

A GROWING PRACTICE.

Amphibious
In the early morn- ings and late at night, during
the day, can be seen driving their light
cars on the roads to the coast, whilst most of
the daylight hours are spent at the helm of
motor boats or sailing vessels.

A pleasure in store

for you if you are
not already using

LODGE

PLUGS



You will find that they materially assist your engine to give of its best under all running conditions, while at the same time you are assured of almost complete immunity from plug trouble.

*Try a set to-day.———
Your engine will approve.*

Lodge C3
sold everywhere
5/-
in sealed red metal
box.

It is important to use the correct type of plug. Ask at your garage to see the Lodge Plug Chart, which shows the correct patterns of Lodge plugs for all makes of motor cars, or send a postcard for Folder F2, which also gives this information, to:
LODGE PLUGS LTD., RUGBY.

LODGE PLUGS CAN BE BOUGHT AT ANY GARAGE.

The LEADER of the 11·4 hp CLASS

The 11·4 h.p. Citroën represents the highest quality car in its class.

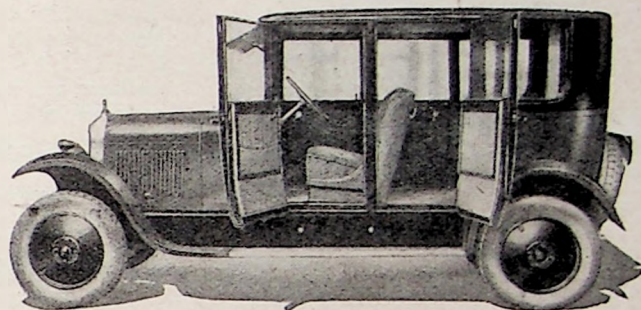
Years of experience of production of this model have enabled the Citroën engineers to evolve a car which, for performance and economy, is comparable with automobiles of far greater initial cost.

The two models here illustrated are "Supreme Closed Car Value." The Saloon has 4 doors and 4-wheel brakes. The Coupé gives three persons complete protection in inclement weather, whilst in summer it can be used as an open car.

Equipment is exceptionally complete, including: Sun Shield, Window Winders, Spring Blinds for rear window, Carpeted Rear Floor, Driving Mirror, Scuttle Ventilator Controls, and Interior Lighting on Saloon. Electric Lighting and Starting, 5 Lamps, Electric Horn, 5 Wheels and Tyres, Wheel Carrier for Spare Wheel and Tyre, Shock Absorbers, Automatic Windscreen Wiper, Boyce Motometer, Petrol Filter, Licence Holder, Inspection Lamp, Kit of Tools, Oil Gun Chassis Lubrication, Facia Board carrying the instruments—Clock, Speedometer, Dash Lamp, Ammeter, Oil Gauge, Air Strangler, Switches, etc., etc.

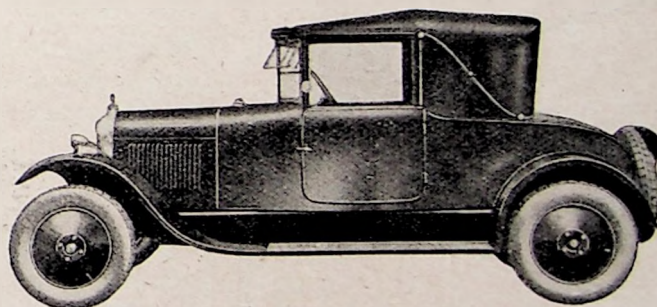
Any of the 500 Citroën Agents throughout the country will be pleased to arrange Deferred Payments and Part Exchange.

CITROËN



11·4 h.p. Saloon, 4 doors,
F.W.B. Fully equipped.

£198



11·4 h.p. Coupé Three-seater. With Folding Head and full equipment.

£190

Supreme Car Values in their Class!

Send for the Citroën Book 18.

CITROËN CARS LTD.,

CITROËN BUILDING, BROOK GREEN, HAMMERSMITH, LONDON, W.6.
Showrooms: Devonshire House, Piccadilly, W.1. WORKS: SLOUGH, BUCKS.

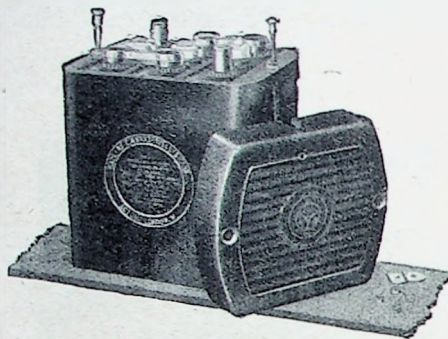
M & C 171

MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists the cause of economical motoring.

A1



THE WORLD'S BEST BATTERY



Telephone:
CHISWICK 3901.
(Private Branch Exchange.)

CAVandervell & Co. Ltd.
ACTON, LONDON, W 3

SALLS AND SERVICE DEPOTS AT
Belfast, Birmingham, Bristol, Coventry, Dublin, Glasgow, Leeds, Manchester and Newcastle.

The direct results of 36 years' constant endeavour, continual research in the laboratory, tests in the works, and on the road, are all embodied in the present C.A.V. Battery, which is universally recognised as the ideal standard of battery construction for any make of car, whether British, French, Italian or American.

We honestly believe that in the latest C.A.V. production, the multi-plate battery with THREADED RUBBER INSULATION, in our ALL-MOULDED CONTAINER we have achieved something definitely better than has ever been offered to the motoring public.

Write for folder 485 L and let us quote for your next replacement.

EXAMPLE SIZE:
Type 6TW9... £3-5-0 suitable for Austin 7.
Overall dimensions—Length 7 1/2", width 6 1/2", height 9 1/2".
If required, cover and fixing rods can be supplied at extra cost.

Telegrams:
"Vanteria, Act, London."

"THE MOTOR ELECTRICAL MANUAL."

All about the electrical equipment of the car. 3rd Edition.

2/6 net
from Bookstalls and Booksellers.
2/9 post free from Publishers.



Gives instruction in electrical theory and deals with ignition (including magnetos, coils and sparking plugs), dynamos, batteries, lamps, switchboards, electric horns, signalling devices, upkeep of equipment, etc.

TEMPLE PRESS LTD.,
5-15, Rosebery Avenue, E.C.1

Wholesale Agents: E. J. Larby, Ltd., 30, Paternoster Row, E.C.4.



For Safety, Service, and Satisfaction.

STEPNEY TYRES

OBTAINABLE AT ALL GARAGES.

Makers: STEPNEY TYRES LTD., LLANELLY, WALES, & WALTHAMSTOW, LONDON, E.17.

TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.

LOOK AT IT THIS WAY!

Jones and Brown are Neighbours.

Jones runs a "——" and Brown, wise man, runs a Jowett.

Jones calls on Brown in a state of great indignation and the following dialogue takes place.

Jones :— "I say, Brown, I've broken a stub axle, and what do you think they charge for a new one?"

Brown :— "Haven't the faintest, old man."

Jones :— "——"

Brown :— "Seems a bit stiff."

Jones :— "That's what I thought. What do Jowetts charge?"

Brown :— "No idea. I've run my Jowett over 10,000 miles and never wanted a spare. Half a mo', though, I've their spares list somewhere. Here it is. Check it up."

Jones :— "Well I never! Half the price, and—wait a bit—all Jowett spares seem to be much less than mine."

Brown :— "Well, when we checked running costs last week, you said my Jowett cost just half the amount to run as your '——'. Why not get a Jowett?"

Jones :— "I will. What are the prices?"

Here they are.

Short two, £135. Long two, £150. Chummy, £145.

Full four, £150. Saloon, £185.

Dunlop Balloons and Stewart Speedometers standard.

Our private deferred payment scheme is the fairest yet devised.

May we send our unique catalogue?

JOWETT CARS LTD., IDLE, BRADFORD

FACILITATE BUSINESS, and ensure prompt attention to your enquiries, by mentioning "The Light Car and Cyclecar" when writing to advertisers. They will appreciate it.

"As Fresh and
Sweet as the
Country Air"

After a trial of other tobaccos,
smokers who come to "Country
Life" are impressed by its
remarkable freshness.

COUNTRY LIFE $1/0\frac{1}{2}$ per
(Mild and Medium) oz.
COUNTRY LIFE 11^D per
(White Label) oz.

Player's
**"Country
Life"**
TOBACCO

C.L. 174

To cure
worn or oval cylinders
have them
REGROUND
by **LAYSTALL**
and fit
DE LUXE
LIGHTWEIGHT
PISTONS
ALUMINIUM for
Sports or Racing cars.
CAST IRON for
General use.
BOTH THE LIGHTEST AND
STRONGEST OF ALL PISTONS.

LAYSTALL
EVER ST., SOUTHWARK, LONDON, S.E.1
Telephone: 110P GMD (9 lines)
Northern Branch Works: 55, FONTENOY ST., LIVERPOOL

WRITE FOR THE
LAYSTALL
BOOKLET
POST FREE

5 BENEFITS YOU GET FROM -clix-

The Scientific Sparking Plug Attachment.

(World-wide Patents and Provisional Patents.)

- 1 You don't have to screw or unscrew terminals to clean or test your plugs. "Auto-Clix" connects or disconnects simply by a push or pull.
- 2 You get a perfectly rigid, reliable electrical contact; and "Auto-Clix" greatly enhances the appearance of the engine.
- 3 You can test plugs instantly with "Auto-Clix" without stopping the engine.
- 4 You save time, keep your hands clean, and there is nothing to get lost.
- 5 You foil car thieves. By withdrawing the scientific "Auto-Clix" plug the engine is rendered unstartable. Thieves do not wait to locate engine trouble.

1/- each. 4/- per set
of 4.

Complete with

1. Adapter. (Extra Adapters for spare plugs, 4d.)
2. Resilient Non-Vibratory Plug and Insulator, Nickel-Plated.

Of all Dealers or direct from

LECTRO LINX LIMITED,
MOTOR DEPT.,

Manufacturers of Clix Radio Fittings.

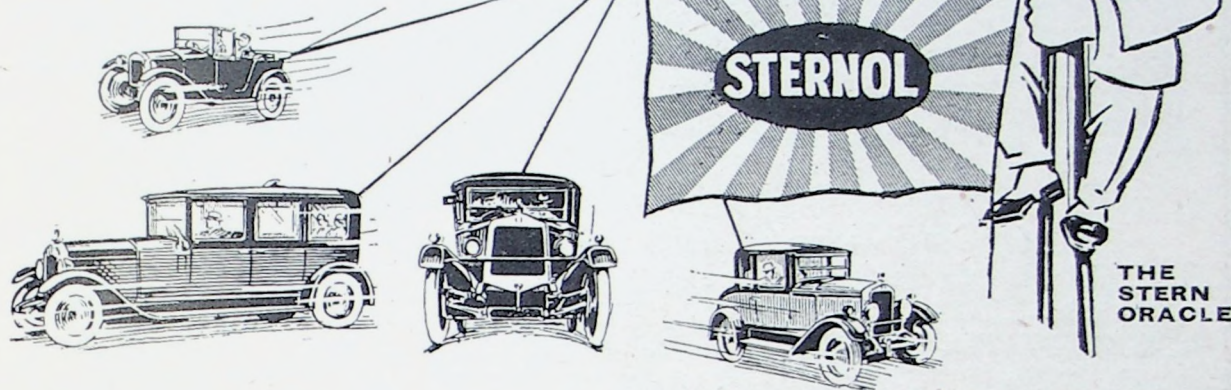
254, Vauxhall Bridge Road, S.W.1.

