders 1 and 4 to be starved.

This effect is very greatly enhanced if some of the netrol is still in the lignitl state when it reaches this branch of the induction pipe. This is due to the very ligh incrtia of a drop of petrol compared to that of an cqual volume of ralour. Hence this indicates the importance of completely vaporizing the petrol, if there were no other reason.


In some cases where difliculty has been experienced an improvement has been ellected by inserting a copper gauze cone between the carluretter and the induction pipe. Any drops of petrol larger than the mesh of the gauze are then caught on the wires of the gauze, and the rush of air through the meshes readily brings about the evaporation of the petrol.

Caution is necessary in applying this remedy, as it introduces additional resistance to the flow of the gas, and it is possible for the cure to be worse than the complaint. It is further necessary for the gauze to be securely fixed, as one case has come under the writer's notice in which the suction was sufficlent to lear the gauze out of its fixing.

Generally speaking, one should impose as ferv obstacles as possible to the mixture entering the cylinder.


Thus, all sharn turns in the induction pipe should be aroided. Inlet valres should be ample, but in this respect it is easy to jump out of the frying pan into the fire.

For efficient working-indeed, at high speeds for any working at all-it is necessary for the mixture to be in a state of violent agitation-to which the name "turbulence" has been givell-at the moment of ignition. Turbulence is rery largely produced by the gases passing through the comparatirely constricted opening of the inlet valve, although, of course, the compression stroke contributes to the process.
A.H.S.


## Light Car Comment - <br> and Advice.

${ }^{B y}$. Fowers
with the nail and pour in the oatmeal. Nfer washing and drying the hauds plunge them into the oatmeal aud rub it thoroughly into the skin. I will not attempt to explain the effect. hut it is so good that our grocer's bill already has an item. "Oatmeal. medium, lb., 2 of," or somethine of the kind.

## Rover Eight Oil Pumps-

TWHE jub of work to which I referred in the preceding paragraph was ou a 1903 Rover Eight. My friend. whilst on on short run, had noticed that the engine was begimming to get somewhat rough and. opening the bonnet. foumd that no oil was flowing through the sight feed. Being near home, he injected a large gun full of oil through one of the anions, drove the car to his garage and theu proceeded to inrestigate.
lemoral of the cylindrical tank from beneath the engine showed the drive to be opparently in order, as the tongue revolved when the starting handle was turned, so he directed his attention to the rane pump in the base of the tank and discorered that the ranes had worn so much that the sprivg holding them apart had made its way through the ends, fouled one of the ports, damaged the bore and snoiled things generally Being a hands man, my friend soon scraped the bore clean, wound a new spring, plugged the holes in the vanes and reassemblecl everything, but found, to his constermation, that the pump still failed to work.

## -to Avoid Trouble.

AT this stage of the proceedings my services were called in, but, after stripping down the whole affair again and reassembling. the pump still declined to work. Obviously, it was either receiving no fuel or no drive, and the latter proved to be the case. Off came the radiator and the timing-case corer, and the rertical skew gear was found to have three teeth missing. Whilst testing the drire from a prone position beneath the car, it had appeared to be O.K. owing to an undamaged part of the skew gear being in mesh, but so soon as the engine had been started the skew gear had been turned until the missing teeth registered, and then, of course, the drive had ceased to operate.

The only remedy, naturally, was to obtain a new skew gear, entailing some delay and the car being off the road for a week-end when it was badly needed. I adrise owners of air-cooled Rovers fitted with these pumps to aroid a similar misfortune by measuring the ranes the next time they
dismatute thena for elpaning，and making sure that madue weall owing to friction with the eccentric bore on which they bear lass not taken place．The vines shonlal moasume $\frac{1}{2}$ in．by 13－32 in．by ：3－16 in．

## Hyde Park as a Short Cut．

FTOli sume jears How the man who knows his l．ombon las made considerable use of：Hyde I＇ak whon traprlling ritgwands fiom the west． Vou enter the l＇irk at Lancaster Ciate or Marble Alell．alad procomed vial Iyde I＇ark Corner，Consti－ tution Mill and＇The Mall to Whitehall，through the Ammiralty Ar＂bes．Not only is this quicker than tho wxford Street way o Charing Croses，the Strand and Flowe stront ：it is also al quicker way to New Oxf゙いが virthilly（onvoring thror sides of a square instend of nun．Many jumple find this hard to believe，but ］have frover it afotin and again，in both directions．

 （ession．I hagith on hate doubts myself，and tried the nown dirmet lohte．I soon comvincel myself Hhat llof lourk route was still the better．These re－ matks il川ly，ul＂couss＂，mily to weekrays，between，

 botlor flan at similat mistance on the Great West


## Where Instinct Fails．

 11 thinkingly stej on to a railway frack？ Probbibly mome．No matter how sobsent－minded a pers：$n$ maty ho in the ordinary comse of lite the cight wh fhn lime has a wonderful effect in sharpening tho wits．If ans of us have oceasion （o）ust？a level ubssing we scan the signals．book both wils：and，with eyes and eats on the alert， hurry orov at quickly as our legs will carty us． If is strango dhat bhis instinct for safety should st utten fail when people cross a road．The
 flam a railwis，with its frains rumning at intorvals，its sienals，and the anmle warning given of the allultorah of at train．

On the road we have tranic keeping io no time－ table，a wide rariety of vehicles travelling at different speeds（nost with very little noise），no ordered stopping places，and side streets adding complications．Yet，lespite the fact that people are fall more aceustomed to streets than to stations and should be well aware of their perils， they have not ret developed that subconscious sense of danger which should warn them against a thoughtloss step．

## Accidental Reversing．

IMAVF：seen sevelial startling incidents caused by drivers acciclentolly engaging reverse，but the most hair－rasing $I$ have ever witnessed occurred a few days ingo．I was walking along the pavement in a main thoroughfare when I met a friend and stopped for a chat．

On the opposite side of the road was a narrow street，and in it a small coupe was standing with its rear number nlate towards us．Coming down the main street was a large saloon car followed by a tram．They had almost reached the side street when suddenly，without any warning，the coupe shot out backwards．Travelling at a remarkable pace it passed between the saloon and the tramcar，came right across the road，and． while we leapt for our lives，crossed the pavement and crashed into the wall of a public－house．The car took the blow on its dickey and bounced back into the road，the whole inciclent occunving only $: 1$ few seconds．

## Lucky Coincidences．

TIIF extran＂（linaly latit of the aflat was that， alhough it occured at the busiest hour of the day，when，as a rule，the strect is full of traffic and the pavements crowded with perlestrians， there were at the moment no other vehicles at the spot site the saloon and the tram and no other people on the parement except my friend and myself．Moreover．hat the car hat the huildingr a foot to the right or the left it woull hive crashed into a window．It was fortunate，too，for the car driver that the tram had such porrerful brakes，for it pulled ul）almost（lead．It would


Not the least trying feature of a winter trial is the need for wasting time in order to ON SALISBURY＿＿keep down to the $20 \mathrm{~m} . \mathrm{p} . \mathrm{h}$ ．schedule．This London－Exeter photograph shows E．Fairbrother＇s PLAIN． Windsor at the front of a string of stationary cars，whilst J．Hobbs（Riley）and F．G．Jones （Straker－Squire）are passing．
I.e at million chances to one against the driver finding such a ducky combination of circumstances actail.

What had happened was that ie had unthink$i$ gly put his gear in reverse and. seeing the street clear in front of him, had "trodden on the gas." Why, when he felt the car shooting backwards, he did not declutch or brake passes my comprehension.

## The Race.

As usual, a certain section of the ligy Press has fallen into the error of suggesting that the London-Exeter was a "race"-an element of slight exaggeration which prompts me to hope that next year they will really do the thing properly. Something on thess lines!

Nearly five thousan-l machines were lined un side by side at Staines last night waiting for the starter's fing to fill on the welfth ammonl race from London to Exeter and back arganizad by the Middlesex Cricket Club. Inrdly had the ceho of the pistol shot died away when, in a great mass, the roaring ears and motoreycles leaped across the Iiver Aron in il single body and the great struggle for supremacy began. Solisbury Plain resembled Brooklands a thousand times magnified. On. on, throngh the bleak December night, first one then another, then the other in the leat.
('rhe cony being "shorl," a bright sub. pops in a cross licading.)

## The Sentry's Challenge.

A halt. The cavaleade has now reached Salisbury and the first man in is weleomed with eheers and cries
of " Dravo!" -but" can he stay the conrse? Again a pistol rings out and again be hurls himself into the saddle, arljusts his sereen wijer and stamples on the gas, What a race! What a strugste! What enduramee
'Twenty-four hours after; the scenc again at Staines. Thousames of spectators are stompan rombl the historic stepls of the Old Gate IJonse; the field-alinses of tho timekepers are swepping the inky blarkness of the night: there is a tense silence. Suldenly a cry, Ite comes. be comes!" and hurtling down the straight we see him, swaying from side to side from a xhaustion, tho paek at his hoels. In an (fash he wown hes then the crowds surround him and the stenterian oice of at marshal is hente above the din of acelamation. "Py beaven. sir. you ce won!" dint whu is that rushing towards him: Ilis little danghter l"upps, st keen a motorist that the hard rims of counthes and : have left their silent imprint umon her bahy ehwelis. "Daddy," she sols., " you ve won the race. I lan of then Xi. 1 was lucky.

## The March of Progress

THIERE are many old posting honsis still in existence. but surely none is in al les likely place than Whitcomb street, Lomblat 1 anl int formed that Nicholl's Garage. Which must be familiar to all who risit the West lent. Was once one of the most famous posting honlue of its day An old print which hats just heen mombleed shows the horse stalls round the walls, will a meat lithe tablet over the "front door" of each amimal"s abode, giving its name. The pecho of howfs hats now given place to the mechanical boisws of the motorcar, whilst within a stone's throw are the headequaters of the Automobile Assuialime


A LINK WITH GUY FAWKES


Co Not "Black Out."

II- view of semi-oblicial Hecisions :and the orerWhelming majority ot motorists who are agalinst " Watekilly ount," it is surpris. iner (0) disenser that the minority still bolds out, and thus besobnes a menace to
 Who ust -1 the rothe all night. A courmanti but semsible motorist cammot hell feeling a bit of : bluto when he catroes ont with hating heathampes in tho face of an oncoming dricor who has "xtinguished his hatdights, hut there is no help fot it, abd it is the most foreible manner of showithe han the orror of his ways.

Unforlanaldy there js a growing tendency toWatels fernisals on the patt of those who believe they are sumbring in a just cause. This may take the form of suddenly switching on again-generally at a moment which will canse a " non-dimmer " the maximum of ammance and discomfort-or "hlnking" the headlamps; that js, switching on and olf rapidly a number of times. The first course of adton is hardly playing the game, the second is absolutely criminal, and we appeal most abruestly to the firir-mindedness of these offenders, brging them to fall into line, and adont the rule of the ma, jority-the only sate rule-do not switch off. There is, howerer, an exception to the rule. When "the other man"-usually a bus or lorry driver-has lambs which are no more powerful hath your own side lamps, then it is wise to slow thwn and switch off your headlamps. An emthatic refteration of its views hy the Royal Automobile Club would do good at the present time, and we suggest that the Club) should take immediate action.

## Circulation or Stagnation?

AN important experiment was begun in l.arliamont Square, London, last Monday, when the Commissioner of Police of the Metropolis instituted the Parisian plan of making all vehicles entering the sifuate proceed around the outside of it in a clockwise direction instead of passing straight across. Doubtless no nlicial information with regard to the conclusions draw by the tradic experts who watched the experiment will be arailable for some considerahn fime, but whether they decide that it is a succoss or a fallure, they will at least have gamed valualble experience.
 FOUNDED IN 1912 TO CATER FOR THE NEEDS OF USERS AND POTENTIAL PURCHASERS OF LIGHT CARS AND CYCLECARS, AND IT HAS CONSIST. ENTLY ENCOURAGED THE DEVELOPMENT OF THE ECONOMICAL MOTORING MOVEMENT FOR OVER TWELVE YEARS

NO CAR WITH AN ENGINE CAPACITY EXCEEDING 1,500 C.C. (11 LITRES) COMES WITHIN THE SCOPE OF THIS JOURNAL. THAT CAPACITY BEING GENERALLY RECOGNIZED AND ACCEPTED AS THE LIMIT FOR A LIGHT CAR ENGINE.

## Topics of the Day

We hold the opinion that the circular system at imporfant city cross-roads and cirruses speeds up traflic, adds to the safety of all concerned, and robs traflic driving of many of the difticulries experienced at the presont time by strangers who ate unaware of local rules and regulations. Under the axisting system, it is often almost impossible at a traftic esentre, such as Tratalgar sgulare, to decide on which side the rarious refuges should be passed, and it must be remembered that fallure to comply with the atccepted practice may canse a driver to be prosecuted for driving to the danger of the public! With the circular plan the driver cannot make : mistake, and for this reason, if for no other, it should receive the suphort of every motorist who cherishes the possession of a clean licence. That the circular sysfem works well in Paris cannot be denied, but the streets of the French capital are less crowded than those of our principal cities, whilst the crosi-roads and circuses are much more suitably designed.

## A Good Sign.

TMIL keen interest taken by the general public in this year's London-Exeter-Londou trial is yet another indication of the facts that motoring sport is attracting more and still more adherents, and that the motorist is gratually beginning to lose the horms and tail with which all non-motorists hitherto have credited him. They are beginning to find that he is really duite a reasonable fellow, that he takes his sport very seriously, and that he has managed without the searchlight of daily paper publicity not ouly to perform feats of physical endurance called for in few other realms of sport, but to keej) "his end up" with the other countries of the worlt.

We think, howerer. that it is necessary for the mublic to be told that the Motor Cycling Club's runs are not searching tosts of reliability, hut purely sporting events, sumported largely by amateurs. and organized almost solely for their thenefit. Such eremis as the 200 -Mile Race and the big Six Days' trials are entirely dilterent, but, so far, the former has attracted muhlic aitention only from a semsational point of view, whilst the very existence of the latter is unknown exment to keen motorists.


ESPITE: all the criticisms levelled againsi t. Whe extensive system of signjosting adopted in this conntry is probably thr mest in the world, and there is no doult that even a moviee with only a rery bried experience of the road, could dind his was from Lonton to diasgow-or to any other of the large dities of the country-by referring merely 10 signposts and un assisted uy maps or local directions. The great arterial roads have made finding the way even ensier than it was of uld. but there is no denying the fact that a aeneral knowledge of the direction and locality of the larger cities on or near ones route is of material assistauce, and it would therefore be hardly fair to sum un the case by saying that maps are umecessary

It is when the objective is some obscure vilage or fown of the geographical position of which one may: not hare the stightest ithet that guide-books ant manis are essential.

## Searching for "Blankby."

Int it be assumed that we have to start post-haste for a little village which we will call blankby. (blviously it would be a never-ending task to take a mall of Enss laud and llates and ender vour to find the exact locality of this little village, although one might he so lucky ac 10 hit on it after a few moments searching ; blat the systew is wrong.

What we have to (lo first is to look up the name in at road guide which has been mrepared especially for such references. Road guides, however, are not alwas sulliciently compreheusive to include places which may comjrise unly a few scattered houses. It they fail to frovide the information, a raibway guide can be consulter on the off-chance that there is a local station, or thr I'ost Ollice Guide on the assumption hat Blauliby has a post oflice.

To keep a complete library of gazetteers and largescale malss covering the whole of England may be an ideal way of tracing any town or village at a moments notice, but few motorists have such a store of information at their command. If the name cammor be found on any a vailable map, the next best thing fo do is in turn to the guide-book and look up one or two of the prominent towns in the particular county inclicated and find out whether the name of the village is mentioned in conneetion therewith as being so many miles away.

Having discovered approximately the situation of Blankley, the next thing to do is to trace out the hest route by means of atoper road map, and it is bofter to plot out a route to the neasest big town rather than to trust 10 cross-country roads which may appear to offer a shorter mileage. It is here that one's general цeographical sense is of assistance, for be it Dover, Bath, Gloncester, Leicester, Lincoln, Manchester or any other of the better-known towns or cities, the traveller can set out instinctively in the right direction.

## Telegraph Posts as Guides.

When finding the way whilst actually on tho road, there are certain fairly obvious and guite natural ghides which will assist the traveller. For instance, the arms which carry the insulators upon the telegraph posts are nearly always to be found on the London side of the posi. 'There are, of course, exceptions, but they serve merels to prove the rule. One can therefore always establish the fact that one is travelling either towards or away from the Metropotis.

Again, the sun, the moon and the stirs are infallible guides as to direction, and there are few roads in the liritish Isles wlich double back on themselves to such an extent as to defeat the rough calculations which an amateur astronomer may make.

Railwass and risets are not to be despised; the direction in which a river is flowing. for instance, will indicat the course being followed when one is lost; whilst ratibay stations, as a rule, fre clearly identified with

ع3:


Iet us take a case slightly nearer the " nerve centre" of tho system, and quote the letter and number A129. "A" signifies st main elassified road and the inrex mmber " 1 " shows that it lies between the main north road and the Dover roat. 'To discover the significance of the remaining (wo numerals, one must refer to the special editions of the oflicial maps of the Ministry of 'Trans-

SIDELIGHTS ON
Two of the photographs d signposts, that in the circle the town, village or hamlet $i$ is indicated. The map em the M.O.T. Rond Classifica for night driving is invaluab photo port, whereon are shown the pro cise course of every Class 1 and Class 2 road with its mumber, the "A" or first-class roads being coloured red and the " B " or secondary roads a distinctive shate of green.

The complete edition, however, comprises no fewer than 73 sheets, and unless the reader is in the hapmy position of being able to aguip himself with this veritable goldmine of information, he will have to rest content for

r
lo time being by limiting his knowledge uf what the Ministry of Transport's lettering and numbering signilies to the amount of usefulness which can be derived by studying our key map. The letters and numbers have more of an official than a rublic use.

Finding the way by daylight is a comparatively simple matter, providing, as Aheady stated, that one's objective is near a well-known town or village, but at nighttime the task becomes far more complicated, if for no other reason than that signposts are easily passed without being monerly read.

If time permits, it is an excellent phan bofore sturting on a long run to prepare a route card giving the main towns and villages io be passed through, together with the mileages between each and the total mileage from the starting point. One will hen know tolerably well which direction to take in the centre say. of a busy town or when fitced with the alternative of a fork road. Onco arain we would stress the usefulness of a spot-light--sill am illegal, hut ahmost universal, fitting. With its aid signposts may be read whilst the car is on the move and any amount of time and trouble sared. In the albsence of a spollight, however, many motorists

AN ARTICLE OF PARTICULAR INTEREST AT THIS TIME OF THE YEAR, WHEN ROAD CONDITIONS ARE DIFFICULT, AND FINDING THE WAYREOUIRES A CERTAIN AMOUNT OF SKILL ANI KNOWLEDGE.

ext examples of M.O.T. sowing how the name of mich the sign is situated nes all the essentials of Scheme. A spotlight and the upper right-hand
 =
entenvour to direct their headramps or side lamps on to the signunsts-an impossible fob very often unless the car is deliberately rum off the road or swing round ate an angle which may make it a danger to other road users.

A hint worth remembering in this connection is that signuosts on the near side of the road may sometimes be sufficioutly illuminated by the tail light, without the normal direction of the car having to be altered.

No doubt many owner-drivers have toyed with the idea of using a compass on their cars io help them when trying to find the way in remote parts of the country, and the writer has, in fact, seen a light car with a marine type of compass fitted on the facia-board. Actually, of comrse, it is almost impossille to employ any form of magnetic compass satisfactorily on a rat, ats its reading would be matde hopelessly wrong by the proximity of electrical apparatus and the large mass of iron and steel with which it would be necessarily surrounded.

## Correcting a Compass.

It is possible, of course, to correct a compase so that it records truly, despite the nearness of large guantifies of metal, and this is done in the case of compasses used on ships and aircraft, but their use entails "swinging" the craft to obtain the necessary corrections, and these apply only provided that after the swinging mo subseruent alterations are made. Thus, if a car filted with a compass was swung to obtain the corrections it would be fatal, so far as the accuracr of the compass was concerned, if the jack or a bag of tords were later moved from one tool hos to another. So sensitive is a magnetic compass to the presence of metal that helmsmen at sea mar have mometal objects about their clothing. and even the spring in a naval seaman's cap has io be made of canc.

There is one method, however, of finding one's way on the road with the aid of a mariner's compass, and this was described in The Light Car and C'yclecar daterl December 1111, 1925, in the course of an article dealing with desert travel by motorcar. The participants in the adventure which was described drove to a commass course by occasionally getting out of the car with their compass, walling some distance away from the car and obtaining a bearing of a cloud or landmark on which they could steer for some little time before taking a fresh bearing.

A mariner's compass is sometimes useful on tour when one is in a wild part of the country where signposts do not exist, and it is certainly helpful for mapreading. providing that one does not attempt to use it too near to the car.

## To Find Due South

In cases where uo compass is a a aibable and where tourists are unaware of whether they are travelling: say, north or south, considerable help may be obtained from the sun. At noon a shadow cast by the sun point:due north: nearer sunrise it poimst in a more westerly direction and nearer sunset in a more easterly direction.

With the aid of a watch, quite accurate compass: bearings may be taken from the sun. The proceciure consists of holding the watch face upwards with the hour hand pointing towards the sun. An imaginary line drawn from the centre of the dial to a point midway between the tip of the hour hand and 12 oclock will then point approximately due south.

When the sky is overcast and the sun consepuently: not visible, it is impossible by day to determine ones: bearings without the aid of a compass, but by night, it any stars are visible, it needs only a very small knowledige of astronomy to determine which way is north and which south.

The moon also can be helpful to a night driver, whilst the writer once obtained considerable assistance when following a road marked no a rery inaceurate map of northern Spain. by deciding from the direction of the wind which turning to tako at forks and cross-roads.

JaNe.my s, 102 G.

The accompanying article will be of special interest to lisht car ouners who live in remote country districts where there is no uater supply. A sofl-water tank is nearly aluays found in a house so situoted, but is seldom fixed where it can be used by the motor ouncr

## WHEN WATER IS SCARCE- <br> -washing a car may stili, be easily and EFFECTIVELY CARRIED OUT

WHEN hints and tips are being given as to the best was in which to wasl al car, it is generally taken for gramterl that a nearby inexhaustible supply of water is avalable, but with the growth of home garages there are literally thousand: of motorists who cannot benefit by the handy water main and who must perforce wash their cars with the limited means at their disposal.

A constant supply of water is, of course ideal, but it is possible, nerertheless, horoughly and effectively to wash a cat with the comparatireis small quantity of water which can be carried in a bucket.

The light car owner who looks and thinks ahead will not fail to realize that the rours of his garage and his house really provide a rery fine water sumply and the possibility of building an underground tank adjacent to the wash-down, into which this matural source of agua pura can be directod, should not be overlooked.

The most simple way of installing such a supply system is to purchase a galvanized iron tank of, say, 1,000 gallons capacity. This may sound rather a lot, but it is just as well to pay a little extra, and thus provide accommolation for all the water that will be required than to save a few shillings and be undersupplied.

The tank should be sunk into the ground, and if the job) is undertaken scientifically the git which contrins it will be brick-linet.

An alternative where there is a clay soil is to dig the hole for the tank slightly larger than the overall dimensions of the tank itself, spread about 2 ins. of concrete over the bottom, drop the tank in place, and fill in all round with concrete.

## Strong Cover Needed

A firm flonr, of course, must be made over the tank but it should be removable so that periodically the tank can be cleaned out. Two-inch boards make a floor which is strong enough to withstand the weight of the car should it have to cross the tank when being driven into or out of the garage. The guttering of the house and garage must be connected up in the most effective manner, and this may be left to the ingenuity of the individual owner-driver.

It is possible to pick up a small secomd-hand bucket pump at a comparatively low figure, and this completes the installation, but if the nwner wishes to make his washing system even more eflective he will purchase a portable force pump, such as the "Iron Arm," which will draw its supply from the tank and which can be used to clean the muddy under-parts of the ear as well as the bodywork.

In the ordinary way a large bucket and the nsual washing materials will be refuired, and, with the assistance of the sponge, the body and wings may be cleaned, ulenty of water being used. In the case of a car which

- is very dirty, it may be necessary to go round with the sponge and a clean supply of water once more before the final leathering down is given.

The secret in this method of washing, as in all others, E3-4
is to tackle the mud hefore it has hatd tithe to limeme hard and eaked. Jhis applies with eren erwat fores to the under-parts of the ear, for when the mut is sart the powerful jet from the force pump will remow bratfically every trace of mud from the asders, umberides: of wings, and so on, whilst if it he allowed to cake hatad a brush will have to be used in addition, athat this, as every operator finows, is a somethat diry and incomrenient oneration.

It is not advisable to drain the water which has heren used back into the tank. This is false economy, from which no benefit and a great deal of trouble will pesill.

The arerage rainfall in this anmery should provide ample water for cleaning. After all, it is rain in the first case which makes washing the car necessary, athel if the heavens and the tank run dry it is gute obrious that cleaning operations by means of confons quantities of water are hatrly necesatys.
The tank, hy the way, should be filted will an werflow pipe, as in very wet weather its cabacity will mot be nearly suflicient to deal with the water which is entleded from such a comparatively large aroat

## Push-on Grease Guns.

MANY users of grease guns are still in the darli as to the working of the pusin-on type using at hat nipple, and they camot see how lubricant is fored in without leakage from the gan mozzle. The illustrations of a recent 'Lecalemit paient will explain matiors.


The Tecalemit gun nipple.


The nipple is conical in shame and is momally chosed he means of the familiar spring-loaded ball. The end of the grease gun which connects with the nipples has an ammar groote inside the nozale fitted with a leathor packing ring. The inside diameter of this ring is such llat it makes a tight joint with any niple with which it comes in contact.

## $\frac{\text { Abundant Proof }}{}$

## "GREYSTONES:" SHELDON AVENUE. LONDON NG

Sept. 17th, 1925. Birmingham.
Dear Sirs,
I thought perhaps you would be interested to know that a pair of S.S. $33 \times 5$ Tyres on my $30 \mathrm{~h} . \mathrm{p}$. Armstrong Saloon (Heavy Body) have already done 18,138 miles, and are good for some more yet. I intend to use these Tyres to destruction to see just what they will do. I shall be in Birmingham next week, when you can see the Tyres still in use if you wish. I think this is abundant proof of Fit Dunlop and be Satisfied.

> Yours sincerely,
Talbot O'Farrell.
P.S. I may say 18,138 very hard and fast miles!

The Dunlop Straight Side Tyre is the safe tyre-it does not depend upon air pressure for its hold upon the rim. It has inextensible wired-edges, and whether the tyre is inflated or not, it cannot accidentally leave the rim.
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Wic welcome al all times lellers sent to us by readers for publication in these columns, and while taking no responsibility for the opinions expressed therein, give preference to those letters which deal with subjects of general inferest. No anonymous communications will be accepted, but the writer may use a nom de plume if desired. To cnsure publication in the next issue, letters must reach this office not later than Monday morning. We reserve the right to make any alterations or deletions which we deem necessary.

## WIPE OUT THAT SURPLUS!

## The Unjust Raid - Motorists Must Unite.

## Extra Police Proposed and

1 ramb in a daily bewspaper recently that Mr. Churchill. mablde 10 thise up his desire to raid the Foad Fund, proboses how if allut some of our money townols the nayment
-The Motorist Pays ol' an inereased police force. I gathered that the excuse for this proposal is that the growing army of motorists reguires adilitional marshalling. IBut do we not sufiut bur, math already from police attention? If the extra constables wore to be used only on purely traftic-control dutios the scheme might be allownhle, although other members of thu commonity, who pay nothing, would also benefit.

What we have to fear, however, is that the newcomers will be turnal lonse ou trapling duties and similar sehemes of motorin" נersectutim.
L. Bone.

## Faiding the Road Fund.

Mr. Winston Churchill, make no mistake about it, is fully determinet to lay his hands on the motorists' money. $A$ responsible Minister does mut make orertures such as those (if which he has been the author unless Suggested Solution he means to tackle the problem seriously, of the Problen. :and the rumour that he will endeavour to coar the pill by trikiug ouly the surplus above a fixed amount, say 15 millions, is probably very near the truth

In that case motorists have the remedy in their own hands; let then enseme that there is 10 surphis. Exactly how this can be done may be explaned hy saving that if ciery ear in the kingdom were laid un for three months in the year the return from the honse-power tax at the neriod ended, say, December $\ddot{1} 1 \mathrm{st}$, 192G, would be anything from two to four millions less than that oblained last vear ; in fact, it would represent the major part of that surplus unon whish the Chancollor is casting covelous eyes.

There might be some odd shilliuss in his favour, lut few mutorists would grumble at this. The so-c:lled surplus of the Road Fund would beenme a world-wide joke and would moloubtedly make the present and future Chancellors of the liseherguer think vers hard before thes decided to meddle with fuuls of such an meerinin quantity.
'Ihe higgest drawback of the schene would, of course, be the loss to the trade-that is. the supplier and repairer; but it is a moral certainty that during the dark winter months cars, althoush licensed, are not used nearly, so much as in the summer. Firthermore, the three months' idleness would
give the owner every onportunity of havium his car thorombly overhauled, the money which he saved by suspendiug his licence helping towards the cost of the work and going into the packets of the repair man instead of those of Mr. Churchill.
K. J. Moore.

## Government Promises.

I see frum a recent issue that the Essex Motor Club has decided to address a stronig protest to the Chancellor of th: Fxchequer ngainst the proposed raid on the Road Fund. I certainly thimk that this club has set an

Motorists Should Combine. excellent examule, and $I$ agree wirh sou in recommending that every other club, should fullors suit. It seems to me that if every motoring. club in the kinglum (and there is a very large number) were to protest, the combined effort would have the desired effect.

The motorist does not want farours; be merely wants his rights, one of which is the carreing out of the fromise given to motorists when the Road Fund wis instituted. If the Chancellor of the Exchequer. Mr. Churchill, has forgotten this promise, it is up to motorists to remind him of it

If the promise is broken in spite of the reminder. We must not forget the fact when the next election comes alonf. Not only have we the vote, but we also have the power of gainins other votes by using our cars for canvassiug burposes. It this power is uscil judicionsly at electiou times. I do nor see that motorists should have much to fear iu the way of remessive legislation and taxation in the future

1. II. A. McM.

## "Honouring" the Motorist.

In casting a sueculative ere on the Foad Fund, Mr. Winston Churchill seems to have overlooked far more obrions and more lucratire sources of reventie for his own particular little schemes. He is ton
Tame Rabbits modest in his aspirations: too carefut and Mr. Churchill. to aroid hurting the feelings of the poople: too easily satisfied with the few odd millions that he hopes to aunex from capital most solemuly allocated at the time of the institution of the horse-power tax to the immrovement of roals.