Telegrams: "Trolinx, Churton."
Telephone: Victoria 8120.

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.

See how they run!

—on the oil that the
Makers recommend



It's Your Fault if You Don't Follow the Maker's Advice!

We know that every Austin Car is capable of giving the greatest possible measure of satisfaction to its owner. Each model is a glittering masterpiece of engineering.

Get the Greatest Pleasure out of Your AUSTIN

Whatever model it be, you can obtain the finest performance from it; secure the utmost delight and, incidentally, PRESERVE IT in the most practical manner possible if you use the oil which the Austin Co. RECOMMEND you to use and which they themselves have used EXCLUSIVELY for the last 9 years,
VIZ.:

Sternol WW
HEAVY
MOTOR OIL
Makes Engines Purr Like Pussies

Follow the advice of other Austin owners and particularly of the famous makers of your excellent car.

The Austin Co. not merely approve, but RECOMMEND Sternol WW. They themselves use it exclusively.

STERNS, LTD., 46, ROYAL LONDON HOUSE, FINSBURY SQUARE, E.C.2

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.



From hundreds of testimonials we have received from Austin Owners, we quote the following which is just to hand from the engineer of a well-known Electrical Tramway Undertaking:—

"I have been running on WW for the past 18 months with great satisfaction.
"There is less carbonisation in 12 months than with another very well-known oil in 4 months, and therefore have much pleasure in recommending it to my friends."

Ready-to-Erect Garages



GLIDING OUT-OF-WAY DOORS
FREE INSURANCE AGAINST FIRE
FREE PLANS FOR COUNCIL APPROVAL
DEFERRED TERMS CAN BE ARRANGED

You merely have to erect it.

Any handyman can erect a Thornber Garage in one afternoon. All the work is done for you—it is just a matter of bolting complete sections together. No loose timber is sent, every section is fully framed and complete, and the holes are bored in exact register to receive the bolts. All fittings are supplied and to ensure a no-trouble job every Garage is erected at Thornbers Works before it is despatched in sections.

BUILT TO LAST AND TO PLEASE.

Workmanship throughout is solid and clean. No better value in Portable Garages is offered anywhere. Thornbers are experts at their job, and modern machinery which cuts out expensive hand labour is solely responsible for the low prices. When you buy a Thornber Garage, your outlay is completed—you have no additional expenses to meet for fittings, etc.

Gliding Out-of-Way Doors that move at a child's push, occupy no room and obviate hinged door weakness. Free Fire Insurance Policy. Free Plans for submitting to Council. Sizes for all popular makes of Cars. Deferred Terms arranged. Quick Deliveries. Garages can be inspected at works. SEND FOR FREE FOLDER AND STATE REQUIREMENTS. Thornbers make all kinds of Portable Buildings for all purposes—Army Huts, Shops, Pavilions, Institutes, Bungalows, Poultry Houses, etc. State requirements—we will send free folders.

THORNBERS
for EVERYTHING in WOOD

9, MYTHOLMROYD, Yorkshire.

London Office: 47, Victoria St., S.W.1
(where Model Garages may be inspected).



New Army Huts FROM

"WELLINGTON" LIQUID METAL POLISH

A
POLISH
THAT
with a
minimum
of labour,
GIVES A
REAL
BURNISH
THAT
LASTS.

CLEANS
and
POLISHES
ALL
METALS
(including
Silver)
and
GLASS
(Windows,
Mirrors),
Motor-Screens
(Glass or
Celluloid).

TRY IT
and
PROVE IT.

In TINS, 3d., 4½d., 7½d. & 1/3; also in ½, 1 & 1 Gallon Cans.

JOHN OAKEY & SONS, LTD
WELLINGTON MILLS, LONDON, S.E.1

SPECIAL SPORTS AUSTIN 7, £175

HERE is a real Thoroughbred (coachbuilt—not mass produced) at a price only slightly in excess of the mass production article. This snappy 2-seater is built upon the special Austin 7 Sports Chassis and it is an exclusive Taylor design. The body allows ample leg room which can be varied to suit your individual requirements. The luggage accommodation is excellent, ample space being available for three suit cases. An extra low centre of gravity makes speed both safe and enjoyable, and the V shaped windscreen adds to the general attractiveness of the car as a whole. We can give early delivery of this fine little sports car which can be finished to your own choice of colours.

ALL MAKES SUPPLIED FOR CASH, EXCHANGE, OR UPON OUR LIBERAL "NO DEPOSIT" E.P. TERMS

The following cars give both excellent and economical service:

AUSTINS £145 to £650 CLYNOS £160 to £250

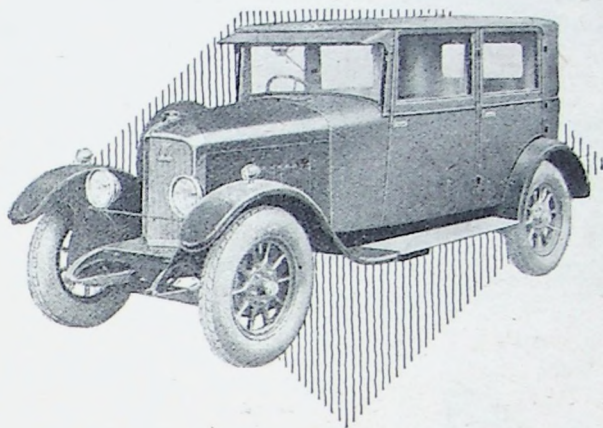
SINGER £148-10 to £350 MORGAN £89 to £140

Motor Cycles or used Cars taken in part payment for New Cars.

H. TAYLOR & Co., Ltd.,

49, 50, 52 & 53, SUSSEX PLACE, SOUTH KENSINGTON, S.W.7.
Telephone: Kensington 8688/9 and 6810. Telegrams: "Hynmetro, Southkens"

IMPERIA



A WELL-TRIED 11/25 h.p.
CAR DE LUXE

Specialities—

SPEED.	APPEARANCE.	COMFORT.
SERVO BRAKES.	□ □	SUSPENSION.
STRENGTH.	□	ACCESSIBILITY.
ROAD HOLDING CAPACITY.		

EVERY GOOD POINT OF A LARGE CAR
INCORPORATED IN A SMALL CAR.

**Demonstrations arranged to suit
customers' convenience.**

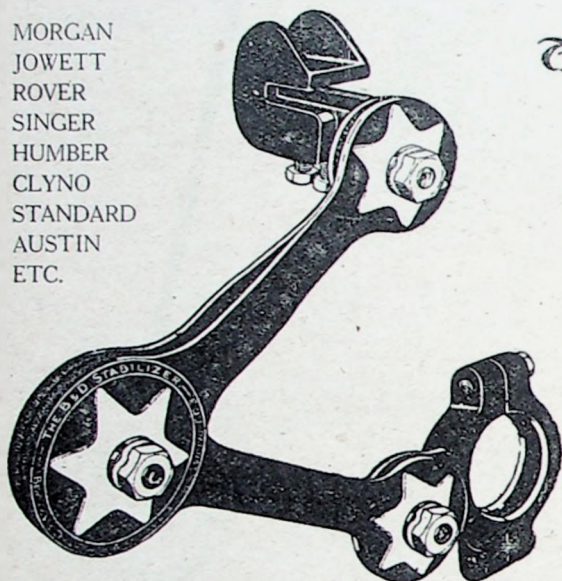
SPECIFICATION:—4-cylinder slide valve engine.
4-speed gearbox with simple gear change.
Consumption:—Petrol, over 35 m.p.g.
Oil, over 1600 m.p.g.

Write for a demonstration—

**IMPERIA MOTORS, LTD.,
Maidenhead.**

SMOOTH TRAVEL OVER BUMPS AND POTHOLE

MORGAN
JOWETT
ROVER
SINGER
HUMBER
CLYNO
STANDARD
AUSTIN
ETC.



Small Car, 52/6; Light, 63/-; Medium, 72/- Per Axle, inclusive of all brackets ready to fit. Carriage extra.

IS ENSURED BY

The B&D STABILIZER

TO get real enjoyment from driving you must have good control of your car and feel that it is steady and "holds the road." There is no need to be bounced about on bad roads. You can drive confidently over them if your car's springs are controlled by B & D Stabilizers. There are good reasons why you should choose them as the best value in shock absorbers.

EASILY FITTED. You can fit them yourself as easily as you change a wheel. The brackets clamp on.

LOW PRICED yet first-class design, workmanship and finish.

EFFICIENT. Have stood the test of time. Let us send you the testimony of users.

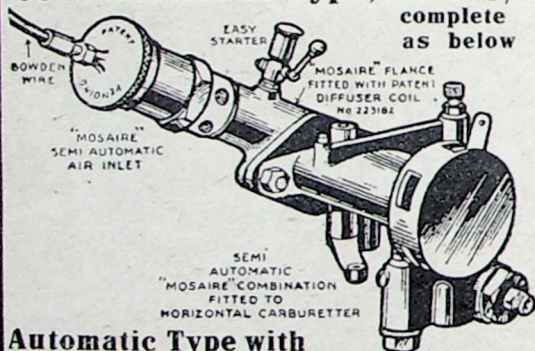
GUARANTEED. You can purchase under our guarantee that you only keep them if you are satisfied.

Write to-day and be ready to face good and bad roads alike.

BENTLEY & DRAPER Ltd. 4, Fenchurch Ave., London, E.C.3

"Grams: "Bendrapic, Fen, London." "Phone: Avenue 3029.

Semi-Automatic Type, Price 35/- complete as below



Automatic Type with Rubber Diaphragms, Price 40/- complete

Fit The "Master" Extra Air Valve on 30 days' Free Trial, and obtain

- 1.—More miles per gallon.
- 2.—Increased power, due to the admission of a larger volume of more intimately mixed gaseous fuel into the cylinders. A super charger in simple form.
- 3.—A sweeter running engine.
- 4.—Freedom from oily plugs and less oil consumption.
- 5.—More efficient braking power with less wear on linings.

Send for our 54-page Booklet giving the Opinions of Owner-Drivers under all sorts of conditions.

ALDAM & CO.

(M Dept.), MISTERTON, DONCASTER.

Distributors for Birmingham and District:
Ashton Engineering Co., Ltd., Floodgate St., Birmingham.



Hand-operated model with Patent Diffuser Coil as above,
Price 30/- Complete.

HOMAC'S, LONDON'S LEADING MORGAN SERVICE HOUSE

OFFICIALLY APPOINTED BY
THE MORGAN MOTOR CO.

Invite you to try a Morgan from their huge range before you come to any final light car decision.

Catalogue on request. DEFERRED TERMS.

HOMAC'S
MOTOR AGENTS

DE LUXE MODEL.
Air-cooled £110 :

TRADE SUPPLIED
ALL SPARES IN STOCK.

243/7, LOWER CLAPTON ROAD.

Works: 46, London Road, Clapton, E.5.

'Phone: Clisold 2408.

AERO MODEL.