Can it be that be does not realize how gladly every citizen would pay another Gd. in the $\dot{x}$ on income tax: how eager cselists are to contribute their quota towards better roads; how anxious are the owners of eats, parrots.

## OU゙R RE-ADERS' OI'YLONS (contd.)

tame rabbits, eanaries, and so on, to enrich the Exelhequer by paying a nominal tax for the pleasure they derive from their nets?

Who would not eredit a brilliant Chancellor of the Exchequer with more acumen? Millions lying idle, wealsh within easy reach and nll for the same warevy; "Pro bono puhlico!" Come, come, Mr. Churchill, do not be satistied with metely raiding the Road Fund: go the whole hogfax everything, raid the lat! We motorists feel edified that we should have been chosen for the signal honour of figuring in your first experiment, but we mould like to share the distinction with others as worthy as ourselves. look round you, dear sir. Nillions? Why, there are hillions obtainable by means as simple as those which you wropose to adopt, and ceerybody could share the honour :lld the glory ! Justitia.

## Whip Signals.

Is one who had his windsereen broken last week by a enrter who was indicating his intention to turn to the right by brandishing a heavy whip on the off side of his vehiele, I should like to join issue with "Focus " and Mr. Bigley in mrotesting that signalling with a whin should lne stopped. What are the views of the Notional "safety First" Council?

J: K. INMREWS.

## Unseen Whip Signals and

Focus" and Mr. S. Bugley compain that the whin siguals מiven hy drivers of horse-drawn vehieles are diftenle to see; but my complaint is that one very seldom has an opportunity of secing them becanse few horse drivers

## Audib!e

 tronble to sive them. Whether they do not know their respomibilities in this direction, or whether it is deliberate " awkw:udness," I cumot say, but so far as my observation foes not one horse driver in ten ever gives a draflie signal.Another point is that drivers of horse-drawn vehicles aro not reguired to arive "audible warning of approach." Why hot? Hecause ove can hear the horse's hoofs? So can a man with euod ears (!) hear a tram or a motor lorry, but both these vehicles must carry some apparatus for giving the required andible warning.

I do not wish to appear unduly biased, but it does seem that the horse aud eart comes oft very well in the moderm scheme of things. Suall matters, such as badly placed, extinguished or bon-existent tail lamps, of ten escape the notice nf the lyne-yed constable who would spot a wrong-sized car mumber mate at 1 , (нк) yards on a foggy night! I wouler what is the reason?
F. Smithon.

## The Will to Safety

A year ago, foresecing a vast increase in the number of cars on the road, and consequently a reduced ehance of surviving the season without trouble, I made a resolution to have no motoring accisent during

## A Commendable Idea.

 152. The terms of the resolution were to be interpreted in the strictest possible sense. I should not aceept from myself the exense that it was the other fellow's fault. . lecidents due to other people were among those 1 had to woid. That is what gave zest to the resolution. I was hacking $m y$ own care and resourcefulness ngainst the other fellow's nefligence or recklessuess.I have lent my resolution. Iry mileage has exceeded s, (oUO, mostly in Lundon and the Iome Comnties, but not so much as a scraped wing have I suffered or inflicted On thre occasions I preserved my elean shect by inches only-and I think it extremely probable that the idea firmly fixed in my mind that 1 must not have an accident helped me on those occasions to act quickly and correctly Its great value, however, lies in engendering a habit of watchfulness aud caution that prevents emergencies arising.

Why camot every motorist pledge himself during the roming year to have no accident? Let us all make it a point of pride to keep a clean record, fecing to it that we are not even the victims, much less the practitioners, of had or careless driving. 'The result would be an astonishing decrense in the number of accidents, and we should all fiel proud of ourselves when the figures were anmounced Start the campaign, somebody !
b38

## St. Christopher's Life.

Mr. IBirdis letter, which whs publishod last week and dealt with some ineidents in the life of St. ('hristopher, interested me very much indeed, but did not seem to be

## Enlightenment Needed.

 at all logical. Itr. Jipeh points unt that Ofterus came one day to at erncitix and, being told that it wals ( Mrist who hung mon it. forthwith rollisted under Lim and leter forried Him as a ehild arross at river, The point which oceurs to me as being so illogical is that st. Christopher first saw Christ on a crucifix and subsequently met Ifim in the flesh. Surcly this is contrary for all the teachings of the seriptures, and 1 am sure that 1 canluot be the only ruader who seeks further enlightemment. lerhaps Mr: Firelt will whlizn. Royal Air Fonce.
## Sparking-plug Position.

Kinowing the rumbation of Lodge Plusc, lath.. 1 am luath (o) eritieise their oninion regarding the best position for the sparking phan in at evliuder. but I should hesitate to put the mark of tinality on their stan, mont blat The Need for
Turbulence. The best position for the shark g:3) is flash with the inside surtace of the combustion ehambre." Thlic, in my apinion, is a compomise which is only ju-1/lied in all angine which overheats its plugs.
The experiments of bairstow and Alexamber hom lhat in a fixed eylinder (that is, with no turbatomee) the time af explosion was reduced by igjper cent. by movine the sparliing point from a position flash with the *iliaw ol the: enmbustion chamber to a (entral positian.
 period of explosion in and engine extinder is muly :lunt oblitenth of that taken umber exactly similar condition-, hut with מכ turbulence. Indeed, without turbulence: the internalcombustion engine would mot finchime.

I am not aware that any fesults fram shown blat dac advantages of turbulence preflude these tu he olstained hy it central plue position. On the contrans the binur hy loms. Watson, fated above, showed that frow shathins points
 ent.
The whole point of u-ing two plugs, oud ni aimilis at a central pusition, is to vedne the period of exaplosion and blas get a grod "peak" on the indicater disuram.

1. 11. Nাゥint.

## Close-up Mudguards and-

Deing a constant reater of your most exeollent :mel instrmetive journal. I am naturally interented in the varions sugeres. tions and discus:ions which ilppear in your columns from time to time, and two redent duniss, 10 my

## Swivelling

 Headlamps. mind, bear rather an important relation to wash other-i.c., "close-fitted wings Which move with the front wheels " ant "lamps which oferate in conjunction with the steeriny." Now, if such wings were fitted and the lamps were monnted on these (we alrendy have hmps in this position on a mumber of ears, and they apmear to be mate satisfactory) the haply combination of better dight and better mul protection would result.Of course, a substantial wing support would be necessary, but should not cost any more than if the usual lamp bratelets were fitted, and would even reduce weight to a certain extont. Naturally, the wiring would have to enter the wing at the point of least movement, say, nt the stub axle.

Another point, of course, is that, on taking a bend, the lamps would be thrown temporarily out of conjunctional focus owing to erch lamp moving either to right or left, according to direction of travel, thus producing two separate beams jnstend of the merged effect which results when the lamps are in the some plane. This latter being only of short duration, would not, I think, be much of a drawback in ordinary circumstances.

This iden, if exploited, would, I think, prove to be a success. It certainly las its advantages and no serinus faults, so far as I can sec. What do other readers think?

Alin LI. Stevens.

* Our correspondent loses sight of the fact that "close-up"
mudgurds are unspruns, aud therefore it is doubtful if the lamp filaments would withstand the jolting to which they would ine subjected. We would point ont also that as the law stands at present swivelling beadlamps aro illegal.-En.


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OU゙R READEERS゙ ORNION (conm.).

## Jowett Running Costs.

 seater Jowett der it luriod of nine months may prove ni interest. 'Ilac "ar is fitted with halloun tyres null smith': Shork absorbers, a combination which sives satisfactory comfort, provided that
Useful
Figures. ratar) are manotainel. 'The pressures advised by the makers of the tyrn ( 20 1 1 ), (mont athd 22 1 h , rear) will give much lesw pleasant tidill: Thbe tom show hatelly a sign of wear.



hours on ond. The netrol ronsumption works out at $4: 5$ m.p.g., a most satisfactars ligure, expecially as about onvthird of the totnl milonge has been done in IPwonshire. The only trouble experinned has been a slight leak in the radiator. I received most generous treatment from the manufacturers, who sent me a new one in exchange evir lofore inspectiog the faulty one, as they were entitled tor do uuder the terms of the guarantec. Hepairs and adjustments include $\mathbf{7 s}$. Gd. carriage on the two radiators.

Garage nud woshing is for holidass; I possess at garage sul normally do my own washing with an Iron Arm pump. which I Gave fond invaluable. Accessories include this bump ( $£ 117 \mathrm{~s} .6 \mathrm{Gl}$. ), $n$ waterproof shect to cover the cat ( $£ 2$ 2s.) and a clock ( $£ 1$ ). The cost of these should raally bre spread over several years.

The only criticisms concern the clutch, which remains on the fierce side, and the foot brake, which chatters badly when applied witu any furce. The last troulde has bern practicaliy cured by the local agent simply by fitting at much stronger spring. I pass on the tip to other Jowett owners. A special word of praise is due to the sama local agents, Menry 13utcher, Lid., Northampton. F'sur at comprehensive knowledge of the Jowett, coupled wilh courteous attention even to the monst trivial tronble. I should thimk it would he hard to find their equal
F. Fi. Kirme.

## Engine Modifications-Three-wheelers-Cross-road Dangers.

## Eliminating Poppet Valves.

Jour reent attiol an sleme and slide-sallo engites han
 valle da-i-1 which ] lave recently protected. In place of

Hh momat poppet valves far each cylin-
A Piston-value De:ign Which, in its mitl-stroke positius. covers the relinder pari chatag the compurssion and explosion


ly one of the cams and uncovers the eylimeder port and th. intake port. On the exhaust stroke the piston is drawn downwards by the other cam, thus coveriug the jutake port and uncovering the exhaust port. The accompanying diagrammatie sketch will enable the sequence to be followed.
The mechanical details include a fork on the eud of tho pistou rod. 'This fork drops over the camshaft and lase on it two rellers which bear on the two cams. The actmal timing of the engine will, of course, be governed by thi eontour of the cams and the manner in which they are set in relation to ench other. I shall be interested to lawo your renders opinions as 10 whether the idea is workable.
W. F. Iemithge.

The D'Yrsan in the "Exeter."
In last week's issue of The Light Car and C'yclerar the: following comment was made in sour special account of the 1. ondon-Exeter-London Trial:-" The only observed hill on the outward journes-Feak-is lon:",

## Peak Hill <br> Performance.

 rough, but easy. We watehed a considetable number of the cars on the gradient, but none save II. R. Taylor's d'Yisam came mear to failing aud there was little to choose between the periormances."This comment as regards my d'lirsan must surels be ant cror in composition. With my passenger may we point ont that Peak gave us no diflieulty whatever? Ascending the hill we passed an A.J.S. motorcycle combination, took to the rough and renched the summit at 10 miles an hour in low gear with plenty of power in band. lour comment is indeed enrrect in that "Peak is long. rongh, but casy," but it is ecranaly incorrect to say the d'risnn came near to failing.
II. R. Thyeor.
II. L. Mitrerson.

Police and Traffic Signals.
With reference to Mr. J. Brown's recent letter under the heading of " The Duties of a Constable," it may interest him to kisow that I complained recently at a police station that ת constable had, to my way of thinking. mearly caused an accident to me at u cross-rand by failing to take nay interest in approaching traftic, and I understood

## 'Supposed to Give Them.'

 finm a sergeant at the station that any constable, whether on trafic duty or not, ie supposed to give siguals.I was approaching the cross-road, sounded my booter and held out my hand, the constable saw me and made some movement with hisabands which looked like'one's usual movement of the hands after a heary meal, and a yawn! I went on, as the sigual, if auy, was anything but the stop signal, and I liad to brake as hard as possible to avoid another car. doing about 20 m.p.h., across my bons. Having carelessly mislaid a limb some years before "in foreigu parts," I had nu wish to part with the others, and felt very sore with the constable, whose action might have caused a uasty accident.

I took his number, but had no wish to get the man iute serious trouble, which I think would have happened, hat I pressed the matter at the station.
H.M.M
$\square$

OU゙に RELIDERS＇OPIN゙1ONS（contd．）．

## Moving Cars by Hand．

With reference to the article＂Kegaining the Romd When
 nive a hint which may prevent others from having an aecident similar to one which 1 had

## A Timely <br> Warning

 recently．Mlways take great care when pulling the spokes of the rear wheels oí a car，in order to ease it along， hecanse there is meat possibility of catehing either the first or litale finger（whichever way the spoke is heing lield）in the outor hrake band，and breaking or serionsly injuring it．Pinflit．

## Night Driving Conditions．

So murh has been said，writton and thonght about the difliculty or otherwise of night driving that one hesitates to add anylhing to the grand total，but it has oceurred to me

## Reflecting Road Surfaces．

 that the remedy，if remedy there is，lies not in the lights．but the roads．living in rather a sechaded spot，a goorl denl of my driving is done over roads that have never had so much as a tough of the far hrush，＂so that they refeet the light in a mamer that makes driving a pleasure and powerful headlights a mere extrawagance．Why not， themfore，replace the present tar dressinz by something of a more cherrful eolour？J．s lisrkwortif．

## Improved（？）Jacking Systems．

With reference to the idea of using a whed brace insteal of a jack handle，contaned in a paragranh by＂wocus＂in your issue of Janmary lst，may I ask how your contributor proposes to put the scheme to work on

## Cranks and

 Cranks．＂ the back axle of an average car？So far as I call see it would be menctically im－ pussible to grasp the erank handle of Ths brace uwing to its position；according to the distance between the nxle itself and the rear mumber plate．How－ ever，one eonld，of comrse．detach the latter，or even work the brace sideways with a specially made crank that would pass thromgh the spokes of the road wheel．Otberwise 1 am afroid that IIarley Strect may eucounter a further motoring malady in the shape of the malformation depieted in the sad little sketch below．


The dire consequences of using an awkward jack handle may be avoided by adopting the suggestion depicted below！

Altematively，I have an idea myself which might interest Focus，＂and which，no doubt，he could elaborate．
To eliminate the jack altogether，have pivoted at the bark of the car two large，seythe－like gadgets as in sketcll（1）．


When a munct：ge oremrs，drive un the mearest hill slowls． release the seythes and rur backwards upon them，as in sketch（2），thas lifting the rear whens of the car of the mround．This could be done to lift the front whels of the ral as well，but up to the moment I have not ruite decided how to get the repaired vehiele back on all its four wherls anain．oncest has been nfted．

Perhaps＂Focus＂might suggest a way of doing this．
$1+2$ Higi Tension liemp

## Sunday Sabbath Eelusion．

Pormit me to correct an error made by the contributur of the account of the London－Exeter－Lanton rim in yout issue of Jammary $]$ st，in colling Sunday the Sablath．This is a misnomer and very misleading on

The First Day or the Seventh？ the public，although ofien indulged in． The Fourth Commandment distinetly says that＂The Seventh Dily is the Sablath of the Lord thy fod．＂The Thh day is Saturdin，the last day of the week；any schoolboy knows that

This law has never been abrogated and is still in axist ence；that being the easc，Sunday is the first doy and is an ＂udimary day，standing on the same footing as Mondny of ＇I＇uesilay．

トтじtey IJoskisi

## Three－wheelers in＂The Exeter．＂

With reference to the letter by Mr．If．（icums Morgan in yonr isstue of ，Tannary 1st，regarding the exedent per－ formances put up by these relieles，which，in cpite of havina