Side Valve £127. O.H.V., 10/40 h.p., £140

EXPERT REPAIRS
BY SKILLED
MORGAN MECHANICS.

MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists the cause of economical motoring.



Make hay while the sun shines

ENGLISH summers are all too short... so take full advantage of them. It is just about now that we can look forward to some decent weather and it is just about now that you should be buying your car.

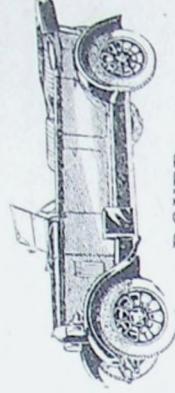
As a general rule we manage to forecast demand pretty accurately and we can nearly always give quick delivery. But why take the chance at all. Why not get the choosing done and be SURE of delivery. If you place your order now we will give you an unconditional guarantee that you will have your car at any time you want it... now or in three weeks or in three months.

And having got your car you are ready to take advantage of every minute of sunshine, every spare hour of evening daylight, every single week-end that is at all possible.

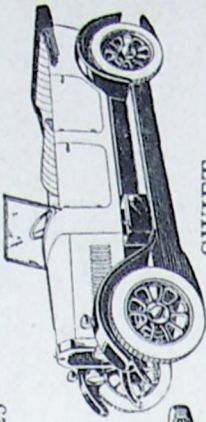
In our showrooms you will see all the latest models and you can test and try any one of them that interests you as much as you like. If you want assistance in your final choice we will be happy to advise you and to give you a solid guarantee of satisfaction to back up our advice.

Come and see us. There is no obligation incurred and there will be no bothering you to buy. Just see our stock and let us tell you about our service... deferred payments, too, if that interests you. Come to-day.

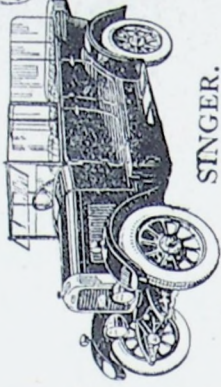
FREE! Write to-day for a copy of our novel catalogue "The Diary of a Car Tester."



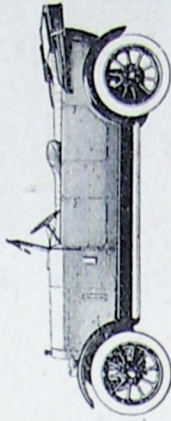
ROVER.
4-Seater Tourer .. £225
£45 down.
12 payments of £15 15 0
18 " " 10 15 0
24 " " 8 5 0



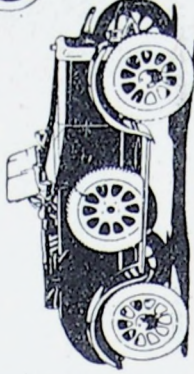
SWIFT.
4-Seater Touring .. £210
£42 down.
12 payments of £14 14 0
18 " " 10 0 8
24 " " 7 14 0



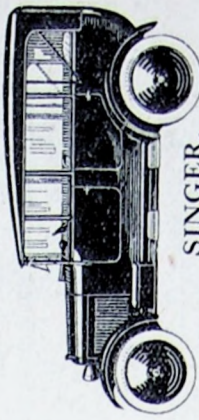
SINGER.
4-Seater Senior .. £220
£44 down
12 payments of £15 8 0
18 " " 10 10 2
24 " " 8 1 4



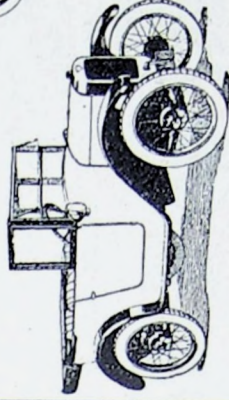
WOLSELEY.
4-Seater Touring .. £215
£43 down.
12 payments of £15 1 0
18 " " 10 5 5
24 " " 7 17 8



JOWETT.
2-Seater .. £150
£30 down.
12 payments of £10 10 0
18 " " 7 3 4
24 " " 5 10 0



SINGER.
Junior 8 h.p. .. £148 10 0
£29 down.
12 payments of £10 10 0
18 " " 7 3 4
24 " " 5 10 0



AUSTIN "7."
7 h.p. Chummy .. £145
£29 down.
12 payments of £10 3 0
18 " " 6 18 6
24 " " 5 6 4

USED CARS.

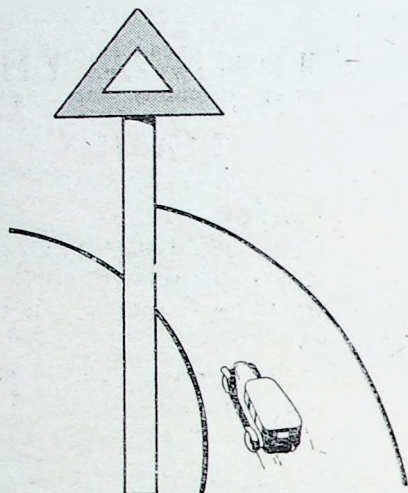
Should you be wanting a second-hand car, we have a number of overhauled demonstration and used models that can be bought for cash or easy payments. Every one is a genuine bargain and is backed by our jealously-guarded reputation.

The Service Company Ltd. (LONDON)

273-274, High Holborn, London, W.C.1.

Telephone: Holborn 0666 (3 lines). Telegrams: "Admittedly, London."

TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.



Have you an IDEA for reducing accidents?

Special awards offered by "The Motor"

Most road accidents are preventable.

As one means of encouraging practical suggestions for minimising road mishaps, "The Motor" is inviting its readers to submit ideas likely to diminish the toll of life on the roads.

It is thought that some idea may be evolved that will be as simple and as effective as the white line, and it is considered undesirable

that any system of warning should be complicated and expensive.

£15 is offered for what is adjudged the best idea, £10 for the next best, and ten further awards of £5 each.

Full particulars are given and conditions set forth in "The Motor" this week.

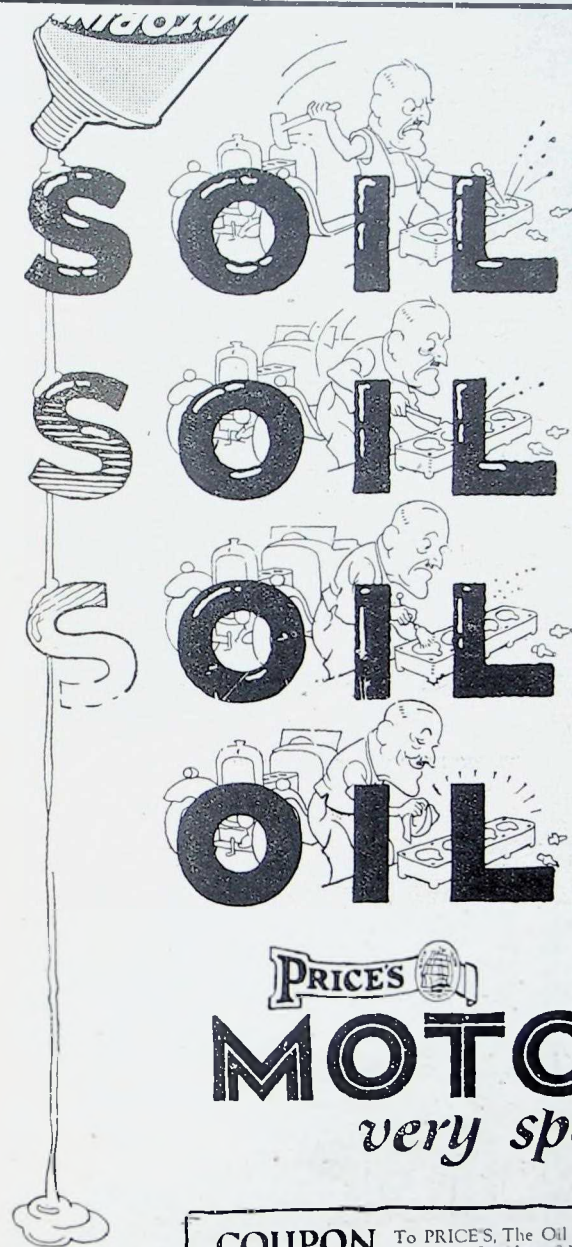
Buy a copy to-day—and send in *your* suggestion for making the roads safer!

Full details in this week's issue of

Tues., August 23

PRICE 4d.

Offices: 5-15,
Rosebery Avenue,
London, E.C.1.



TAKING THE "S" OUT OF "SOIL"

Carbon. Soot. Coke. You'll get it, all right. Road dust, for instance, *will* get in. The finest oil leaves a residue. BUT—use the right grade of Motorine and you get less of it. Much less. There's the simple fact.

Send coupon below for the book, "The Car" (or if you're a motor-cyclist, "The Motor Cycle"). Both are free and post free.

You are also offered free the advice of Price's Technical Bureau. Send your oil problems to Price's.

PRICE'S MOTORINE *very special oil*

COUPON To PRICE'S, The Oil People (Dept. E.E.20)
London, S.W.11

Please send the books I've ticked. "The Car" (☐), "The Motor Cycle" (☐), Both (☐). I'm interested.

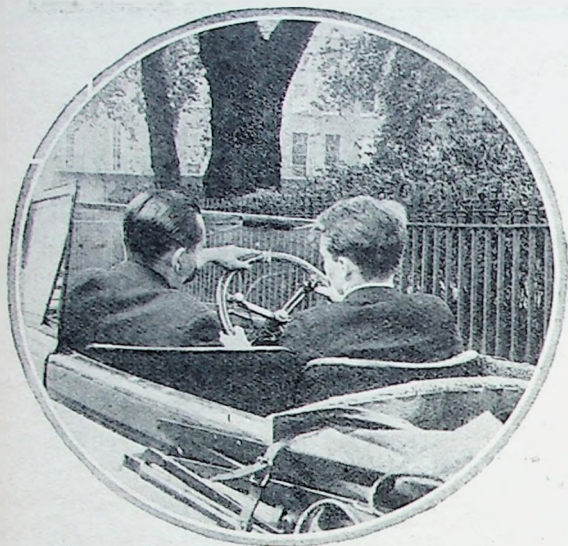
Name

Address

PRICE'S PATENT CANDLE COMPANY LIMITED, LONDON, S.W.11.



WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.



"HOW TO DRIVE A CAR."

A Motoring Tutor for 2/6!

THERE'S no better driving tutor than the well-known T.P. Manual, "How to Drive a Car," by the Editor of "The Motor."

This handbook gives in simple language a clear explanation of the principles of correct driving, and tells how to deal with the numerous road problems that need accurate judgment and instant decision.

All the finer points of car control are made clear by numerous illustrations.

PRICE 2/6 NET

Of bookstalls and booksellers, or
2/9 post free direct from

TEMPLE PRESS LTD.,
5-15, Rosebery Avenue,
London, E.C.1.

Wholesale: E. J. Larby, Ltd., 30,
Paternoster Row, E.C.4.



The Test of Satisfaction!

We have kept a careful record of Carburetters sent out in response to our 30 Days Approval Scheme with the following results. Since this Scheme was started:

**91% of Carburetters
sent out were retained
by customers—and—**

in the majority of cases—we received a highly eulogistic testimonial as to the marvellous improvement in the running of the car.