Holding Their m－p．h．，as compmecel with amerage Own． as compral with rits ame capacity with hlowe sumis hating muly justice（1）these gallant little thwewholn：s 10 draw attention to the fact lhat they ean bot only mome lian holi their own in beary going，hut in the 100 －milu high－speed rest hetrl at Brooklands on Octaber 17hh list the．．welewars
 Wheelers of the same eapacity，not only so，bur wht uf the bine Morgans enfered eight finisherl，gaining vi弓ht memier awards．Out at the thenes entered only＂t aninet－imilas awards；in fact，nine cars had to retire，filloly ：i wer fine testimonial to the speed and reliability of than hamely little velicles．

Sour recent description of Mr．II．Inant＇：foronal－hrahing


Spring Gaiter Experi．．．ents．
 Car and C＇yplecar，may I add my apmeniation of the mility of spring eatiters：The correspondence that tonk plate：re A Six Months＇matter somewhat ubscome，amm］［ dotom Test． mimed to some consideration I cibtained at sit for ay T．j h．p．Citroên from Messrs．Prace，Windm，［blyh ant Go．，of Walsall，and，when fitting them，mad ms iwn ar rangements to observe the effects．

After more than six months I have fombl，Hum ixamina tion，that the grease has penetrated thoroughly between the leaves of the springs and is being held there，that thom is not sign of rust in spite of being out in all weathors，allul that there is mo foreign matter anywhere．The sinturs remain fmonth rad the gaters have given no tromble．Tho the most ＇asual observer it was obvious when the gaters were re moved that no attention was necessan＇y for a considerable period，and $\mathbf{l}$ am satisfied that the daims mate by the makers are more than justified．

Messrs．lirace，Windle，Blyth amd Co．gave my order prompt and courteous attention and the gaters supnlied were a furfert fit and of excellent appearance


## CONDENSED CORRESPONDENCE

Writing on the subject of bumpers，Motor Neeessities， Lid．，state that their J．M．fender bar woighs only il lb ． and that the maturint from which it is made is 2；per cent． stronger than steel．lis cost is not unduly high．

1）．13．W＂ire，who drove the Coventry Victor thre－wheder in the London－Wxetor trial，calls our attention to the fact that he is not a neweomer to competition work，ns wo deseribed him last woek．being the holder of three gold merlals sained in M．C．S．events．

## INFCRMATION WANTED．

 sine instruction liow is requested．－A．（ireen，12ti，Brait E：ond，Vdinhuryh．



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In Place of a Lathc
$1 t$ is esirenmely diflicult to reduce the diameter of a stud or bolt without emmoving : lathe : the filing down by hand is at lung lakk; in all probability, ton the shit will lont be truly circular when the juh is complete. If a geared hand-htact: is available, howerer, it man: be atase in place of a lathe, and thu malm will bresent no difliculty The brace should be firmly gripped in a vice in suell a way that its working is mit reatrieted. The part to be re luesed mate then be seened in the chuck and. Whil the brace is turned with one hands. af file may be held against the work with the other. If the assistance of a frimet, who will turn the hande, can lue whanes, more attention can be dewoted io mnnipulating the file and a belter limish will result. This idea call :matally only be put into bractien where small parts are eobertued


Pcdals may often be improved by covering with rubber.

## Simple Pedal Covers

In addition to the discomfort cansed by onc's feet slipping off the pedials there is always an element of danger. Even a rough metal surface affords a poor grip for boot soles, particularly when the feet are not placed quite squarely on the pednls. To overcome this difficulty rubber pedal covers may be used, aud a cleap set can easily be made from rubber matting, scrap pieces ofteu being suitable.

There are many methods of attachment, but, broadly spenking, they fall into two classes-those which necessitate drilling the pedal phates and those which do not.
In the first easo holes must be bored in the rubber pieces to correspond with
thace previously made in the pedals. If holes are undesirable, or the necessary tools not available, the rubher may be fixed direct to the pedals bos means of solution, as used for fastening rubber boot soles. Au even cheaper and more simple plan is to make the fixing by means of wire. This is effective, but, of course, not so workmanlike in appearance. I farmer hold for the rubber is ensured if the strips are cut longer than the pedals and turned over at the top and bottom betore hinding.

## Uses of Acetylene Tubing

Imong the sundrics and spares which arc well worth their place in a car is a length of acelylene tubing. There are several roadside troubles which may be cured with its aid, the most important probably being the temporary repaic of a broken petrol or oil pipe. It is a very simple matter to slip a piece of the tubing over the broken ends of the pipe, securing it in position with insulating tape, copper wire or string. It will not, of course, last indefinitely, as the action of petrol or nil will gradually destroy the rubber but it will be found quite satisfactory until a proper repair ean be effected.

Another use of acetylene tubing is as a temporary fan belt. If the proper lselt breaks aud camot casily be repaired, it is only a matter of a fen minutes' work to stretch a length of Lubing round the pulleys and tie the ends logether with string. It sometines

> Queries of general interest will be answered under this heading when answered under this heading when
ever possible, but a stamped ad ever possibie, but a stamped ad dressed envelope must be enclosed fo
reply. Telephonic inquiries cannot b reply. Telephonic inqui
R.S. (Loudon, W.11).-Unsuitable sparking plugs or excessive carbon deposit are the most likely eauses of rour engine contiuning to run after the ignition is switched off. Pre-ignition is certainly the trouble.
L.J.C. (Biggleswade).-We should not advise you to remove such a large amount of metal as $\frac{1}{4}$ in. from the cylinder base flauge iu order to increase compression. The most satisfactory course will be to obtain a set of new pistons which are deeper from the crowns to the centres of the gudseon nins than the existing pistons.
happens, foo, that the insulation of the sparking plug leads becomes chafed and fives riso to a short-circuit. If the Insubation is only slightly damagert. insulating" vape bound tightly romnd the knot will stop the short-circuit, but. should the chafing lie serious, a mach, better way is to slip a piece of rubber tubing over the lead, sticking it with rublece solution 10 keep it in place.

## Neat Badge Mountıng.

Finding a conspicuous position fur a club badge is often a difficult task when the radiator cap is occupied by a ther mometer or some other accessors ; but those possessing a small wetal drill eapable of making holes about 1-16 in diameter, ean secure most trpes of badge to the bell month of a hulb horm It should be noted that this applies $\ddagger 0$ the "openwork" kind of badge only, as solid plates would obriously affert the


## A neat and attractive method of mounting a club badge.

working of the horn. The number of holes which hare to be drilled in the bell of the horn vary according to the badge to be fitted, but three-point altachment is preferable. Small bolts or wire can be used for fixing.

Owing to the contrast between the usual aluminium or white-metal hadge and the black mouth of the horn, the badge is clearls defined. Clenniug is easy, and, if detached at ans time, there is little evidence of the fact, there being 110 disfigurement of the car.

E.E.T. (Stumrbridge).-The difliculty you have found in starting your two stroke engine when hot is most probably due to too rich a mixture.
IT.G.LI. (Taunton).-We are afraid that we cannot express an opiniou on : second-hand car withone seeing it. There are dubbtless independent engineers iu your district and we should advise you to employ one of them to inspect and report upon the car.

## İM. (Newark-on-Trent). - The

 "kicking" which rou experience with the hand brake lever of your car masy be overcome by lubricating the bearings of the brake camshafts. The lever will be moved backwards and formards if the camshafts cannot turn easily, as, with Motehkiss drive, the whole axle casing turns slightly backwards and forwards unter the influme of torque: faulty design is often a canse of this.1．－NSWER TO FOUR QU゙にRY （conte．）．

A．B．（Shrenshury）．－luu are not drainivg all the water ont of your Jowett cooling system by removing the bur helow the radiator．There is also a drain pheng on the underside of each cylinder which requires attention．

N．F．W゚．（Lomdon，W．12）．－The most simple way of lubricating the spring leaves is to jack un the car mader the irame allowing the wheds to hang， when their unsupported weight will open the spring leaves．You can，of course， enarate them to a certain extent with－ ont raising the vehiele by inserting ： erewdriver with a tabered blade．
A．St．C．（Sheflield）．－Most maliers of greasc－gun outtits market standard con－ version sets for the majority of popular light cars．Write to the concern you favonl，giving the male of your car，the late of manufacture and model，and they will inform you whether they stock suilable sets．Nipples of one make as a rule are not usable nith a ginn made hy a different concern．

D．R．（Stoke Nerington）．－You need have no fear of a conflagration result－ ing from the use of a radiator lamp． These are constructed on the well－known Dary safety lamp minciple．and can be hung under the bomet with safety．It is not al bad plan to assist the efforts of the safety lamp by using a radiator cosy and also throwing a ring over the bonnet．

L．II．（Whitby）．－Irresular workiuf of tho speedometer is most probably dun in your ease to a greasy drivint belt．Clean the belt and pulleys with petrol and rub a little powered rewin on to the surfaces．

R．W．M．（Wolverhampton）．－＇Th movement of the steering column of your Jowett car in and out of the bex should diot exist．Slack oft the uut whel champs the steady tube in position in the stecring box and tap the tubr farther into the box，retighten the nut， and you will find that the looseness hats disappeared

J．（Y．（C＇olve）．－－The method ai aljust－ ing the hand brake on your $10-15$ h．p liial is as follows：Hemove the flons boards，and you will find that on the cross－shat carrying the brake－lever there is a sleeve with a hexagon in the centre： by rotatine this slecve，which has right and left－hand threads，the calles will be slackemed or tightened，accoming to the direction of rotation．

R．V．N．（London．S．VV．12）．－The sfueak coming from the engine of your Jownt ear is most probably due to lack of oil in the dynamo－drive bearing in the timing case．

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$$ amo－d

$A$ the $i$ on ense in tront of in dible fided on the boss in front of the flexible counling；this should receive attention daily until the engine becomes some－ what more worn and the supply of oil from the engine is antomatic．At present there is mot suflicient elenrance for the oil easily $t o$ find its way right throurh the long bearing
＇I＇I＇（Carlisle）．－Kook at the mader－ sie of the batery lid．Inctails of chary ins ratos for your particalar battery will low fonsth there．

O．W．（Lineoln）．－Xou are currect， Jon ereaser on the off side of the liown Nine elutel housing focis the cluteh witherawal ball race．Attention shouht bo given to this point irequently：
lI．ri．B．（Newport）．－Irregalat oper：a－ tion of the electric horn is aemerally due to lonse or dirty connectinns．A broken vibrator usually causes the mente to be ransistemily fachble．Wo shauld recommend ：eareinl inspection of the wiring and the conlares in the ：witch．

O．s．（Luton）．－On sour matioular cat the chassis mamber is msually given on a phate on the dashhonrd．Is this hase apparently．been removed，we vill moly suggest that inspertion of wh wistration book may be helpenh，a：hat： detail should be included．Jou could write to the makers，ghuting the engime number，and ask for their hell．

R．A．C．（Plymonth）－Jiy joinine omb． of the clubs associaterd with the liosal Automobite Clul）you ohtain what ：Ire known as associate momberwhi，afsan－ lages．These compris privilates amer ing the points which yon mwitmo，＂20． you－home＂vouchers amd las：1 小 diner． Ion must remember that blu prien which you pay for assiciate momber ship is far less than the shlerviption for full membership．

## CLUB ITEMS AND SPORTING

## SOUTHPORT CLUB＇S RACE MEETING．

 An excellent entry has becn receired for tho Southport Mator Club＇s race milectinge，which isto bo beld to－morrow（January 9th）on tho to bo beld to－morrow（January 9th1 on tho Southport bach．At the timo of going to press cotrics totalled 75．including a number of light cars，while adjed interest centres in tha crent
owing to inc lact llat Major 11 ．O．D．Segrave （Sunbeani）will bo competing．In iho eren ing the club will bold its annual dinner and prize distribution．


J．C．Wood（Rover Nine，passing along Penrith High Street in the Liverpool M．C．＇s Liverpool－Penrith－ Liverpool trial，which was held on Saturday last．

TO ClUB SECRETARIES
At this time of tho year when clubi are busy planning events for the coming acason nid yev ：ho attention ol club secrelaries to tho fact that vo are always willing to publish detaila of sporifing and social fixtures．Reports of this nature must reach ns by the firet post on Tisbeflas morning for inclusion in tho issue pub－ lishril on the lollowing Friday．We ehell also nowly
omcials．
coventar triangle m．c．
The annual general meeting of the Coventry Trianglo Motor Club will be held at the clut headquarters，the＂Admiral Lord Rodncy．＂ Much Park Stret．Coveniry，on January 14ih Jannary 2lat is ihe dato，fixed for tho club＇s a supmer Ond lotel，Corentry：

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FORTHCOMING EVENTS
January 8 ．
Eisex MC．Anpual Ninner and Dance．
January 9.
Kent and Sussex L．C．C．Annual General Mecting．
Southport M．C．Raco Mceling and Annual Dinner aud Prize Distribu－ tion．
Cits of Lomanuary 10.
Circular Tour of Fent ．
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## January 14.

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Sonthern Jowett L．C．C．Social Ercning． Meting．
January 19.
Belsize－Bradshaw L．C．O．Annual Gencral Meeting．
January 21.
Corentry
Offcials \({ }^{\text {Triangle }}\) Niglt．，
January 24.
Cits of London Motoring Association． Social Run to Bognor．
January 30.
Cits of London Motoring Associalion， London－Stratlord－London Trial．
```

BELSIZE－BRADSHAW L．C．C．
J＇Le I3clsize－Bradshaw Light Car Club hel－1 a rery successiul dance at tho Bridge IIouso Res aurant，London Bridgo，on Tucsday bing pre－ cont．Dancing commenced at 8 p．m．，and tho floor was fully occupied until midnight In a brict but vers informative specch，the

## EVENTS



## CITY OF LONDON M．A．

 a very successtul senson，and plans aro now being mado for 1326．An nturafíive pro－ grammo has been drawn up．tho most impor－ tant event in tho near future beink，a lank－
dístanco relinbility trial from London ford－on－Aron，which will bo run on Januars亏0th．
Tho club suluscription，which is 10 s ．6d．．，in clude nssociatc membership of the R．A．C．and a filiazion to the A．C．U．A shecial insurance policy is being develoned，ahereby members may receive greater bencfits than thoac generally
arailable．The committeo is also turning its araliable．to committeo is also turning its
attention the subject of the weliaro of tho motorist，especially in London．and is attempt－ ing through the medium of its merubere to promoto＂belter motoring．＂Motor－escling members are being urged to carry rear lights an their machines，and all menbers are bring
asked to observo a special code of rond rules whioh has been carctully drawn up ly tho committce．
IInformation concerning the City of London Motoring Association will bo rearily forwardid hy thn hon．secretary，Mr．F．W．S．OAborne．
27 Fist India Dock Road，London，F．．14，on

## HAPPIER MOTORING THIS YEAR!

ET Dunhills show you the way to happier motoring this year. Let them show you how to H. make engine starting in cold weather an easy matter, how to keep the outside of your car spick and span, and the inside clean and warm; how to make your motoring more enjoyable in the most economical way. If you cannot call at their showrooms in London or Glasgow, write for the complete catalogue No. A. 2 - it is the clue to happier motoring.

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Thin Inmp in constructed along
the linen of a mincris lamp.
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than one penny. Weingh.
3i lus. Sisc 10 in. herizh by
3: in. diometer. Price 20 . Tin. Costose $1 /-$

An Accessory you cannot be without this Winter.


Dunhills Radiator Muff Made in water-, rot- and grease-proof material to follow the contour of each malse of radiator DUNHILLS Muffs add rather then detract from The appearnce of the car

 $\begin{array}{lll}\begin{array}{lll}\text { Plain Rodialor Muff } \\ \text { with roll-up front }\end{array} & 22 / 6 & 25 /-27 / 6\end{array}$


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These stoves may be carried about with safely, whilgt burning. and require practically no further attention after the fuel in started.


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72, ST. VINCENT STREET

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WAS it not Diogencs who went looking for an honest man? If you are looking for an honest bargain your searcla need not produce headaches and heartaches. Mr. John Priolcau has had much to say regarding this in the EVENING STANDARD. We alivays supply a mood car at a fair price, minus boihers and aches, so get into touch with us and make certain of the best allowance for your present car and for the supply of a new Model under the easiest possible conditions. If you are looking for a second-hand vehicle-one able to face the AA. or R.A.C. Engineers - then ask for our current list.

AWORD to the wise. A litte forcsight has resulted in our securing a batch of 192610 h.p. 4-Door Saloons. some Two and Four-seater Touring cars of 10 and $2 \mathrm{~h} . \mathrm{p}$. rating, etc., and they will be available shortly at prices that will make even a pessimist inierested. Can we send you details?

DEFERRED TERMS TO SUIT ALL.
The pick of the Second-hand Car market comes to Mebes \& Mebes.

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On view CLYNO always CALTHORPE FIAT R H O D E STANDARD
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## AROUND THE TRADE.

Th. Sihmeiclet ears are hmodled in this country by Schncichr Intomobiles (England), 13S, Long Acre, Lcmdun, W.1.

Lamsalens (ifalifax). Leth., Station Works, Malafin, hula theit ammal stant social and dance on Wednestay. December 2.:prd. Dancima, necombanied by the Works Orehestra, was continued until a late lonn, all prescut having a most enjugable time.

Owing to the ranilly increasing develonment fif the eom-
 Lell. have decidod to fancentente on this and are aceurdingly relinguishing the eoneession which they have held for the distribution amd sale of Dommet-Zotel cars in Great lirifain.


The Christmas window display of F. W. Lucas (1922), Lid. 240, Brixton Hill, London, S.W.2. The scene depicted a garage, while the car was mounted on a revolving platform, one half being in a very dilapidated condition, the other half having been renovated by the concern.

 suceesstul embet-term ditmer and dancer at tho: What for
 cipal. presiderl. and mone than 101 students and the ir inger were prosht.


 vehereby the develonaments of the latter conamany in commete tion with radio broalcast rece: ising allyaratus will onmo:a


 Radlin, lotl., are at Nmall Mwath, liamingham.


Hope deferred maketh the heart grow sick.




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 and scraped conamel work, don't run the risk of rust and decay. Always toip a tio of ROBBIALAC na your shelf, ready to touth un the surface. In ROBBIALAC you have the perfect enamel, ready for usc, smeoth as syrup. with a rich, glass. Uke fini.h


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BELSIZE - BRADSHAW, 1924,
9 h.p., 4 -seater, starter, etc., in perfect condition
RILEY, 1925, $11-40$ h.p., de Luxe, 4 -seater Tourer, wire wheels, rear screen, etc., equal to new in every respect. 1926 list price $£ 460$. Our price
1925, 11-40 h.p., Coupe, 2-6 seater, guarantecd, indistinguishable from new. 1926 list price $£ 495$. Our price 1925, 11-40 h.p., Tourer, rear screen, etc., run under 2,000, as new in every respect
SINGER, 1925, 10-26, h.p., 4 -seater. de Luxe, finished maroon, with artillery wheels, unsoiled
1924. 10 h.p., de Luxe, 4 -seater. balloon tyres, most carefully used, very much above the average .. 1923-4, 10 h.p., de Luxe, 2 -seater exceptional condition

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〔8
$£ 325$£335

CLYNO, 1925, 11 h.p.. 2 -seater and dickey, two to choose from, both equal to new 1924, 11 h.p., ditto
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1924. 12 h.p., any-weather, new balloon tyres, many extras, looks and uns like a new car .. ... 1922, 12 h.p., Royal, 4-senter, STANDARD, 1921, 119 h.p., 2seater and dickey. long chassis model, perfect condition.
AMILCAR, 1925, 9-50 h.p. Grand Sports, 2 -seater, F.W.B., etc., guaranteed, 75 m.p.h. 1926 list price over $£ 300$. Our price
CITROEN, 1925,75 h.p., 2 -sca:cr, indistinguishable from new
BUGATTI, 1922-3. $11.9 \mathrm{~h} . \mathrm{p} .$, modified Brescia model, 2 -seater and dickey, semi-Sports, wire wheels, every conceivable accessory, just been repainted

RHODE, 1924, 10 h.p., Chummy. special Sports engine, very nice condition

ROVER " 8 ," several in stock, 2 seaters from £65, Chummys £60, full 4 -seaters
HUMBER, 1925,8 h.p., 2 -seater and dickey, new and unused. List price $£ 240$. Our price .. ..
LAGONDA, 1921, $11^{\prime} 9$ h.p. Coupe. 2 in stock at $£ 60$ and $£ 75$, also 4 -seater all-weather at
luxe, 2-seater, overhauled and equal to new in every respect .
MARSEAL, 1923, 11 '9 h.p., 2 -seater,
aluminium body, many extras
1923. $119 \mathrm{~h} . \mathrm{p} ., 2$-seater, nicely equipped, splendid order
1924, 11.9 h.p., Special 4 -seater, Sports aluminium body, red wings. red leather upholstery, very smart, excenionally fast. .
SWIFT, 1920, 10 h.p., 2 -seater and dickey: equipped, perfect condition in every respect

## SECOND-HAND

AND NEW
LIGHT CARS, CYCLECARS, and ACCESSORIES FOR SALE


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Vor the convenience and security of our readers we have nn approral-
denosit bystem. The intending buyer forwards to our offce the nmount of the purchaso moncy, which will be acknowledged to both partien. Notes or money order save nime, Cheques must bec.made pasable Temple Press
Lide., and nro neknowledged to seller when cleared. 11 a sele is concluded wo forward to the seller the amount ngrecd unon. If no sale is

 nges, ctc. Carriaga is to be paid bj the buser. It the aricle is returned
acach party pays one wny. The risk of damnge in transit is the eller's. cach prarly pays one way. The risk of damnge in transit is the geller's.
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## CLOSING TIME.

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Other Business and Feditorial Nolices and Subscription Rates will bo found at the end of elifis section.

## NOTICE

Owing to pontal delays and irregularitics, is is advisable o pos adverlisement: EARLY ON MONDAY so na 10 ensure, as for as ponaible, that they reach un by the FIRST POST on Tuesdny.
Lately severnl advertisements have been received
inclusion althouph despatched on Monday.

## SECONDHAND

## LIGHT CARS AND CYCLECARS FOR SALE

A.B.C. A.B.U. M stora, Led., Walton-on-Thames. 'Phono, repaira manager, Eaber 540 ynd 541 Hepairs conversions and renarations to
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A.B.C., 1922, 2 -scater and dickes, $255:$ Ially cquipped and guaranteed.
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A.B.O. Sprosen, Ltd., West End agents for A.b.C. Exchanges; deferret payments.
1926 new super-sports model in stock.

A.B.C.s. Sce our wouderitul wine days' offer on page 27. Kirk and Co.
22 Pracd SL, Padtiogton, W.2.
A.B.C., 1923, 4 -gcater, dynamo lighting, siarter, hoori and side corLains, many extrns, in almost new condition, e80. Fxchanges or terme.
Fredrics and Co., L!d., 89 Gt. Portland St., London, W. $685-477$
A.B.C., 1926 model euper-sport, with bulbous back aluminium body, pneumatic upholstery, twin carboretters, Specialloids, latest tspe crank, cite., as per makeri' specification, shop-iolled, £220. Below.
A.B.C., 1926 model super-sports as abore, used for demonstration only. 185 buincas. Below.
A.B.C., 1924 Regent, dickes, overhauled, renainted, \&84. Below
A.B.C., 1925 sports, polished aluminium body, twín carburcticrs, good 5res exceptionalls tost an excentional car, e80. Ballow
A.B.C., 1923 sports, overbanied, repainted, new condition throughout.
A.B.C., 1922,12 -rolt linhting and starting, clectric and bulb horns, Belor.
Cash, deterred, exchange. Below.
Ward and Co., 51 Üpper Richmond Rd., East Putney. Phone 2818-19.
A.B.C., 1925-4, 4-seater, car like new thronghout and complete, \&70; exchankes or casy icrms. Cummir.gs, 101 Fulham Rd., South Kensinn:
685-5is A.B.C.s See page 25. Benmotors, $30-52$ Figh St., Wandeworth, S.W.18.
Battersea 1509. A.B.C., 1922, $10 h \mathrm{p}$, Regent, 2 -Eenter nod double dickes, dynamo litht ing, reconchpainted
406 Garratt Lane, Earlsfield, S.W.18. Phone, Wimbledon 2041 . Nariors.
$685-663$


 A.B.C. II. F. Edwards olter.

1922 Regent 2-seater, sunk dickey, fully equipped, cast-iron erlindhers, cacelient condition, 45 guincas. Exchenges or deferred. 175 Gt. Pori:
land St., W,1, Maylair 6977 .
A.B.C., sports 2-scater, £63; exchanges, balance deferred. Newnbams'
Heath Rd, Twickenham. 'Phone, Richmond 5293 . 685.717
A.C., 1923, Rosal 2 -seater and dickey, 11.9 hp all-westher equipment many otber extras, balloon tris, paint and upholstery and mechanical condition equal to new. tonxed to end of year, 2155 or exchange. A.
Green, back of No. 9 Blackiriars Si., Sallord Tel., 2191 Cent. zzz-438 A.C. cars. Accredited agents, Moore's Presto, North End and Tam
worib Rd., Croydon.
A.c., £160, late 1524 , Empire nny-weather 2 -seater, painted grey, rigid side curlains and full equipment. In perlect condition. Cairhncss aud
Co., Led., $\in 5$ fit. Portland St., W. 1. Tclephonc, Langham 2172 .
 clock, specdomect, etc., car rers carehmy band $£ 125$. Below.
A.C. 1924 2-sezter, $7 s$ abore, but painted light blue, spot lnmp and Mings other extras. nerlect oiler, flJT, Exchange. extended nayments
 will give any trial any time, $£ 150.1_{3}$ IIydethorpo Rd., Baham.
685-703 A.C. 1924 2-scater, dickey, all-weather muipment. nice cendition
 A.c. coupe: terms: $£ 15$, and 10 pasmenta of $£ 15$, or eash $£ 150$. Nic A.c. 1934, 2 -seater, dickey in nem condition and exceptional engine. c145; deferred terms. Bartlett's, 93 Gt. Portiand St. 685-559 A.Cs. Sce page 25. Benmotors, 30-32 Migh St., Wandsworth. S.W.18.
Battersea 1509 . A.C.1 1922.11 .9 coupe tax pait. balloun tyres, excellent conditicn.
f140; defered or liart eschange. Gcorgo Newman and Co. 369
Euston

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (conlinued).

AC. 1922. Rnyal model, 2 -seater, doublo dickey, nntique lenther upwise 2 hornt (c) j" nice order throushoul $£ 98$. cnsh, exclannpes, deferred pasmenis W. T?. Dunn, Lid. 326 Luston Md.. N.W. Thone, Muscum 5391