We know that YOU, too, will be pleased beyond all description with the

**IMPROVED MILEAGE,
BETTER PERFORMANCE &
EASIER STARTING
of your car.**

Do as the others are doing—fit a B & B on approval and NOTE THE DIFFERENCE!

BROWN & BARLOW LTD.,
Carburetor Works, Witton, Birmingham.
London Service Agents: Dartford Eng. & Carriage
Co., Ltd., 23/24, Hythe Road, Willesden, N.W.10.

OUR USED CARS ARE

AUSTIN, 1927, 7 h.p. Chummy Model. Immediate delivery	£145
.. Several 7 h.p. Chummy Models, Coupes and Sports, from	£85
A.C., 1925, 2-seater, F.W.B.	£185
CITROEN, Several 7 h.p. 2 and 3-seaters, from	£50
F.I.A.T., 1924, 10/15 h.p., Coupe	£125
JOWETT, 1925, 2-seater, with starter	£85
RENAULT, 1925, 9 h.p. 4-seater, excellent order	£95
ROVER, 1925, 9/20 h.p. 4-seaters, from	£95
.. 1924, 8 h.p. 4-seater, fine order	£45
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WOLSELEY, Several 10 h.p. 2-seaters and Coupes, from	£50

100 OTHER BARGAINS from £50 to £250.

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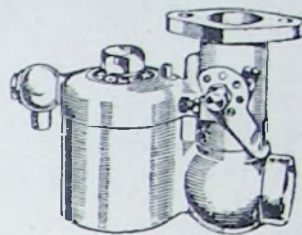
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READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

The Best Testimony to **SOLEX** THE NO-TROUBLE CARBURETTOR



is the opinion of its users

Every week more and more motorists are replacing other makes of carburettors with the "Solex." Every week the popularity of the "Solex" is increasing by leaps and bounds.

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with a **SOLEX**
on 30 days
FREE TRIAL

FREE TRIAL OFFER.

Ask at your local garage or write Dept. "L.C." to-day sending particulars of your engine no matter what type it is, and we will send you details of our 30 days' FREE Trial Scheme. There is no obligation to purchase and no charge for renovation.

SOLEX LTD.

Director: GORDON RICHARDS

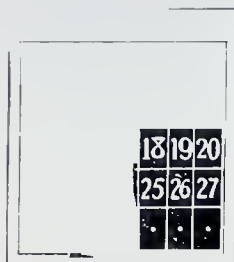
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AN OF THE ROAD.



After only three days' free trial, an owner-driver is so pleased with his set of STOTT ANTIBOUNCE CLIPS that he has sent the following testimonial to the makers:

"I have much pleasure in enclosing a cheque
"in payment of Stott Antibounce Clips which I
"fitted to my Austin 12, as I am so satisfied
"that there is no need to wait for a month's
"free trial."

Thus are my statements borne out by actual experience.

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STOTT Antibounce

DO NOT HESITATE to send your enquiries to "The Light Car and Cyclecar."



STANDARDISE on Shell Oil and Petrol.
Both are built to give the minimum of carbon,
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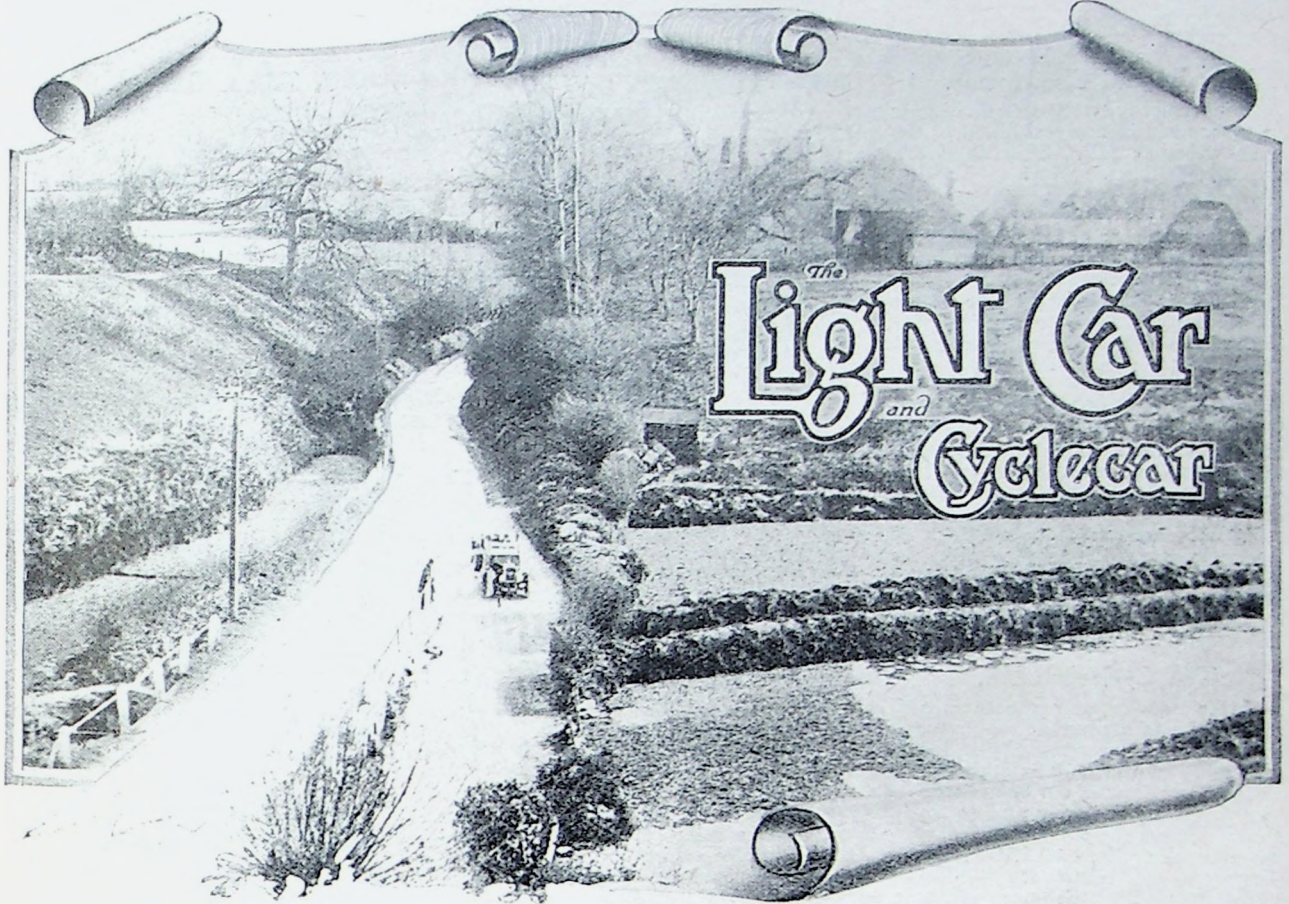
PRACTICAL PROOF: Imperial Airways, in a recent 20,000 mile test on a Rolls-Royce engine, found "Triple" Shell Oil (the correct grade for such cars as Austin, Armstrong-Siddeley, Bentley, Rolls-Royce, Humber, Vauxhall, etc.) gave "unusual freedom from carbon" and "notable reduction in wear."

Shell Petrol, too, is blended to give clean and complete combustion.

Banish Carbon—and its bad effects—by standardising on Shell Oil and Shell Petrol.

SHELL
Motor Oil  **and Petrol**
The Anti-Carbon Pair

The small advertisement columns of "The Light Car and Cyclecar" form a unique mart for the disposal of all goods of interest to small car users.



A LITTLE-KNOWN INDUSTRY.

Large quantities of watercress are consumed annually in this country, but there are few people who know where or how it is grown. This photograph shows part of the large beds at Letcombe Regis, on the Berkshire Downs. The cress is grown in shallow ponds and streams.

NOTES, NEWS & GOSSIP *of the* WEEK

New Standard Light Car.

A new model for the forthcoming season is announced by the Standard Motor Co., Ltd., Coventry. The new production will be of about 9 h.p. rating and designed particularly with a view to economical upkeep. We are informed that the price will be low and deliveries are expected to begin at the end of October. The car will be exhibited at Olympia.

This Week.

When the possibility of skidding has been removed British roads will be second to none. The engineering science at present displayed in their construction—for they may be likened to the romance of many railway ventures—places them in a class by themselves. It is the elusive ideal surface which is still the unknown quantity "x," and in an interesting article in this issue a road engineer explains the steps which have been taken by inventors and others in an endeavour to overcome the difficulty. Our test-run report deals with the Riley Nine—one of the most interesting small cars of 1927.

No. 768. VOL. XXX.

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LIGHTING-UP TIMES (Rear Lamps)			
for Saturday, August 27th.			
London ..	8.27	Edinburgh ..	8.51
Newcastle ..	8.41	Liverpool ..	8.40
Birmingham ..	8.36	Bristol ..	8.37
Moon—New, August 27th.			

Bugatti Grand Prix.

There is a rumour afoot that a Grand Prix race confined exclusively to Bugatti cars will be held next year on the Le Mans course. It is said that large money prizes will be offered by the organizers and the event should prove of unusual interest.

Alexandra Park T.T.

Following the exclusive news given in last week's issue under the heading "On the Tapis," the North London Motor Club announces that it "expects to organize the first road race to be held in North London at Alexandra Park early next spring."

Portuguese Road Trial.

Arrangements are now complete for the "Round-Portugal" road trial to be held during the first two weeks of next month. The start will be from Coimbra, and the total distance to be covered, 1,500 miles; the route touches Lisbon, Faro, Covilha and Oporto.

Next Week.

The Lea-Francis is deservedly one of the most popular light cars of to-day, and in next week's issue we shall include a three-page article entitled "Keeping the Lea-Francis in Tune." Illustrated with photographs and sketches and supplementing the information given in the instruction book, this article should be read and carefully filed for future reference by all Lea-Francis owners.

New Bugatti Showrooms.

A comprehensive range of the latest Bugatti models is now exhibited at the new showrooms at 12, Albemarle Street, Piccadilly, London.

Iron Roads.

Roads surfaced with heavy iron plates riveted to a concrete base are being tested by French road authorities. One disadvantage, namely, that the plates grow uncomfortably hot under the influence of the sun, would not be of great moment in this country!

An Inter-Services Competition.

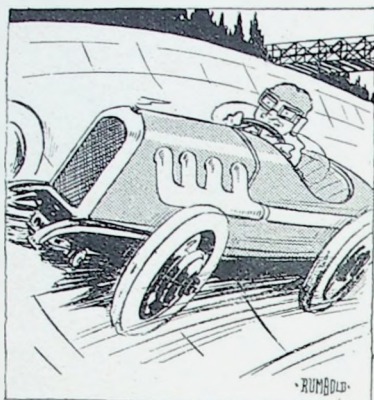
The suggestion is made by *Motor Cycling* that there should be an annual Inter-Services motorcycling competition which, from the point of sport, should rank with the Inter-Services Rugby football matches and from the point of view of military importance with the I.A.F. Pageant. *Motor Cycling* offers a challenge cup for such an event and asks for opinions from those who would be directly concerned.

The Cyclecar Club.

A large number of our readers will be interested to know that the proposed Cyclecar Club is now actually in being. Membership of the club is open to the owners of any type of car or cyclecar irrespective of horse-power and so forth, but for racing and competition purposes a capacity limit of 1,100 c.c. will be imposed. Our contributor "Shacklespin" deals with the new club in "Cyclecar Comments" this week.

Reducing Accidents.

With a view to inducing motorists to contribute ideas for reducing accidents *The Motor* this week offers £15 for what is adjudged to be the best idea, £10 for the next best and ten further awards of £5 each. It is thought that some idea may be evolved that will be as simple and as effective as the white line, and it is considered undesirable that any system of warning should be complicated and expensive, or that it should involve the use of intricate mechanical details. The simple idea is the most likely to prove acceptable.



WEEKLY WISDOM.

Thy car it may be faster than thy neighbour's, but seek not to prove it in the market place. For ten pieces of silver thou canst speed in safety upon the track that is Brooklands.

Rhone Valley Landslide.

A track is being made across the landslide in the Rhone valley, and after working day and night army recruits have cleared a path for light cars.

One-make Rallies.

One-make rallies at Brooklands and other suitable venues are becoming increasingly popular. When a meeting of this sort is held at Brooklands it has the advantage that a really amusing programme can be drawn up, and the recent Lagonda rally at the track was no exception to the rule.

Essex Meeting Postponed.

Another Brooklands meeting has had to be postponed owing to the vagaries of the weather, namely, that fixed for Saturday last and organized by the Essex Motor Club. Arrangements have been made for the event to be run off on September 10th, and the entry lists have been re-opened until September 3rd for both cars and motorcycles. Inquiries should be sent to Mr. E. J. Bass, 40, Chancery Lane, London, W.C.2.

A School Garage.

For the convenience of teachers at a school in Worcestershire, a playing pavilion has been turned into a garage.

Our Front Cover Picture.

The car which figures in the photograph on the front cover this week is a Singer Junior with a modified head and side-lamp equipment.

Ingatstone Common.

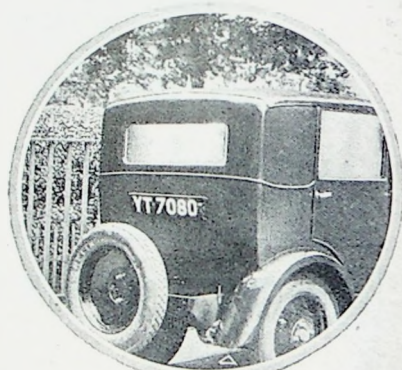
Camping on the common at Mill Green, Ingatstone, Essex, is now strictly forbidden; the lords of the manor have the power to warn off trespassers.

British Grand Prix Entries.

The following entries have been received for the British Grand Prix, which takes place on October 1st:—G. E. T. Eyston (Bugatti), Capt. M. Campbell (Bugatti), W. B. Scott (Thomas Special), H. W. Purdy (Thomas Special), T. G. John (Alvis), G. Souders (Ducsenburg) and three Delages.

Mathis Refinements.

Still further improvements have been effected in the latest Mathis saloon model, which now has a rounded roof



The latest Mathis saloon has better lines and a more attractive appearance (see paragraph).

and back, front seats 4 ins. wider, a larger rear window, centre roof light, screen wiper fitted as standard, luggage carrier or trunk holder at the rear and new-type Michelin non-skid tyres. The price remains the same, namely, £265.

The Sporting Car Race.

Full details have now been published by the Junior Car Club concerning the performance of the cars in the Sporting Car race which was held on August 13th. The winner, Major C. M. Harvey (Alvis), covered, as we have already stated, 254.34 miles in just over the four hours, his average speed being 63.2 m.p.h. The following distances, given in miles, covered by the remaining competitors and printed in their order of finishing are interesting: W. H. Green (Alvis), 248.06; R. M. V. Sutton (Lea-Francis), 248.06; G. Newman (Salmson), 244.92; J. C. Douglas (Salmson), 244.92; A. E. Clutterbuck (Alvis), 226.08; S. H. Newsome (Lea-Francis), 222.94; C. J. Randall (Aston-Martin), 219.80; S. G. Nash (A.C.), 204.10; K. S. Pencock (Lea-Francis), 194.68; I. MacDonalld (Alvis), 182.12.

Buses are to be substituted for the cable trams formerly run on Matlock Bank. The climb is three-quarters of a mile long, with a maximum gradient of 1 in 3½.

Petrol Pumps for Motor Boats.

Petrol pumps are now being installed for the convenience of motor boat owners at many large depots.

A Police Innovation.

Point-duty officers in Paris are now being provided with illuminated batons for traffic control. The batons, which are white in colour, have small electric bulbs in transparent protecting covers at the ends. Each officer carries a battery at his belt connected by a length of flex to the signalling device.



The late Mr. Tom Shaw, former president of the Scottish Motor Trade Association and a pioneer motorist in Scotland. His death occurred on August 18th.

Glasgow-Inverness Road.

The reconstruction scheme for the Glasgow-Inverness road is likely to be abandoned owing to lack of funds. Sir Henry Maybury, the Director-General of Roads, has informed the Inverness Council that the 100 per cent. State grant is to be reduced to 75 per cent.

Peacehaven Main Road.

The Peacehaven main road was described recently in a coroner's court as the most dangerous road in the South of England.

Alvis at Boulogne.

An Alvis car has been entered by W. Urquhart Dykes, the well-known Alvis owner, for the Boulogne meeting on September 11th. There are now six British cars in the race for *The Motor Trophy* and the Georges Boillot Cup.

A Jumping Peugeot.

The 7 h.p. Peugeot fitted with a device enabling it to jump several feet in the air, and in which startling demonstrations have recently been given by M. Mercier, was raced on the La Capelle steeplechase course last week. A racehorse competed with the Peugeot "over the hurdles," and a dead-heat resulted.

Safety First Number.

Readers are reminded that our Special Safety First Number will be published on September 9th, that is, in a fortnight's time and, as there is sure to be a big demand, a definite order with a newsagent should be placed in advance. The contents of the issue will be unique and will deal with every aspect of safer motoring, particular attention being devoted to devices calculated to assist towards that end.

An Austin Rejoinder.

As an answer to the reproach that British car manufacturers do not supply the Dominions with cars suitable for colonial road conditions and requirements, the Austin Motor Co., Ltd., instances the case of a test conducted by an Austin distributor in New South Wales. This trip took the form of an endurance test 2,500 miles in length over most difficult country; despite this, no fewer than 330 miles were covered in one of the several days. So confident was the driver that no spares were carried.

Wigan's One-way Streets.

A system of one-way traffic has been instituted at Wigan, all traffic using King Street being required to proceed in a northerly direction from Darlington Street towards Wallgate. No cars may enter King Street from the Wallgate end.

Preserving Stonehenge.

A scheme has been started for the acquisition of part of Salisbury Plain around Stonehenge, a sum of £35,000 being required. The purchase of the land is considered necessary to prevent refreshment halts and other encouragements to trippers being erected near Stonehenge. A number of aeroplane hangars which now spoil the landscape are to be removed.

Distracting the Driver's Attention.

Motorists need not fear that bus drivers in Woking are not giving their whole attention to the road. The Woking Urban District Council has refused to issue licences to buses in which passengers are allowed to sit at the side of the driver.

Lay-paper Comments.

"I do not believe there is a more dangerous road in England," says the motoring correspondent of a London

... and Still Going Strong! ...

From the "smalls" of a London evening newspaper: "1622 G.N. in good condition."

In scanning thro' the host of "ads."

Some pick "the goods," the others "bads"!

And often irate buyers fume, At "bargains" sadly out of tune, And sometimes dates are far from right,

To angle for a victim's "bite."

But hark, ye sceptics, far and wide,

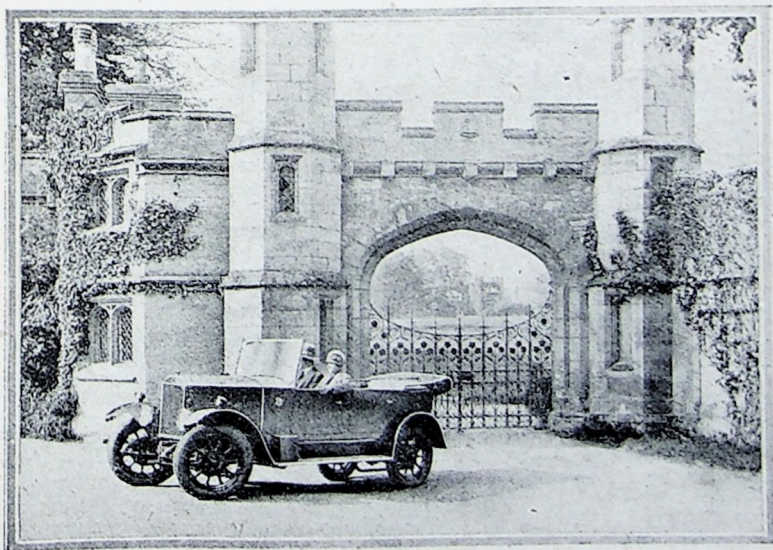
Does not this extract pierce your hide?

All ye who scorn the cyclecar, Come from all countries near and far,

Not '22, as some would say, Or veiled in subtle language, nay,

But penned in words to int'rest men,

A sixteen-twenty-two G.N. G.P.



IN THE
SHAKESPEARE COUNTRY.

A 10 h.p. Swift leaving Thickthorn, the residence of Mrs. Wheatley, widow of the late Mr. J. H. Wheatley, J.P. Thickthorn is on the Leamington side of Kenilworth.

paper, in the course of some comments on the new London-Southend arterial road. During a recent Sunday run, however, a member of our staff found that the conditions were not nearly so bad as they are painted.

Cyclecars in the "Six Days'."

Two Morgans competed in this year's International Six Days' Trial, just concluded in Lakeland. This event, which was won by the English team, was, of course, primarily a motorcycleing affair, and a complete and fully illustrated report of it appears in our associated journal *Motor Cycling*. Both of the Morgans succeeded in completing the course, but neither of their drivers, R. T. Horton and W. A. Carr, gained an award, having lost marks both on time and on hill-climbing. In fact, on this occasion the cyclecars hardly compared so favourably with the sidecar-combinations as has usually been the case.

Forthcoming Events.

INTERESTING SPEED TRIALS.

FIG CROWD EXPECTED AT LOWESTOFT
ON THURSDAY—GOPSALL PARK ANOTHER
ATTRACTION—BEGGARS' ROOST AGAIN.



LOWESTOFT SPEED TRIALS.

HOLIDAY-MAKERS on the East Coast will be given a unique opportunity on Thursday next, September 1st, of witnessing some well-organized speed trials, which will take place on the new concrete sea-wall at Lowestoft.

The course, which is ideal for speed, measures one mile and a quarter in length and has been completed only about 12 months. In width it is over 60 ft. and it has a perfect surface. The promoters, the Ipswich and District Motorcycle Club, have been fortunate in obtaining the full support of the Lowestoft Town Council; in fact, the Mayor of Lowestoft will be one of the stewards.