A.C. Mnruld Simona. Sce "Miscellancous Care."
A.C. 11. Fr. Edwards offer 1923 Roynl 2 -scater, completely equfpped, A.C. 122011.9 2-anter, completels equipped, rtarter, excellent condition, Oir guineas; exchanges or delerred. 175 Gt . Portland St., W.J. May

ALBATROS, 1925. norta 2-seater and dickey, 95 b p, alumiuium body 55 m.p.h., 50 miles per gallon, electrio Glarter and lighting, Sankey


AL日ERT, 1922.22, G2 mollel. 2-scater coupe and dickey, 12 hp , 4 peeds, starter and dynamo lighting. speedouncter, clock, mirror, screcn -iper, esc., a spare whels, nit esres pericct, very good appearance ant ion Garage, 160 Hihh St, Teddingion. Kingalon 2562 . $\quad 685-\mathrm{h} 788$
ALBERT, G3 mojel 4 -sealer, C.A.V. ligheinz and sintiel, duck, specidomelier, ruar windscrecn, new tyris, iolal mileañ 9, 145, uxcellent con154. cost £450, aceept £125. Alderton, Reigatc, surrey. phonich

ALBERT. Clearance sale. 1921 2.seater, atarter, goorl condtion, $£ 55$


ALBERT. Minold Simons. Sco "Miscellancous Carg." 685-x108
ALVIS, $1921,10-40 h \mathrm{p}$, scmi-sports 2 -seater, 65 mph , in pericct con dition throughout taxed to end of yenr, silu or exchange. A. Grect

ALVIS, 1924, $22-40 h p$, 4 -seater do luxe, puinted hark bhes, antique lratter upholstery, Auster rear acreen, automatic sween wiper, chork m.ph., a splondid car mill neeant $\mathbf{\Sigma} 235$. Exchphise n'icnileis naymenis

 Cent. 85 Sis
nchester
$685-627$

## AMILCARS.

Vernon Balls.'Plone, 1995 Putnes.
AMILCAR spares
Vernon Balls, Lendon.
AMILCAR Ecrolce.
Yernon laalls.
25 Iligh St., Falbam.
AMILCARS. Sco pago 25. Benmotors, $50 . \overline{5} 2$ lligh St., Windsworth.

## AMILCAR

Bcon and
Porter, I.td.
o!e concessionnaires,
Her the following guarantecd Lsed models:-
1925 sports 2 -seater. taxed, small mileagc, $\& 145$.
1925 G. sportg $\overline{3}$-scater, good condition, specinlly cquinped, 2220.
1925 sports 2 -scater, finithed bluc, new concition, guaraniced. $\mathcal{L} 180$. 159-151 Casta'naI, Baraig, S.W.13. (Closo IInmmeromith Broadway)

AMILCAR. II. F. FUwards offer 1925 巨pors 2 -ccatcr, compictely cquipAnd, flarer, shedomeler, liarliords, screch, disapperimg hoorl, excel-


ARIEL Sprosen, Lld. for Aricls, Excbanges, delerred paymente 1525 (July Arici 10 , full 4 -geater, as new in every way, folngenu corer, rigid curtains, lalloong. cont 2245, negligiblo mileage, ※145. 111 Gt .

ARIEL 9, 1.924 l. Tunel, chummy 3 -seater, mileage under 7.000 exrellent
 Green.

685-h690
AniEL 10. II. F. Edwards offer 1925 4-csllider A-scater, completely


AUSTIN 7, 1924, cnummy, sell-starter, all-weather cqnipment, sereral exeras. speedometer; 998 ; exchanges. terms. Allber Garage. Thornselt
lil., Farisacld, S.W. Latchmere 4588.

AUSTIN, 89 guincas. October, 1924, 7 hp, chummy, electric alarter, good Isres, extremejs amart appearance, rery fast, exchanges, deferred. Empiro
Motors, 525 IIIgh Rd., Chiswick, W. 4. Phonc 303 .

AUSTIN 7. 1924, chummy, starter, fully equipped, all-weather screens, hi autiful condillon throughout, repainted, 295 . D. F. Foulkes and Co.,
Lion Garages, Shrewsbury.

AUSTIN, 1923 dynamo Mgilting, speedometer, guaranteci] first-class
meflanical condlion, trial, $\& 83.23$ Wcstbury Arenuc, N.22. 685-h594

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (conlinucd)


 AUSTIN 7, 1924 ment, luggnge srit, shork absorliern, in specdometer, all-weather condition. 95 gnen or exchange motorczale and whl. Si Ĺpher Richmond Rd., Enst Putney. $685 \times 100$
 AUSTIN 7, 1925,1 moneh old. 250 miles only, $£ 155$; exelnanges, eafy



 AUSTIN 7, elearance ,ale, uswal eqnipmen orerhanled, fon, mmditinn,
 AUSTIN Thp 1925 rinmmy, tartox and lighting, allweather ratifs

 St., W.1. Langhami $1998 . \quad 685$ ós18






 EELSIZE, II. T. Enlwalis offer 1924 10-20 2-seater, dombie divkey,



## BELSIZE-BRADSHAW. Cumberags amf Blmpwon for bargrins

1923 2-scater, self-starter, balloon tyres, almost new. $£ 50$
192.34 -seater, self-starter, gooll oriler, really for use, .C55.

1523 4-seater, self-starter, almost new, ready for use, $\mathbf{x} 60$
Termin from 10 per ennt. down; exchanges. 5 Putney Bridge Jded, Wande. 685.592
worth. Putney 2728 .


BELSIZE.BAADSHAW, 192.3. Shn, 2-scator, isnamo, dickes, excellent condition, t65; exclangea, Iffered payments. Parkers, Lid. I3radahnw
gatc, Bolton; also $246-252$ Deansgate, Manchester.
$685-455$

 meter, new lyres, Jalloons on rear, as new, $\mathcal{C 7 5}$. 51 Upper Richmonil
Rdi. East Pulney.

BELSIZE-ERADSHAW, 1 S2, ri, ronn, S.S. dickcy, as mew, f85: dicforr

BELSIZE-BRADSHAW. Mar id Simona. Sce "Misollarcour Cars"
BELSIZE-ERADSHAW, IS2 5 , 2-scaler, laxcd, in rcry good condition, trial any time, price t'60. IIarerstock MIIl Garage, 50 Mnverstock Ilill
N.W.3. Phone, IIamptead 6609.

BLERIOT.WHIPPET, 1921 , 2-sealer, Ghp Blackburno enpinc, electric f14. Teddington Garase, 160 IIGh St. Teddington. Kingston 2562 .

BLERIOT.WHIPPET, 1923, 2-calcr, 8hp Bifichurnc, electric lighling


B54 For immediale allention, address G.P.O. Box 147, "The Light Car and Cyclccar," 7-15, Rosebery A cenue, Londcn, E.C.I.

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (conlinued).

BUCATTI 11.9 16-valve 2-3-cater 1923 nuodel, finished green with adeck winga, electrio lighting and starting, is canable of high apecds, Polltil aod Son, 37 Kenshaw Bt., Liverpool. Tel., No. $2944-5$ Royal. 685 BUGATTI. Superbargain. $192 \bar{J}_{,} 11.94 \mathrm{p}, 16$ valse, sporte clover-leni 5.
 cord isres, 2 practically unaoiled Englebert Cherron cord tyren unar whel and excellcon Mapson oversizo buncr comfort cord tyre, tonncau
 5 lamps, deshboard lamp, Klasonot eloctric horn, bulb hor, windecrecn

bugatti. Brescia, f225, 1924, dono 4,000 only, finc condition, dmamo.
 CALCOTT Scrrico Depot
CAL.COTT Mparch Trado whpised Any Caicall repairs, ororhauls, ex.
 CALCOTT, 1 g24, Why, tui couno, excellent condition, e145, exchnnge CALCOTT. Son win hewful nino days' olfire on mago 27. Kirk and
 CALCOTT, 1919. 2 atcr and sunk dickev, denamo lighting aud comWithingion, Manile ter. Jeliable, any trial, 255. Empiro Alotor Co. CALTHORPE Focirlist. Lichanges, deferred nasments. 1922 do luxo
 CALTHORPE. $18: 9$ f Eriter, 5 neir trecs, real bnrgain, e48; exchanges, 685-605

CALTHORPE, 55 gnincas. 1921 fnorts 4-goafer, dynamo, starter, ctc., Nhon and inco and excentionally fast exclanges, delerred. Empirc CALTHORPE, 48 Euincas, 1921,2 -savier, dynamo, atorter, otc., doublo


 695 -h675

CALTHOAPE, 1022, 10hn. do lure 2 -seater, dynamo, Btarter, dickes,


CALTHORPE, 69 ruinnas: 1925. do luxe 1-senter, antiquo leather,


CALTHORPE, do fuxc, cicarndce snle, 1922, 4 -scater, many extras, atractive rar, ©65, no veasonable ollcr relussed: Aclinnges. deferred. Laling Car Mîte, Spring Bridge, Ealing Mroadway. Phonc, 3265 . $685-675$ CALthonpe. Maxold Simons. Sce "Miscellancous Cars." 685-x 112

CARDENS Carden:- Cardens. 1921 and 1922 2-scaters, side-by-sldo soating, 7hp onkine, 2 specis, hood, gereen, horn nid all in running
 Phone, Pulncy 1827

CASTLE THREE, fiparo and interchangealin wheela, dynamo lighting.

CHARRON-LAYCOCK, 1921, 2 -J-senter nnd lintge dickes, 2 spare


CHAREON-LAYCOCK, 1921. 2-3-seater and large dickey, tyrer ns now

CITROEN. II. F. Efiwards offer 1924 Model 11.4 Engligh-bodicd 2.



CITROEN, 10.4 hp . 4 -scater icrms eT 10 g , and 10 payments of e7 10 s .
 CITROEN spocialises and distributora Neu and second-hand ears



## SECONDHAND <br> LIGHT CARS AND CYCLECARJ FOR SALE (continucd).

 Citroen 1925 model, as brand new, e $£ 105$. Delofords, Norlh Mow. | Marble Arch. | $685-520$ |
| :--- | :--- |


 CITROEN, 1925, 2-neater, at new, si0n: 1920 counce, 250 all frlly
 CITROEN, 53 guincas, $192 \overline{3}$. $7 \mathrm{hp}, 2$-seater, dynamo lighting, good 4 frea,

 CITROEN, 1925 model, 11.41 p, English 4 .scator, clock, speodometer, balloon tyras, rear and side screen, beantiful condition, taxed quarer.



 CITROEN, 2105: 1925, 7hp, 2-acater, ballicon tytes. Arthar Stranh GITROEN, 1925, 7.5, cloverleal, latest model, new condition, mileano 1.500, riessanablo oller. Writo, E. Carter, 52 Giascony Arenue. Ilami.
$685-h 749$ CITROEN, 1925, 7.5. 2 -ecater, Martlords, specdometer, balloon t5res, small mileage. as new. 298. Below.
CITROEN, 1922, 7.5, 2-scalor, usual equipment. f52. Fllce, Led. 11-15 nishonsgats Arcnuc, Camomilo St., E.C.J. 'Phono, Arenuc 58548 . 8 .
CITROEN, $1922,10.4 \mathrm{hp}, 4$-Ecater, starter, lighting, rear acrecn, meclanicall, nericet, appearanco excellent, taxed. $277 . \quad 56$ Flolmmood


 CITROEN, 1924-5, $11.4 \mathrm{hp}, 4$-scaler, all-wealher equipment. balloons.

CITROEN, 1924 ( (Angust) 7.5 hp 5-gater, Elarter and lighting, almo-e new tyres, lavishls equinped, excentionally low mileage, ludutinguthablo rram new eb2. Bclow.
CITROEN, 1923, $7.5 \mathrm{bp}, 2$-gcater, starter and lighting, very smart,


CITROEN, f80, taxed and insured, 1923 (Junc), 10hp, 4-seater. perfect


CITROEN 1925 7hp 2 -scator, ecll-starter, balloons, speedometor, etc., as uew, sparo syro cinured, smart. economical, sccept 187 . 10 a., nart ax-

 CITROEN, 11.4 hp .4 -seater, excellent condition, torms f8 10. and 10 naymacnts of 28 10s., or cash $£ 85$. McCarthy's Motors, 49 Green Lancs, $685-\mathrm{hBJO}$ cITROEN $y_{1}$ 1923, 2 -scater, vewly painted, specdometer, clock. cood


CITROEN 7, 1924 (late), E-seater, balloon trres, specdometer new




CITROEN, 1922, 11.4 Lp, A-seater, painted liue, scli wartcr, clack.


CITROEN, $1925,7.3 \mathrm{hD}$, counc. almost equal to new, $\mathrm{f125}$. The Black Mrorse Auto Seriico Co., Shecn and Greas Rds., Richmond. Surruy.
Re5-bichmond 2811. CITROEN, $7.5,1925$, 2-senter coupc, ballonn tyrez, exceptionally finc


# SECONDHAND LIGHT CARS AND CYCLECARS FOR SALE (continued). 

 $\overline{5295}$.
CLULEY. IT. F. Edwards ofter 19221 Ohm 2 -scalcr, suluk dickes, starter.


 CLYNO, clearanco sale, 2 -seater, balloon tyres, as new throughout,

 CLYNO 1926 Roval 2 anceter, front. wneof brakes, real leatlucr, Hasildords,

 CLYNO, occasionnl 4 -seater, terms $£ 10$ and 10 pajments of $£ 10$, or

 COVENTRY-PREMIER, 1922, 84p, 2 -scater and dickcy, dywamo, in



COVENTAYPREMIER, 8hp, 1922 , 2 scalcr, dynamo lightilng, splendid


COVENTRY.PAEMIER, 1922, 2-sealer, large doubla dickey, dynamo,

CROUCH, 60 m.p.h., 1923, Anzani 11.9, 4-scator, startor, sase blue.

Crouch. II. F. Edwards offer 192 J 10 hp 4 -cylinder, 2 -seater. all-
 W.I. Mis tair 6977. Exhauges or delcerced. 17 Gi. Porthnd 685 -728

DOUGLAS. f29: exchanges, deferred nayments: 1920 Douglas 2 .seatcr,


ERIC.CAMPBELL, 1924, 10hp. 4-cylinder 1.496 c.c. Coventrs-Simplex engine (bol to be confused with tho 8hn chummy Eric-Canpbell). A Moweriut de luxa model with ciock, speedometer, elcetric lighting nind biarting. spring gaiters and combined boos and hood cover, in excellent condition, docs 50 m.p.h. casily. $40 \mathrm{~m} . \mathrm{p} . \mathrm{g}$. in conntry.
ERIC-CAMPBELL (abore). Room for 2 adults and chlld In front seat, also has a roomy dickey for two, starts easily and gets away in second esar on the flat: ton-gcar car in tho country.
ERIC.CAMPBELL (above), lately been repalated and re-uphoisfered, well
worth examination, prisate or trade, 2155 or near offer. Box No. 2924 , c.o. "The Ligbt Car and Csclecar." or 'phone Finchley 3367 after 7 p p.in.

ERIC-CAMPBELL, 1924, chummy, dynano and atarter, C95: 1923 sports 2 -scater, aluminium body, red winga and whecls, periect condition, The Light Car Co, 404-414 Euston Rd., London. Phone, Muscum 3081 .

ERIC-CAMPBELL. ח. F. Edwards offer immedjato delivers of brand new 1926 8-20, cbummy, complotely equipped, starter, clock, speedo meter, electric horn, all-weather equipmenh makers garanteo, best bargain crer othered, 139 guineas. Bolow
ERIC.CAMPBELL, 1925 model, $8-20$. chumms, completels equipped. Euperb

ERIC-CAMPBELL, 192J, 10-22, 2-senter, with sunk domblo dicke5. ompletely equipped, starier, clock, specdometer, doublo windscrecn, all

 FIAT, 2-seater, exceptionally smootb and strong running, ner condition,
\&150, Owner, Cragleith, Hadley 1 Rd., Barmet,

FRAZER-NASH, eports, 192$\rfloor$ ?-searer, aluminium body, Anzani unzinc, cry small mileage, 5195 , used 6 months only. Hatlisn's Gara\&c,
South port. Tel. 1137.

FRAZER-NASH. Sprosed, Ltd, for sporls care, Exclianacs, deferred jaymeuta.
FRAZER.NASH, 1925 , 2-seater, guaranleed $75 \mathrm{~m} . \mathrm{p} . \mathrm{h}$., in perfect con-
FRAZER.NASH, 19251/2, J-sealer, Anzanl enginc, milenace nealigible, absolutely os new, taxod, $£ 235$. 111 Gt . Portland St.. W. 1. Fhone,
J.anghan 1212 .
605.522

FRAZEA-NASH. Sperizl 1925 super-eports. fitled qith o.h.r. Engines tuilt for tha 1924 200-Mils Thace, milcafo 6.000 and in periect condi-
ion, fitted with res. counter, speedometer, dynamo lighting, pressuro lion, fitted with res. counter. speedometer. dynamo lighting, pressuro just becn tuned for competicion work and is absolutely dieal for this nurposed. Any trinl. Hatchelier, 74 Arthur Rd., Wimbledion. 'Phone.
Wimbledan 511 .

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

FRAZER-NASH. We hare scveral demonstration and sccondhand cars

 G.N. Beforo deuiting to purchaze a rave writo for partículats of re
 5024.
 EtNos. l?ebulding. Npecial :uning All sparcs stocked. ixpcil