The meeting is timed to start at 2.45 p.m., and as the presence of a very large crowd of spectators is anticipated, the public is advised to take up its position early so as to obtain a good view of the course. It is also pointed out that it is most undesirable that spectators should endeavour to encroach in any way upon the course, not only from the point of view of their own safety, but because it is not giving competitors a fair chance.

The actual length of the run is one kilometre from a standing start, which gives about 1,000 yards in which to pull up. Competitors will be despatched in pairs and, in the event of odd numbers, the last competitor of any class will drive alone.

As an indication of the care which has been taken in organizing the event it may be mentioned that the course will be divided into two sections throughout its length, giving a width of over 30 ft. to each competitor. Any driver trespassing on the adjacent track will be excluded from an award. Electric timing will be used, the times of all competitors being taken. Starting will be by means of a flag, the signal "Go!" being represented by the third fall of the flag.

The Awards.

The awards are as follow:—Open classes, the Lowestoft Town Council Speed Challenge Trophy, a massive and valuable silver trophy for the fastest run of the day. This will be held for one year, but the successful competitor will be given a replica. In the restricted classes there is a silver cup for the fastest 350 c.c. machine, a trophy for the fastest time by a member of the Eastern Centre A.C.U., and a trophy for the fastest 350 c.c. machine in the same centre. For the fastest run of the day in the closed classes by a competitor residing within 20 miles of Ipswich and who is a member of the Ipswich Club a silver cup is offered.

The car classes will be divided up as follow:—Class U, not exceeding 1,100 c.c.; Class V, not exceeding 1,600 c.c.; Class W, not exceeding 2,000 c.c. Three-wheeled cyclecars will compete with sidecars according to cubic capacity.

The entries closed on Thursday last—too late for the list to be given in this issue of *The Light Car and Cyclecar*, but we gather that the event will be well supported by both motorcycle and car competitors.

This is the first open event to be organized at Lowestoft, but the promoting club anticipate that, following a successful meeting, it will not only become an annual summer fixture at this popular East Coast resort, but one of the premier speed trials in the sporting calendar.

LONDON—BEGGARS' ROOST—LONDON.

STARTING from the Slough Trading Estate at 9 p.m. to-morrow, Saturday, the Wood Green and District Motor Club will run off the South Midland Centre A.C.U.'s London—Beggars' Roost—London trial. The route is about 370 miles in length and includes Doverhay, Lynmouth and Beggars' Roost, a stop-and-restart test being arranged to take place on Lynmouth. There are various awards, including the Officers' Cup for the best performance, excluding members of the promoting club; the Glencairn Cup for the best performance by a member of the promoting club; a silver vase for the best performance by a woman driver, and other cups and medals.

The total entry is 125, the bulk, of course, being solo motorcycles and sidecars. There is, however, a Morgan element, the following drivers being down to start: E. L. Forge, D. Swift, H. Vidler, G. A. Pollard and G. C. Harris.

Apart from Doverhay—a very useful little climb seldom figuring in trials—the club has found a new hill about five miles out of Shaftesbury. This will be taken on the return journey.

SHACKERSTONE SPEED TRIALS.

THANKS to the courtesy of Lord Waring, the Avenue, Shackerstone, in Gopsall Park, has been placed at the disposal of the Sutton Coldfield and North Birmingham Automobile Club for the speed trials which will be held to-morrow and which will start promptly at 1 p.m.

The park is about two miles and a half from Twy-cross on the Atherstone—Ashby-de-la-Zouch road, about seven miles from Atherstone and 26 from Birmingham. Competitors and spectators must enter by the gate nearest Shackerstone village; there will be a car park for the use of the public.

The course is about 800 yards in length, with a flying start of 10 yards. As it lies on private ground, practising has been prohibited and the initial runs of the competitors should, therefore, be extremely interesting. Solo motorcycles, sidecars, three-wheelers and cars will take part and the whole event promises to be very entertaining.

The awards in the car classes include the Goodyear Bowl for the fastest run of the day, at present held by F. Taylor, which becomes the property of a member winning it twice; the Allday Cup for the fastest run in a machine under 1,600 c.c., at present held by H. C. Lones, who, by the way, is taking part to-morrow and will no doubt make a determined bid to capture this cup permanently; a special award for the fastest novice in each class in which three or more novices enter, and a special award for the fastest approved touring car in each class in which three or more touring cars enter. In addition there are presentation cups and medals.

The car and cyclecar entries are as follow:—V. H. Cooke (1,094 c.c. Sénéchal), J. D. Barnes (1,087 c.c. Salmson), N. Coates (1,084 c.c. Amilcar), R. de C. Hamilton (1,087 c.c. Salmson), E. B. Eyre (1,495 c.c. Bugatti), T. H. Shorthose (1,495 c.c. Bugatti), C. E. B. Starling (1,496 c.c. British Eagle), C. M. Nicholson (1,996 c.c. Bugatti), N. Coates (1,990 c.c. Arab), R. T. Horton (1,096 c.c. Morgan), and H. C. Lones (1,096 c.c. Morgan).

AT HOME AND ABROAD.

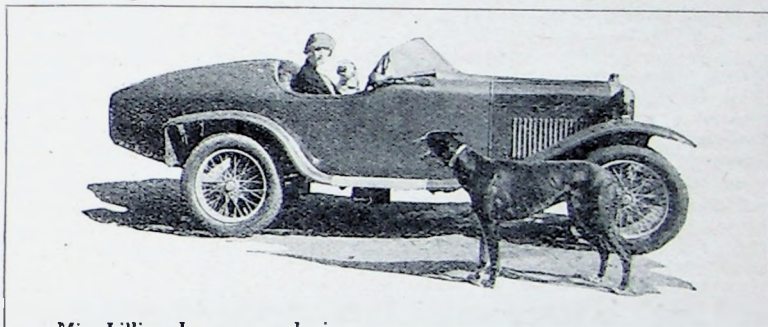
GLIMPSES OF SMALL-CAR MOTORING
IN SEVERAL PHASES—BOTH
ANCIENT AND MODERN.



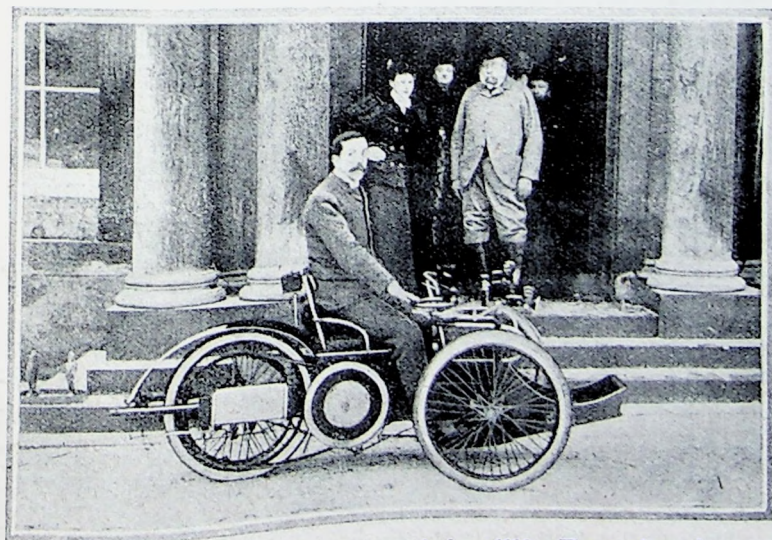
An Austin Seven on "official duty" in Egypt. An Arab sheik occupies the rear seat, a Turkish dignitary being in the front.



A favourite stopping place for tourists in Devonshire—The Carew Arms, Chelston, near Torquay. The car in the foreground is a Jowett.

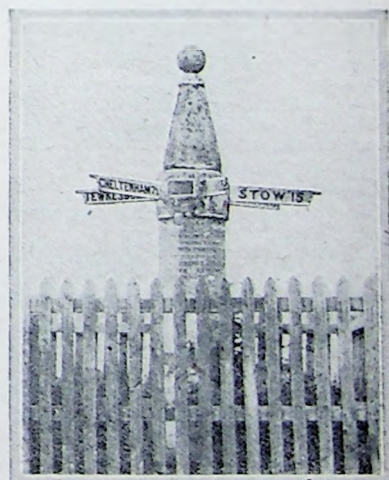


Miss Lillian Lane, now playing in "Love at Second Sight," in her latest acquisition—a Grand Prix Salmson.



THE MARCH
OF PROGRESS.

— A Bollee car of about 1896. The modern three-wheelers bear little resemblance to it.



Another link with the past—the time-scarred signpost at Teddington Hands, near Tewkesbury. The structure itself is probably contemporary with Tewkesbury Abbey.

Road Tests of 1927 Models.

A VERY HIGH-GRADE SPORTS FABRIC SALOON WITH AN EXCELLENT ALL-ROUND PERFORMANCE.

The Riley Nine, a trial-run report of which follows, is the outcome of five years' test and experiment, during which, judging by our impressions of the car, some very successful work has been done. The photograph shows the very low build of the saloon. Inside there is plenty of headroom despite this low build.

ALTHOUGH serious production of the Riley Nine is now only just commencing, the car was "in the wind" so long ago as 1922. Since then, however, repeated and prolonged tests have been carried out both at home and on the Continent, with the result that all minor weaknesses have been eliminated, little points of refinement have been added, and to-day the car stands as an excellent example of a modern and efficient small car.

The latest addition to the Riley Nine range is a sports fabric saloon, which, as will be seen upon reference to the photographs, is an exceedingly pretty car. True, at first we were somewhat dubious as to leg-

two days—without the slightest feeling of being cramped at the end of a day's journey.

Since the car was described in *The Light Car and Cyclecar* (at the time of the last Olympia Show) one or two alterations have been made to the chassis, notably the provision of a centre bearing for the propeller shaft. B.H.P. pistons have now been standardized in order to cut out "slap" when the engine is cold. An alteration has been made in the induction system whereby part of the exhaust pipe is led round the rear end of the cylinder block and joins up—by a telescopic joint—to an extension of the induction pipe. Thus heat is transferred to the induc-

A MOST INTERESTING ENGINE.

The Riley Nine engine strikes a new departure in small power units. There are two camshafts, one on each side of the crankshaft, the o.h. valve rockers being operated by push rods. The valve gear can be inspected by removing the four easily detachable covers seen in the photograph. Other points of interest are the unusual position of the carburetter, the vertically placed magneto with its contact breaker uppermost and the cylindrical tank.

tion system and so forms a hot spot at the point where the carburetter joins the pipe.

Probably the most important alteration so far as the engine is concerned is the addition of four covers to the rocker casings. These covers are held in position by spring clips which surround the rocker shafts. In order to gain access to the rocker gear one merely has to "spring" up the covers, each of which gives access to two adjacent rockers.

There are two camshafts, one on each side of the crankcase and driven by a train of helical gears.

Each camshaft has a spring-loaded square cam, which is used in the interest of silence. Totally en-

room for both driver and passengers, but fears on this score were soon put to flight by an actual trial of the accommodation provided. The driver—a six-footer, by the way—could be accommodated at the wheel with real comfort, the seat and squab being sufficiently large to give good support to the thighs and shoulders and—as was proved after about 450 miles running in

closed push rods run alongside and parallel to the cylinder bores, and rockers transmit the reciprocating motion to the valves, which are inclined to the axis of the cylinders at 45 degrees. This arrangement of valves and rockers enables perfectly hemispherical combustion chambers to be obtained, and with the sparking plugs located practically in the centre of the heads, "pinking" or "knocking" when under heavy loads is almost impossible. The bore and stroke of the four cylinders are 60 mm. and 95 mm. respectively, giving a volume of 1,075 c.c.; the R.A.C. rating is 9.01 h.p. (£9 tax).

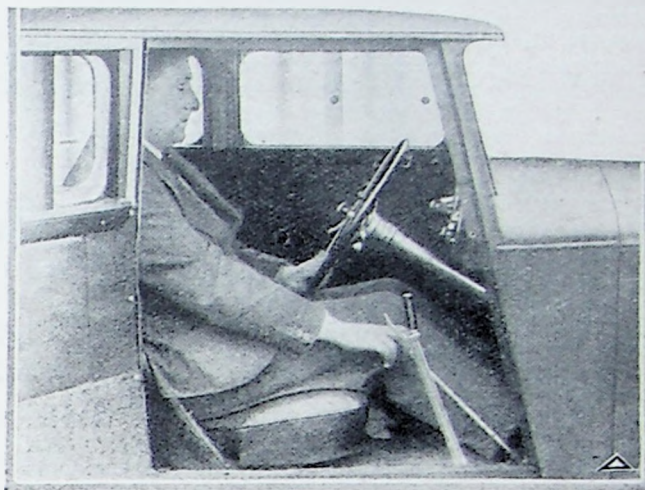
Only two bearings are used for the crankshaft, but the general construction of this unit is very sturdy. The bearings are of large diameter, and so much care has been taken in balancing the shaft that there is no appreciable period at any speed. A high-tension magneto and Zenith carburetter are used, whilst oil is pressure-fed by a plunger-type pump to all bearings. The clutch is of the disc type and, like the four-speed gearbox, is mounted in unit with the engine.

Real Saloon Comfort.

So far as the body is concerned, the lines must be accredited as very imposing. The doors are wide enough to allow easy entry or exit, those at the rear being hinged forward and cut away to clear the wheel arches. The windows, although comparatively small, give excellent all-round vision, the front windows being arranged to slide fore and aft in runners, whilst those in the rear doors wind down by means of conveniently placed handles. The exterior is finished in leather cloth and the interior is upholstered in grained leather, to tone in colour with the exterior. Easily adjustable front seats are a feature, whilst a large single-panel screen, hinged at the top, assures uninterrupted vision.

The controls are well placed; they give one that feeling of being thoroughly at home from the moment one slides into the driving seat. Gear-changing is child's play and the clutch is so velvety that a perfectly smooth get-away can be made in third gear if desired. There is a feature concerning the mounting

for the gear lever which will doubtless be appreciated by owners of Riley Nines that are driven by people of varying stature. The whole of the gear quadrant, complete with the lever, can be swung about its axis to give various lengths of reach. Thus if a short driver requires the adjustable seat to be drawn well up towards the wheel, the gear lever can be swung



An interior view showing how conveniently the controls come to hand. To cater for the comfort of drivers of varying stature the whole of the gear quadrant can be swung about its axis so as to give different lengths of reach.

forward to suit exact requirements. Conversely, with the seat in the rearmost position, the gear lever and quadrant can be swung rearwards to the desired extent.

The model which we tested had previously covered about 1,000 miles, and we had no qualms about flogging it. We did so and the engine did not mind such treatment in the least. At the end of 450 miles of very hard running the engine was just as sweet as at the beginning and the power had not been affected in the slightest. In neutral the engine ticked over like a watch. On top gear it would pull steadily at 8 m.p.h. and accelerate from that speed to over 60 m.p.h. with a smoothness that must be experienced to be believed.

On long, straight stretches the accelerator could be kept hard down on the floorboards and the speedometer needle would keep between the 50 m.p.h. and 60 m.p.h. mark so long as road and traffic conditions permitted. All main-road hills could be taken on top gear, providing the approach was made at a reasonable gait. A speed of 40 m.p.h. was well within the capa-

The front view is smart and attractive, the radiator following familiar Riley lines. At the rear there is a very useful luggage carrier into which a suitcase and so on can easily be slipped.

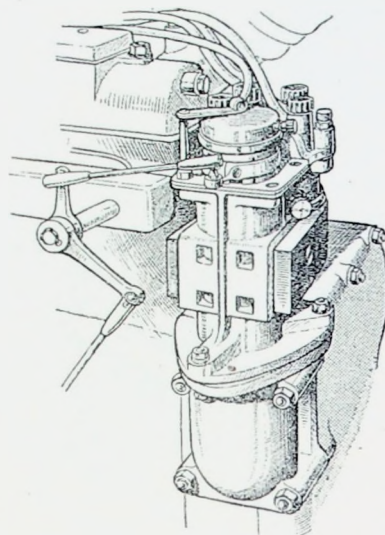
bilities of the car on about one-third throttle, but the engine ran with such sweetness that it seemed to be asking for more and more speed. On a slight downhill grade, the speedometer recorded 67 m.p.h. on one occasion and 65 m.p.h. on several occasions.

Steering is delightfully positive, and the action of the brakes is in keeping with the high standard revealed by the rest of the car. When we first took the car over the shock absorbers were rather too tight, but when properly set the springing was pleasing at both low and medium speeds. The shock absorbers needed to be rather tight for a mile-a-minute gait.

Acceleration on top gear was very good indeed, and as we understand any future cars of this type are to be fitted with an engine having a slightly higher compression ratio, the acceleration should be even better than on the one we tested. From 10 m.p.h. to 20 m.p.h. took a matter of 6½ secs., from 10 m.p.h. to 30 m.p.h. 13 secs., and from 10 m.p.h. to 40 m.p.h. only slightly more than 20 secs.—really excellent going. That the engine is flexible is demonstrated by the fact that on the bottom gear of 20.3 to 1 16 m.p.h. could be obtained, on second gear (13.1 to 1) 28 m.p.h., and on third gear (7.6 to 1) 46 m.p.h. without over-revving the engine. This, of course, is thoroughly in keeping with the standard demanded of a modern high-grade sports car.

We regard this sports Riley Nine as a well-equipped and well-mannered car with an exceedingly good road performance. It is undoubtedly a car of the highest

(Left) One of the four spring-held valve rocker covers removed.



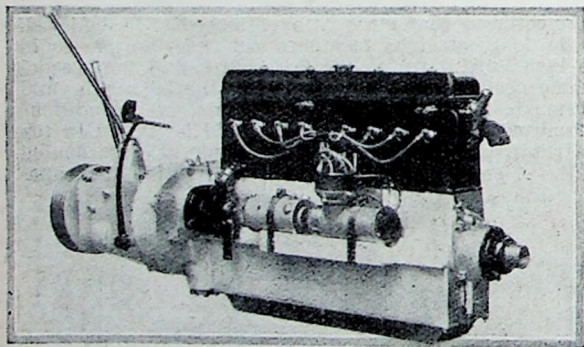
(Right) The magneto mounting—ideal for examination or adjustment.

class and, priced at £298, compares well with other cars of equal performance and quality.

NEW STRAIGHT-EIGHT S.C.A.P. ENGINE.

IN France light-car builders with small capital are rather fortunately situated in the matter of obtaining engines. The proprietary engine has been highly developed in that country and half a dozen or more firms are prepared to supply from stock complete power units.

Very fine outfits are made by some of these specialists—engines which have helped small-car builders to earn an international reputation.



A particularly clean and businesslike unit. On the near side are two Solex carburetors, the exhaust manifold and the starter motor.

A fine example of a proprietary power unit is to be found in the latest production of the S.C.A.P. firm. This is a new straight-eight 1,500 c.c. engine with rocker-operated overhead valves. It will be seen in

public for the first time at the forthcoming Paris Salon. The engine has a bore of 54.5 mm. and a stroke of 80 mm. The cylinders are cast in monobloc form, with a detachable head, the driving gear for the camshaft and so on being located at the rear end of the cylinder block. A three-bearing crankshaft is fitted, the centre one being a large ball-bearing. Forced lubrication on modern, dry-sump lines is employed throughout the engine, including the bearings for the overhead rockers.

Water pump, dynamo and magneto are mounted on the off side of the engine. On the near side are two Solex carburetors, each supplying a group of four cylinders. Separate exhaust manifolds are arranged for each group. The starter is also mounted on this side of the engine, the Bendix drive being completely enclosed in an extension of the aluminium clutch casing.

The last-named, together with a three-speed gearbox, is bolted up in one with the crankcase of the engine. The clutch comprises two discs running in oil, the oil level in the casing and gearbox being the same.

The transmission brake, which is supplied complete with the outfit, is provided with a particularly direct method of operation, the operating cam being on the short cross-shaft to which the end of the lever is attached.

From the above brief details it will be seen that the new straight-eight S.C.A.P. bears a close resemblance to the existing 1,100 c.c. four-cylinder models. If the sterling qualities of the latter are combined with the flexibility and sweetness of running characteristic of an eight-cylinder engine, the new type should prove a popular unit. The makers are La Société Anon. des Anciennes Etablissements S.C.A.P., 47 and 48, Rue Victor Hugo, Courbevoie, Seine, France.

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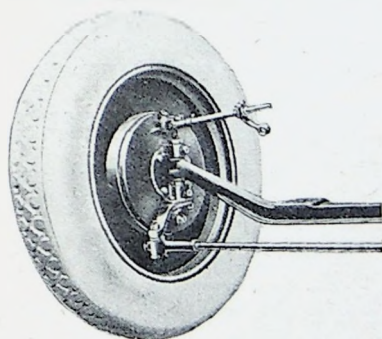
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**SEPTEMBER
9th.**

A NEW FRENCH LA LICORNE LIGHT CAR.

FIRST DETAILS OF A 7 H.P. MODEL
WHICH WILL MAKE ITS DEBUT AT
THE PARIS
SALON.

A VERY interesting small French car which will make its first appearance at the forthcoming Paris Salon is the new La Licorne. Rated at 5 h.p. in France, it will probably be called a 7 h.p. in England. During recent years the smaller variety of French car has tended more and more to become a sports



How the front-wheel brakes are arranged. The operating shafts have ball-type universal joints at their inner ends only.

car. Lightly built and fitted with a high-efficiency, fast-running engine, the French voiturette is a delightful machine to drive in the open country, but it is sometimes a little lacking in those qualities of comfort which one finds in the British light car.

The new La Licorne is the exact opposite of the voiturette type. Solidly built and fitted with a comparatively low-revving engine, it is designed to give long service and maintain the "no trouble" reputation of La Licorne productions.

The dimensions of the chassis allow for the mounting of a comfortable three-seater body. The engine is a 900 c.c. four-cylinder monobloc, the bore being 60 mm. and the stroke 80 mm. The cylinder block is cast in one with the crankcase, as may be seen from the photographs, which show the neat lines of this small Licorne power unit. Inclined side-by-side valves are used and the camshaft runs in an oil bath, the oil level being maintained at the height of the camshaft centre line. The cylinder head, which is detachable, provides ample water space. Cooling is on the thermo-siphon principle.