 G.N., standart morlel, dynamo, sper tumeter, dickoy scnt, parw whew, Mart Lanc, Barnes.
G.Ns. Vaduni Co., premice F.N. specialists, for raluo in recomititime, G.N.s ( 3 mont'is' suarantec) at arisertised prices. GN., superb 1922 model semi sports, creami borly, polished alunimintu bonuel, dickey wewly uhboletcred, salety holy caps, succiom
really excellent fyref, roller-bealing engine, bargain, $\mathbb{S} 9$.
 G.N., standard tourlog, 1922, fully equipped, .C. 57 10s.; scveri G.N., beautifal Legero model, polished aluminium body, sast, $£ 30$ G.N., 1922 Frazer-Nash, olhr., Mrpanted, fotal mileazr 10.000 G.N. 1921 (tome
G.N. Specialists, Vadum Co., 57 Bearnnefield Rel. fnear :" What Wan \%


 C.N.s. Go to Earls and teenre a bargain for the spring. G.N., $1920-21$, dynamo lichting, 5 delachablo whecls, paintris
G.N., 1922, dynamo lighting, shock absorbers, elcetric horn, linoil re-
 G.N., 1922 , dsnamo, dickey seat, specriometer, etc., iC40.
 G.N.s. Wo base a gnot slack of new igres suitable for these matainas,
also a fow scond

 G.A., lato 1922 , rery gool condition, extras, sisio windserenns, tath and
inspection lamps, new back tyres, fast, t50. 64 Woodside 1park Jrat.
North Finchley. G.N., 1921 , 8hn, 2-peater, dynamo lifhling, zood iyres and sparo, hool, in extra special condition, 429 eash or deterred terms. Naylort. 406
Garralt Lanc, Earlsfield, S.W. 2 B . Phone, Wimb. 2041 . 685.671 C.N.. Clearance asle. 3921, Eoot conlition, \&20, no rentonable offer

G.W.K. Messrs. © W.K., Ltd, Cordwalles Works, Maldenlicad, hare a
number of secondiband cals for zde at bargain prices.


## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continued)

 G.W.K. competition car, overlinuled and repainted, sell-starter, пaual
 GWYNNE B, seconl-hand cars, all models, overhauted and guarantecd,

 HILLMAN, 1921 , $9,8 \mathrm{hp}$. sports, polished aluminiurn body, with black Hinian dive fo thl whicels, fynamo lighting, cord tyres throughout


 HORSTMAN Muine 200 Mile racing car, fitted for road use. real bal II. .atwien or eary tcims. Cuvimings, 101 lulham Rd. Jon $685-57 \mathrm{G}$ JOWETTS. W: whet 2 excllent 1925 model 2 -scaters. As belor. JOWETTS. Therluid terms arrauged and exchanges. Propositions JoVIETTS. is carh. Two 1925 model 2 -seaters, fitted specte.
 sowert vice Station (Lotulon), main ngents and enecialists. All
 JOWETT. Ji. 'is (irmble, Crvstal Palace, authorized ngent, specializes JowETr, ne: and gharaniced second-land cars, Exchanges, deferred JOWETT. I:Amares, improrements and special accessorics. Write JOWETT Diput, 16 and 22a Gipsy Hill, Crystal Palace. 'Phon' JOWETT. FOC 11 , 1.Ad, the Jondon Denot and Sersice Station for now (1) Coull JoWETT, 3 -cealne, the $192 \overline{5}$ model. run 9.000 miles, perlect condition,


 Jowerrs. Sco page 25. Benmotors, $50-32$ Itigh St., Wandswarth.
$\therefore 85-501$ JOWETT, 1925, chabsis No. 54857. 2-scalcr. largo doublo dickev, hocdometer, allweathe cquipment, semi-ualloon Dunlops, rua only

JOWETT, 1925 , 2 -seater nnd dickey, condition ns new, orersize tryes and


JoWETT, £95, 1924, de luse, starter, real leather, nuto screen wiper
 JOWETT, 1924-25, 2 and 4-scaters, from $£ 90$, according to condition, wll guaranted. R. G. Gamble, 16 and 22 Gipsy Hill, Crystal Palace. 685.751

 K.R.C., 1925. f150: 2 -seater srecial sports, 4 speeds, fillcu hood, $V$ acreen, electric lighltinz Marles stecring. Guaralleed over 60 miles per
hour. White, 146 Holland Ru., $\mathbf{W} .14$.

LAGONDA, $x 510$, $12-24 \mathrm{hn}$, snloon filled with tront-wheel brakes and ent condition. Tull particulars from Lagonda, Lid., 195 Hammersmlit

LAGONDA, beautiful coupe, regificerd 1921 , little uscd, selt-started, sacrifice 245 . ruom wanned. 37 Beaconsfeild Rd., Willesden Green,

LAGONDA 1924 all-weather 4 -scater. E1:5: exchanges or deferred ternas. Thluc Light Car Co., $404-414$ Eustou Mid., London. 'Phone. Mu-
semus $\mathbf{6 8 5}-534$
 ounc, sunken dickey, lighting, sfarler, cleciric horn, sueedometer, spare uhed, excellent condition. Scalbridge, 35 Minsler Rd., Eust Dulwich
Sydènhm 2452 ,

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

LAGONDA. II. F. Edsards offer 1924 12hy 4door all-wenther, com-
 Maytair 6977

85-730
MARSEAL, 1924, model, 2 -seater, lighting and atartinz, new tyres all round. mechanically and externally first-class, 265 . 51. Upper richmnond
Md., East Putnes.
68597

MARSEAL, $1923,10 \mathrm{hp}$, sports 2 -seater, starter and lighting, all-alnminium body. Lyres sound. in very nice condition, $£ 49$, cash or 'delerrell.
Na5-670

MATHIS, 7.5 , 3 -seater, August. 192J. aluminium pistons, 4 specels electric lighting, starter, spare whecl, 3 new trys. 4 Hartords, Imonnik sen, any (rial, 68 guincas. Owner. Scriegs, 6 Cecii Rd., Musweli 11111 . $685 .{ }^{2} 760$

MATHIS porls. 9 hp . 1926, ahop-soiled only, real bargain. si20, ligh'

MATHIS, 1925, 8hp, 2-eater, sound condition, onls reason sale owner


MORCAN, 1923, de luxe, 8lip, w.c. MA.G., fully equipped, fyres excel leat, paintwork good, sound mechanical order, $\boldsymbol{x} 65$. Below.
MORGAN speclalists. Naylors, 406 Garratt Lanc, Enrlsficld, S.W. 18 MORGAN, G.P. very fast, $\boldsymbol{L} 50$; delerred pasments, exchanges. D. Rail ton and Co. 6 Chapel St., Salford, Manchester. Cent. 8539. 685-62. MORGAN, 1924. De Luxc, J.A.P., water-cooled, speedometer, dynamo lighting, 290. Below.
MORGAN, 1923 , Dc Luxe, walcr-cooled, MA.G., electric lightirg, specelo meter, finished purple, $\mathfrak{E} 75$. Below
MORGAN, ${ }^{1921, ~ D e ~ L u x e, ~ w a t e r-c o o l e d, ~ M . A . G ., ~ e l e c t r i c ~ l i g h t i n g . ~ s p e e d u-~}$
NIORGAN, 1925 . De Luxe, oh.s. Blackburne. s.-sided tyres, !ront-wheel MORGAN, 1925. Do Lure, water-coaled M.A.G., Lucas starter and lifhting set. specdorncter, tmall mileage, rizs. Below.

MORGAN, August, 1924. Acro Anzani, painted red, lined white. disces. hood, dynamo. clectric and bull horn. spotlight, spring gaiters, sery fast, small mileage, excellent condition, 80 gaineaf, privately onned. Seen at
IIadyn Park Garage, IIadyn Park Md., Shepherd's Bush.
$685-\mathrm{h} 7 \mathrm{SB}$

MORGAN, Acro, 1924, M. A.G., front liadile starter. Dunlop S.S. tyre dynamo, speedometor. Ace disc wheels, Sont accelerator, elock, electric
horn, hoot, Eliock absorbers, etc., \&89. Canham, Beulah IIali. Atkina


MORGAN, 2924 (late), G.P. Anzani, dynamo lighting, discs, sercral MORGAN, 1924. 8 hp , standard model, speedoncter, low raileage, beanti-


MORGAN, special racing. Known as "I Land Crab": 2 magnetos, 2 carbinrelters, absolutely a special machine. ready for immediate nse, f55: | exchanges and extended payments. 5 Putney Bridge Rd., Wandeworth; 685595 |
| :--- |
| Putncy 2728. |

MORGAN 1894. De Luxe, w.e. J. AP. small mileage, $£ 80$ Sont1
$685-589$
MORGANS. Momac's have for disposal the following guarantecd Morgans:
1925 Acro model. o.h.r. Blackburne, straight-gided tyres, liood, soecdopeter, vers low mileage, $£ 115$
1924 de luye, w.c. J.A.P., dynamo, speedometer, $\mathbf{f 9 5}$
1924 de luxe, w.e. J.A.P. dynamo, perlect condition. $£ 90$.
1904 Inmuly, w.c. J. A.P, side screens, etc., $£ 90$
1924 family, w.e. J.A.P., ppecdometer, $\mathbf{f 8 6}$.
1924 de luxe, w.e. J-A.P., dsnawo, speciometer, $£ 80$
1918 Grand Prix, w.e. J.A.P., lamps, hood, overhaulerl, $£ 45$.
1919 sporting 1 Chp a.c. M.A.G., hood, screen, $\boldsymbol{R} 35$.
Any of the nhowe machines can bo supplied on deferred terms. Homac' B ,
Offial Agents, $24 \hat{z}-7$ Lower Claplon Rd. E. 5 . Phone, Clissold 2408
MORGAN Servico Depot. Ofrclal appointed repairers by the Morgan

MORGANS. James and Co. (Shemeld). Ltd., 261-7 Ecclesall Rd. Shel ficld, official agents. Good stock of spares carried. New and second 2460 Central, or wire "Tact, Shemeld."
MORGAN, 1922, Grand Prix. water cooled Bla kburne, dynamo. Ō lamp*. special chassis, fast, sound, £ou. S1 Upper Richmond Ital., East rutney.
MORGAN, W.r., 1926, de luxe. specdometer, etc., mileage 420, braud new, £180. Malthews, Beni Mora, Oakthorpe Estate, Palmers Green.
MORGAN, Acrc, 1924. Blackburne, ncw body, rensinted, rebuilt ug Beart, f.w. b., Ilarttord, 7 lights, Ford stecring, new tyres, Triplex servens pneumatle cushious, lool accelerntor, electric horn, speedometer, 6115 or
offer. 25 Iligh St., Fulham.
$685 \cdot 1245$

## SECONDHAND <br> LIGHT CARS AND CYCLECARS FOR SALE (continucd)

MORGAN, 1 S25, Family model, were J.A.P., small milenge, as new, MORGAN, 1923. Family model, in exceptionally nice order, Rood tyres.

MORGANS. Write for our liat of overhanled scrond-lannd machinma


MORGAN, S59; exelhugea, delerced paymonls; 1922 de luxo J A r


MORGAN, 1924, Anzani engine, Grand Prix, dynnmo, dise whecls, "An, 685-560
MORGANS, new and secondthand; cash, exchange, delericd. We buy
Morgana. Ulympia, Wnkefield.





MORGAN, 1925, 8hn. J.A.p, mileage muder 5.000 , one owner only.
 Alwase opell. 685-515
MORGANS. Sprosen. Jath., for Morgans. Fixchange deferred payments.


 hood, acrenn, lamps, spedomeler, Way pail it murehasedi this week, 29 worth (Town station). 685-595

NEW CARDEN. 1T. F. Frisards ofler 1924 7hn 4 sealer chummy,


NEW HUDSON, 1920, 10hp M.A.G., J-wheeler, fynamo. Rannikaci, spare wheela, 3 speeds. reverse, recently property of lie Lissa of M A.G.
Co., f58. 51 Upper Jichmond lid., EasL Putuey.
 Nare ulicel, f42 10s. delerred terms and exchangen. Andren's Molor
Mart, 151 Whito Jlart Jane, Barnes.
 RENAULT counc, 8. 5,1925 madel, mileage 7,000 , new condilion, $\mathcal{E} 155$.

RENAULT, 1924-5, 8bp, 2-5 кenter all-weather, 6 balloon tyres, specto. RENA LI,
meter elecirid lighting, starting and horn taxed, small mileags, excep-
(ionally fast and powerful, $£ 145$. Write Wilson, 5 Arundel St, W,C,

RENAULT, 1924, 8. Shp, closerleal, 4.wheel brakes, exceliene condition, fis5: deferred or part ixchange. Giorge Newman and Co., z69 Fus10, $685-64, j$

RHODE. Mebes and Melus (Eat. 1893), sccoud-hnnd Rhode specinlials hith muter, clock, windsereen wiper, mirror. thep mals, eparo petrol can and in rice; the condition is excelient and the car open to examinatian b RIChARDSON Car Co.. Nillthorpe, near Shefield. Spare parts in

RICHARDSON 1921 2-seater, 8 hp J.A.P., $\overline{3}$ speceing reverie, dickel Real: A22: delerred terms aud exchangas. Andrev's Motor Mnrt, 151
Whi:e 11 art Lanc, Barnes. RILEY. Lewes Motor Works. Sussex. All Rileys completely orerfauled
belore offered. Writo lur biock list.

ROVER, 1925, Shp, do luxe, 4 -seater model, slightly used condition. almose equal to new, mechaulcal condition puaranted, f155. Thylors,
$\mathbf{4 9} 55$ Sussex Plare, South Kensington. Phone, Ken. 8558-9. zzz-9]

ROVER, 1923 , 8hp, 2-seater do luye coupe, d., 1 . and s., leather upholstery, speedometer, clock, condition throunbout as new. taxed December


RoVER. The Liverpoi Jhever agents, John Pollitt and Son, of 57.41 Rensbaw St., havo several 8hp and ghp 2 and 4 scater cars always on hand for disporal at prices fiom $£ 60$ to $£ 150$; cash or extended pay
mide.

ROVER, 8 hip, several in stock, every model, fices from $\boldsymbol{f 3 5}$. Pollaria
$\mathbf{G 8 5}-492$
THE MOTOR ELECTRICAL MANUAL

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

ROVER B, 1924, de luxe, 4 seator, dymamo lighting and many extras, in
 GOVER s, late 1921, brown, double djekes, dynamo lighting, splendid condition, spare whecl, new u'te, tools, pump, jack, inspection inmone cuc any trial will pleasure, c49; would drive 100 miles to purchaser, 17
llighbury (ichus, 11 ord.
$685-h 751$
 ded., Coventry, Phonc 2087.
ROVER B, C65, 1924 , rhassis 95698 , bluc, laxed, insured, z-sealer large dackey, new lyres, owner driven only, perlect condilion, any fraj
 ROVER 9, 1925, 4-scater, lablloons, speedometer, ctc., in first-clias order .
 ROVER B, 1020, 2-scator, diekey, self-starter, good ij'res, suthm\}, id8 Below
"nals, deferred exelinnge. Helow
$2818-10$
$685 \times 96$


 ROVER 8,1924 , de laxe 4 -ncater, lighting, stater, alt wenther gemip









ROVER B, 1924 (July), navy bluc, de luxe 2 -fealer, double dickery mamy
 ROVER, 8 hp, late 1925,2 -acater, brand now, abl-weather couipment,
 Co., 275 iligh St., Acton. Deserred terina, exchinges. lingios rane ROVER, 8hp, 1924, 2ealer and dickey, excellent conalition. \&85: Lwn 1922 model 8lip Rovers, both in excellent condition, 845 each. lix London. Phone, Museum 3081.

 ROVER Bs, 2 -anfo:s, -4-seaters, and snloon cougic-, in slock, must clear, any reagonable offers. Sonth Eallng Garage. Ealing 2985. 685-588 ROVER Bs. W"e havo a selection of 62 -seatera, several with dickey seals, from \& 32 10. upwards, carclully chasen and consequently in the best of ronditoon Also 1925 chummy molel, with atarter, ns new, 49 guincum 1924 full 4 scater, leather hond and upholstery, abablutels unseratched,


ROVER, $1924,8 h p$ brand-new 4 -scatcr. Weymann saloon becis, sliding windows in door, sell-starter ast lighting,
inakers full guarantce, special prfeo . \&ilf.

ROVER 19248 hp 4 -seater, stngter and lighting. fipredometer, all-
 ROVER 192591 p 4 -seater, storter and lighting, clock, enc-dometer,
alf-wealber cquipment, almost new tyres, absolntely as new flironghout, alluen
ROVER 1525 Shp cio luxe, 2 waler and double sunken dickev, sfartcr had lighling, 5-lanupet milrage
ROVER 1925 8hy chummy, rlynamolighting, tyreg az sew, smare whecl, ROVER in exceptional order, very smmri, 557 ; chovice of
ROVEA 1922 8hp 2-scater, dynamo liphting. sparo wheel. comprehen tyres, mechanically gumranteed, $\boldsymbol{x} 59$.
ROVER 1921 8bp g-scater, dynamo lighting, good tyres, absolutels
 Re-wrillen and containing over 100 new
Re-wrillen and c
2s. 9d. post frec.
illustrations. 2s. 6d. nct

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

ROVER 8, $192 \overline{3}$, chummy, iulls erulppect. excelitent condition. 65 ROVER Rover 9 , 105 guineat, 1925, 4 -cylider, like new, siprter, barpair, Piceadimy Circus. Rezent 986 , Motor Agency, 4 Denman $685-683$ ROVER. 1925. 9 -2011n, 2 sscater. double dickey, starter, balloon tyres,

 Rover e, £ड5, 1922, 2-seater, dynamo lifhting, exceptionally food
 ROVER ${ }^{\text {a }} 1923$, dywamo. excellent didekey; spredoncter, magnificent con-
 ROVER B, 1923 , de luxc, dynamo, clock, specdometer, leather upliolstery;
 HoVER 8s. Siwial to choose from, 2 -seaters and chummics, from \&40;
 ROVER 8, 1 C25, 2-seater de luxe, dynamo lighting nad starting, balloors
 nover s. , fimmmy, stallcr, clc., bargain, f59; exchauges and deforred.
 Roven \&, 1922 , all.teather, gon tyres, C 40 choice, sereral. ex-
 nover b, c53, 1921,2 seater, good tyree, repainted, new hood, punranOxichal lid, lleadine..


 Rover, 1924, Sisn, A-seater, terms $£ 9$ nud 10 paymenta of $£ 9$, or cash



 Whone 5159 . or exchime motorcscle. ROVER 8. Finchisy Molers olter 1924 2-scatct and doublo nunken dicker, dynamo and starter, taxcd, only one owner, superb condi-685-750

ROVER, 1922 , Bhn, 2-seater, dynmo lighting, n.-n, curtaing, condtion excollent throvghout, quict rumning, stmart appearance, £37 10s., ol

SALMSON. Apply to the London distributors, Gordon Watnes and Co., litd., for eocond-hand Salmon carb. Several always in tock, Part ex.

SALMSON, 1925, 10-151hy, 4-coor saloon, front-wheel braves, Lalloons, 4 specds. very low mileage, ndsolutely periect and indistinguishable from
now car. insured and laxed, $£ 275$. IN.J. Motors, Bromley. $686-135$ SALMSON, lato 1923 , Ginni Prix, filied kith benutiful moltled faluminnam 2 , leater bonly and dickey, V winiscreen, hood, disc wheels, start-
inf and lighit, fully equipped, vers fast, an exceptional car fl45, $686-275$ Bromey
SALMSON, 19243 , Grando Sports, special model, 2 overhead camshafle. high-compression plstons, Wes carburetter, special gears 2 Triplex wind focrens, 8 -day elock, $75 \mathrm{~m}, \mathrm{p}$. specdometer, extra farge headlights
 Twichenham.
SALMSON, sports, 1924, splendid ortier and condilion, bargain. £75: ex hannges. casy terms, ett. Cummang:, 101 Fulham Rd., South Kensing-
ton, S. $W 85-570$
SALMSON. Sprosen, Lid., for Salmsons. Exclanges, deferred payinents.
1922, deliverad 1923. 2-seater, drnamn linhing, clock, speedometer, in fxcellent conditlon, 265. 111 Git. Fortand st., W.1. Phonc. Lank

## SECONDHAND <br> LIGHT C.ARS AND CYCLECARS FOR SALE (contintied).

 SALMSON, 1924, de luxe 2-scater, dickey, s78. 8 Cornwall Mews SALMSON 1925 Sports, bluc, starting and IIghting clock. specdometer, \&35. Below
SALMSON, 1925, 10-15hp. 4-loor saloon, front-wheel brajes, Lalloons. 4 zpeerls, rers low mileage, absolulely perlect and indistinguishabli
from new car, insured, $\mathfrak{\& 2 7 5}$. KJ. Motors, Bromley.
K87-614 SALMSON 1925 fportn, paialed yellow, rel wings, very last, 2100 ; ex. changes, celerred pas ments. $\quad$. Itailton and Co., 6 Chapel St., Salford,
Manchester. Cent. 8539 . 628
SALMSON, E75; 1923, 2-scater, dirkey. side curlalns, speedometer, ventilators, electric horn, screen wiper, now accumulators. excellent weckend. Jiollingworth, 5 Qucensthorpe Rd., Sydenlifam. $685-\mathrm{h} 762$ SALMSON 1923 2-seater, dynamo lighting and atarter, one owner, per-
fect, 275 . Colc, Fecder Rd. Brdstol. SALMSONS. Sce page 25. Benmotors, $30-52$ High St., Wiandsworth,
S.W.18. Jinttersca 1509 . SALMSON, 2-scater, dickey, excellenl condition: terms, f7 10- nnd 10
 SALMSON. II J゙. Edwarün aller 1924 10hp, de luxe English Jody. 2 seater, tunk double diches, completels equippid, esceljenc condition. 88

 erred. Newohams, Ifeath 12d., Twickenham. Phonc, Richmond 529 .

SALMSON, 1923 , 10hp, semi-sports 4 -seater. slarter nad lighting. Eng
 SALMSON. 1924 , Englisb 2-scater bodg, thater and lighting. excellent
 SINGER 1924 10hp 4-seater, painted blue, electric lights, self-starter


SINGER. $10 h \mathrm{~h}, 1924$ do luxo 4 -seater, painted bltue leather uphol stery and good all-weather equipment, balloon tyres, special 12v. lighting and slarting. Epring gafters, liggago grid. etc. tasta and insured.gaod

SINGER 1925 IOhp 4 scater, sulall mileage, resaruished, fl50. Sumner SINGER, 1925, 10-26, fe luxe, 4-seater, alt-weather, wew condition. bar. gain, $f 150$. Lionel II. Pugh. 56 South Mollod Si.. W. Mayfair 485 sin .

SINGER, 1924, 10hn, 2-seater do luxe, dynamo, slarter, dickev, as new. ti 135 ; exchanges, deferied payments. Parker's, Ltd., Bradshawgate,
Bollon; also 246-252 Deanggne, Dlanchester.

SINGER, 1925 model $10 h p, 4$-seater, nainted buc, io exreptinnal condition. almost new, $£ 165$. Caithnesa and Co., Lid., 65 GL . Portaad $685-463$
SL., Welephone, Laugham 2172 .

SINGER, 10hp, 1924, de luxe 2-seater, all-weather equipment, balloon

SINGER, $£ 1$ ®ै०: 1924 model. IOhp. 2 -sealer, dike new. Arihur Stuart
and Co., 16 Littlo Portland Si., W.I. SINGER coupe, 1921, starting fund lighling, fully equipped and over hatuled by Singers at a cost at é72, mechanically egtal to new. accent
$\mathbf{f} 75$. Empire Motor Co., Withiugton. Manchester.
 SINGERS. See page 25. Denmotors, $50-32$ Ifigh St., Wandsworth,
S.W.18. 1sattersca 1509. SINGER, 1925. $10 \mathrm{hp}, 2$-seater, pericct condition, many extray, swall
mileage, insured to June, 2145 Below. SINGER, $192 \bar{s}, 10 h p, 4-z e a t e r$, rigid all-weather curiaing anil rear
 SINGER, 1916,2 -seater. dickey, quiet, fine order, overbauled, electrio Ighis, tixed, fio. lowest. 21 Trinity Square, Acru Lane, Brixton. $685-\mathrm{h} 804$ SINGER. K.l. Motors, Bromley, offer 1 S21. 1 Ohp 2 seater and dicker.
starting and lighting, very nlco condition, 835 . SINGER, 1925, $10-26 \mathrm{hp}$. 4 -scater de luxe, pneumatic upholatery. Triplex


SINGER, $192 J_{\text {, do luxe }} 4$-veater, ns new, $\boldsymbol{f} 95$. delerred payments. exclangos. J). Railton sind Co., 6 Chapel St., Salford. Manelaester, Cent
8539 .
$685-62$. SINGER 10, dsnamo, speedometer, 3 speeds, reverse, soud running oriler Mart, 151 White Mart Lane, Barnes.

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SINGER. Sinfely first! Erneat Grimaldi, Lid, authorizel Singer agents, olfer the following used modele carrying 3 months written
SINGER, 1925, 4 -senter do luxe, excellent tbroughout, $f 160$.
SINGER, 1925, snloon, been very carefully used, $£ 195$

SINGER, 1921. 10hp, 2 esentrr; torms, $C 510$ and 10 paymenta of f5 10 s, or cesah c5s MeCarthy's Motors, 49 Givera Lancs, Nowinglon SINGER 1924 do luxe A.scater, starter , digid side sercens. © Cl 10 ; ex-

 SINGER, 1924-25, de luse, nill-weather 4 -scater, erery:hing in nico order.
tailo 34io.
 SYANDARD enrs. Arcredited, Agente. Nonre's Presto, Northa End and STANDARD. Caso Motur Mail. Ltu. (EStnilished 1911. ig 925 shop-

STANDARD, 1924. all-weather 4-eater, dyriamo and etaiter. $£ 110$; ditto. 2-scalcr. eloo, all fully equinued licensed and gramatod. Ex-



STANDARD, 2-scater anil diveres, dynamo, specdometer, ${ }^{3}$ ancedq. re-



STANDARD 1925 2-snaler, double dickey, 11.4 hD , all-weather cquipment. therei and lighting. painted buit, halloon tyres, spectometer, small


 STANDARD 192411.4 hp 2 .seater, starter, dickis. clock, specdomelcr,

 STANDARD. IIydethorpe Motora, of 31 a Hydethotpe hd.. Ta'ham, oller the followig standards lar kaio or exchange; delerred terms. iplone, treatham 3440
STANDARD, 1924, 2-seater do luxe, bluo, in excellent oxder, s98

SWIFT, 1923 , 30 hm , 2-seater, excellent order, nny Inspection or qrial,

 SWIFT, 1921. de luxo 2-scalcr. dynmo li,hting. etce, ncriect condition,



SWIFT 10, 3-5-ncater, nearly new, maroon, right-hand chanen, lalloon tyref, lorely tittle car, f 180 : exchange, delerred: another. 1922 model,


SWIFT cars, hrand nnw, at bargain prices; 192510 hy siloons, list delerred ter:ns nnd nxchanges. Menleys, ol Gi. Portland st., W'1. $685-599$

SWIFY, 1921, 10hp. 2-scaler and doulule dicker, sintier and lighting. alinost new tyres, excepthanal condition, any trial, gennine lariann. 555 ,

TALBOT 1925 10-23hp ( $£ 9$ tax) 2-zeator and Eunk-In dickey, condition


## SECONDHAND <br> LIGHT CARS . AND CYCLECARS FOR SALE (conlinucd).



 TALBOT, 1924 (latc), 8.18, 2-seater, in excentional condilion. H. 685-468 TALBOT 8, 1923, a.ecater and dickey, rizid side curtaina, excellent foll

 TALBOT counc, $10-23 \mathrm{hn}$, 1924 , shock ahsorbers, luggage prid. ${ }^{2}$ sparc

TALBOT. 11, F Edwards oirer 1924 10.23, 4.door saloon, complectely Cruingrat. paintel. manroon with cord upholsters. exaplional conlition.
 WOLSELEY, 1924, A-ceator, like new thronghour anil complete, real har


 extras,


 deferred



 dickey
gna.
romplow

 wolseley. Iraruli Sinions. Sce "Miscellancous Cars." G85.x1]n
 model, tax and insuranco pail for one year. lefiforo bysing a eccond-


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ELEPHANT MOTORS, LTD., are the actual Deemster brare pat: manuFactureran and can sulpilly owners and garagcs with all paris from stock at ower than Decmeter official prices, with the guarantec ethat all gooda ari genulino to Decmster shadards, mado by Decmstcr specialista, aud nassed brovenenta are now arailable. Elephant Motors, I.td. Below.

## BELSIZEBRADSHAW sCrrico.

ELEPHANT MOTORS. LTD., haso undertaken tho manufarture of theso aris, and a completo rango of replacements is now avallable. Elephant ELEPHANT replacement sersíc for Sloger, Callthorpe, Calcoll. Alldays Enfeld, Marseal, Meteorite, Mercury, A.C., G.N., Duplex, etc., ele.

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 G.N. spares. Every part in sock; irade sumpled: orerhnula nna tuninge
 Otleg Rd., Leceds. Phone, Headingley 480. Wire, Pric, ,.eede.


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## (conlinued).

aEEMSTER offcial servica depot, overhauls and repairs bs ex Demster fall. Alt parts mado to
DEEMSTER origioal jige, patterna and drawings,
E. J. HARRISON, having purchased goodwill of Diemster denot, has the only service to oler theso incilitiea. E. J. HARRISON, Decmater Depot, 6 Queen Inac Mews, Carendislı $\begin{array}{r}\text { 2z2-539 }\end{array}$ MAUDES' for Morgan spares., All epares in slock. Trado supplled. mongan Metropolitan Area Service Depot, Fice, Lid., oldest and arbest firm (prewar) landling Morgan runabout. Specialiy appointed distributors of sparo parts, nll models; cnormous stocks. List iree-
$11-15$ Bishopsgatc Are., Camomile St., E.C.3. Phone, Avenue 5548 . L.S.D. Anjes. Any part oupplica. The Ono-Tree Motoreycle Co
zzz-418 SCOTT SOCIABLES. Scolt Sociablet Wie are the onls espert repairers


 MORGAN, pefrol and oil lank, new, never used, 1 Morgan Iront wheel, warrack finc, Aldwick, Bornor.

CARDEN , Hid New Corden epare ports supplicd solely by us. (Trade
 LONDON MORGAN SERVICE DEPOT. OMcially appoinced by the

 HUPBERETYE spare parts supplied immediately from stock. Wnncls-

## NEW LIGHT CARS AND CYCLECARS.

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A.C, 1926 cars. Any car taken in part exchange. Deferred terms.
Grarg z2z-308
 A.C. Nanchester. solo ngents, Graham Bras., $15-15$ Peter St. Wide
689 -9y A.C. (a) Accredited Azents, Vnere's Presto, North End and Tam-
worlh IRd., Crosclon. Phone 2625 . AMILCARS.
Vernen Inall. 'Phone. 1995 Pulney
AMILCAR spares
Vinon Balls, Londor
AMILCAR ervice.
Verman lasills,
25 Lich St., Fullam
zzz-29

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Boon and
Porter, Letu
Sole concessinnnalres for these inmous littio sporls cars. Immedinte deiveries of (irand sport models. In many distinctive Bnishes. 685-650
$159-161$ Castelnatr, lirnes, $S . W: i 3$. AUSTIN 7s. Moss's Agencies for Austln $7 s$. Extended pasments, part
exchanges. Warwick St. Leamington Spa. AUSTIN, 7 hp, lalest model all-weather, \& 149 immedinte delivery; exchanges and deferred payments arranged. Taylor's. Lld., 49-53 Sussex
place, Snuth Kensington. 'Phone, Nensiugton 855 .
zzz-200
AUSTIN. Rootes, Ltd, distributars and epecialisls, 7 hp , latest madels rom stock: part exchanges, delerred paswents. 141 New Bond St.
London, W.1. 'lelephone, Maylair 2010. Maidezone, Dorking. zzz-60e

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For immodiato delivery
Normand Garago, Led̀., will arrange part exchange: deferred payments Write for our scrvico quarantee. Normand Garage, Lid., Authorized Agonts, 92 Gloucoster Rd.. S.W. 7 ( 5 doors from station). Phone, Ken AUSTIN diatributora for West Itrinle and East Dorset. Imperial Motors Ltd., 187 Old Christchurch IRd., Bournemouth. AUSTIN. Car Mart, Lid., nro Lonclon Distributors and can give earliest deliveries of all Austin 7 models. Part exchange and deierred pay

AUSTIN. Ratoliffe Bras. Austin 7 bp 1926 models immediate delivers, motarcycles in part exchange. 200 Gt. Portland St., W.1. Museum
AUSTIN 7. Prompt delivery of 1926 modelö deferred parments, ex-

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