The camshaft has a spherical type of ball-bearing at the rear end, whilst the forward end is mounted in an eccentric cast-iron bush, which allows for taking-up wear in the operating gear. The cross-shaft for the magneto drive is mounted in a similar type of eccentric cast-iron bush, which provides adjustment for the skew gearing.

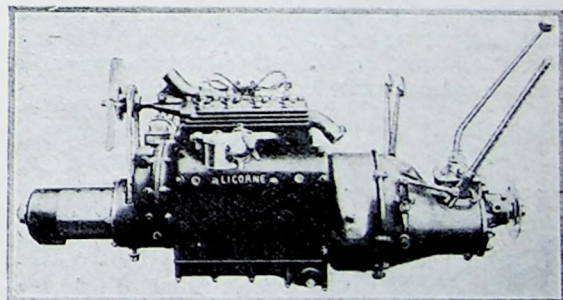
A dynamotor for lighting and starting is employed,

the instrument being coupled directly to the nose of the crankshaft. Lubrication is on the dry-sump principle, a Solex carburetter is fitted and the arrangement of induction and exhaust passages is particularly good with regard to efficient warming of the incoming mixture.

Special features of the Licorne engine include an oil-escape valve in the interior of the timing-gear casing, whereby the pressure is relieved so soon as it rises above a predetermined figure, and "silentbloc" mountings to the engine bearers.

The clutch is of the single-disc type and the clutch casing and three-speed gearbox are bolted up in one with the engine crankcase. The propeller shaft has a Hardy flexible joint at the forward end and a spherical type of universal joint at the rear.

Suspension is by rather flat half-elliptic springs forward and long quarter-elliptics at the rear. The latter



The induction side of the 900 c.c. engine, which has a bore and stroke of 60 mm. and 80 mm.

are slightly splayed, as they follow the lines of the tapering side members of the frame.

Four-wheel braking is, of course, employed, a point to be noted in the front-wheel braking arrangement being the fact that the brake-operating shafts have ball-type universal joints at their inner ends only. The instrument board is particularly well fitted and lends an air of distinction to this attractive little chassis. A standard type of worm-and-sector steering gear is fitted.

The new La Licorne will be seen at the forthcoming Olympia Show. It is to be marketed at a very moderate price, and in this country as well as France the car should meet with success.



By "FOCUS."

Our contributor "Focus" complains that hotel and garage charges north of the Border are much too high. He quotes instances of prohibitive prices being charged and describes how they may be avoided.

TWO or three years ago, on returning from a fairly extensive tour in Scotland, I mentioned that I had found the hotels and garages extremely expensive.

Following my remarks, a large number of readers wrote to say that I was mistaken, whilst several accused me of being prejudiced against Scotsmen as a whole and suggested that I should investigate the matter more closely before rushing into print. I raised the question again last year after some friends of mine had returned from an extensive motor tour in most parts of Scotland, and I related at the same time a rather amusing story which it would be worth while to recall.

The owner of the car which the party had used happened to be a man who knew very little about things mechanical. After stopping in one centre for a fortnight he called at the garage where the car was kept and mentioned to the proprietor in the course of conversation that he would be leaving the following

day. When the next morning came the car refused to start, and not until the battery was practically exhausted did the garage man suggest that something was perhaps at fault. He thereupon lifted the bonnet, remarked that the trouble would take an hour or so to put right, told my friend to call back later, and, when he did so, charged him 15s.

for repairs without explaining the nature of the work

that had been done or the replacements that were needed. The unfortunate owner paid his hotel bill plus the 15s. for repairs, and then returned to his hotel to collect his party and their luggage. Whilst making ready for departure, the question of the 15s. charge for repairs was mentioned, and another visitor to the same hotel said that he had had a similar experience at the same garage the previous year!

This particular episode does not necessarily imply that all Scottish garage proprietors are inclined to take advantage of their customers, nor does it prove that all Scottish garage charges are excessive. In the light of recent experiences of mine, however, it certainly helps to provide sufficient evidence to satisfy me that southerners touring north of the Border are likely to find that garaging their cars will cost them a great deal more than they are in the habit of paying.

Garage Charges.

Whilst in Scotland recently with an Aero-Morgan I found that the average charge for storing the little car overnight was 2s.; on more than one occasion the charge was 2s. 6d., whilst the garage men appeared to expect a tip in addition. For cleaning and effecting minor repairs I found that the charges made were distinctly heavy, whilst on one occasion after filling up with petrol and oil at a remote country garage I asked for a little water for the radiator and the assistant told me that a charge of 3d. was made for this.

Turning now to hotel charges I cannot do better than quote my bills in connection with this year's Scottish Six-days' Trial, the charge in each case being for two people sharing a double room and taking dinner and breakfast in the hotel: First night, 27s.; second night, £1 13s.; third night, £2 0s. 3d.; fourth night, £2; fifth night, £2; sixth night, £2 0s. 3d.; seventh night, 25s.

Is it surprising, in view of these charges, that my outstanding impression of Scotland this year was the perfectly amazing number of camping and caravanning parties? No doubt the majority of



Consternation of our contributor when called upon to pay half-a-crown for garaging a Morgan overnight.

these people had been to Scotland before, had been charged exorbitant prices for hotel accommodation and had decided in future to live, whilst north of the Tweed, in their own portable homes.

Even so, however, they find living a great deal more expensive than it is when they are at home. At a fruit shop in a town of medium size I asked for a pound of eating apples which were not apparently of specially good quality and was told that the price was 1s. 4d. per pound. At another shop in a neighbouring town I asked for bananas and had to pay 2½d. each for distinctly inferior specimens.

The following day, having no time for lunch, my companion and I asked at a small and none-too-clean hotel in a centre which is popular amongst motor tourists for a bottle of Bass apiece and a couple of beef sandwiches. The bill came to 4s.

I could quote innumerable similar instances of gross over-charging, but will content myself with two more. At one hotel before dinner I called for cocktails for a party of four and was charged 7s. for four tiny glasses containing gin and Italian vermouth, the actual value of which was certainly not more than 2s. At the same hotel a small bottle of light beer cost 1s., whilst a small whisky was 1s. 6d. The hotel in question was certainly of the better-class variety, but was by no means of the really first-class order. Baby cocktails which cost 9d. in London were priced at 2s. apiece in another hotel in the Highlands.

Tourists Driven Away.

Charges of this kind must drive thousands of potential tourists away from Scotland, and they are, of course, wholly responsible for the lack of patronage from which so many of the Scottish hotels suffer. Motoring parties from the south are quite prepared to put up with the bad roads of the Highlands and they recognize that rough surfaces and steep hills are inevitably associated with mountain scenery, but they can see no good reason why, in addition to depleting their bank balances with repair bills caused by the bad roads, they should have further inroads made upon them by exorbitant hotel and garage charges.

One way, of course, to prevent this profiteering is for those who resent it to keep away from Scotland; another is to take a tent or caravan, and a third is to make a point of stopping at private lodgings and touring from a centre.

The last two plans have a great deal to be said in their favour, but the most successful of all has been followed this year by a friend who runs a

small saloon with detachable front and rear seats. He took this car for a Scottish tour with his wife and they used it not only as a means of transport but for eating and sleeping in as well. At night the seats were placed outside the car and covered over with a tarpaulin, the interior of the car being converted into sleeping quarters with the aid of an inflated mattress, which could be rolled up into a small space during the day.

I should mention, perhaps, in conclusion that the necessities of motoring, apart from petrol which costs a penny a gallon more, are no higher in Scotland than in England and Wales, but it is not unusual for commodities like engine oil sold in bulk to be charged for at prices higher than their maker's advertised prices.

Apart from the cost of garages, hotels and so forth, motor tourists in Scotland find that they also meet unexpected incidental expenses which are distinctly heavy. The ferries provide a case in point. As everybody knows, the Scottish lochs are very large indeed, and make very big inroads into the country. Exploring much of the coastline is consequently out of the question unless frequent detours inland—perhaps sixty or seventy miles in length—are made or unless one makes use of the ferries. These number about a dozen, whilst the charges for two-seaters vary from 15s in the north to 6d. for the Clyde crossing. The charge in this connection, which I always most resent, is for driving over Connel Bridge—which costs 10s., or about 2d. a yard.



"Two shullun', please"—for a baby cocktail which costs ninepence in London.

"My outstanding impression of Scotland this year was the perfectly amazing number of camping and caravanning parties. No doubt the majority of these people had been to Scotland before . . ."



NOVELTIES IN ROAD-MAKING.

NEW METHODS OF CONSTRUCTION—SKID-PROOF
SURFACES—CONVERTING REFUSE INTO ROAD
MATERIAL.



THE ever-growing stream of motor traffic is not only a matter of mere numbers, for commercial vehicles are steadily becoming heavier and faster, road surfaces are called upon to withstand far more wear and tear than of yore and the whole combination of circumstances calls continuously for new ideas in road construction, both from considerations of durability and safety.

Although, according to public opinion, the perfect road has not yet been discovered, progress in highway engineering has at least kept pace, generally speaking, with the amazing development of motor transport. This fact may, perhaps, be disputed by motorists who are unfortunate enough to live in an area where the roads are definitely bad, but it should be remembered that the finances of local authorities enter largely into the matter and it may be a question of available funds and not entirely one of engineering skill.

The changes which have taken place in the science of road-making are well exemplified in the accompanying interesting photograph, which illustrates a typical modern plant used for road construction and repairing. This elaborate machinery is employed in manufacturing bituminous road material—a process which is carried out at a temperature well above the boiling point of water, and the finished product has to be laid on the road and rolled while still hot. The constituents of the mixture—usually broken stone, sand and bitumen—are graded, weighed and measured almost with the accuracy of a chemist's prescription, while the temperatures during the various stages of manufacture are watched most carefully and kept within narrow limits.

The whole of this complicated plant is capable of being moved readily from job to job and presents a marked contrast with the simple appliances of the old-time road-mender, whose method consisted merely of breaking up flints and scattering them on the road for the traffic to roll in.

Among other good qualities, the ideal road should possess durability in a marked degree, and this necessitates its being waterproof. In the effort to make the surface entirely impervious to moisture, a certain type of road has been evolved which, in some cases, becomes highly polished, and in conjunction with the requisite weather conditions—notably a shower following a lengthy drought—such a road can be extremely dangerous unless great care is exercised by drivers.

With a view to overcoming this disadvantage, while still preserving the important feature of durability, various types of surfacing have been introduced. One of the most novel is that known as Betonac, which consists of a form of concrete containing small particles of steel, varying in size from tiny grains up to angular pieces about as large as a wheat seed. It is claimed that this material is extremely hard-wearing, but always maintains a slightly roughened surface. A short length of Betonac road has been constructed at Sutton, Surrey.

Another simple but ingenious method involves the use

**The modern road-repairer's plant.
An up-to-date portable mixer for
bituminous road material. It is
made by Millars' Machinery
Co., Ltd.**

of steel in quite a different form; this is the Surfasteel steel-mesh road, in which a network of thin steel is built up, consisting of interlocked strips placed on edge with their upper edges flush with the finished level of the road. The steel is visible and takes part of the wear due to traffic.

The metal used is about an inch in depth and a tenth of an inch in thickness, and the mesh is composed of squares measuring 4 ins., or thereabouts, each way. The spaces formed by the steel network are filled in with asphalt or concrete and the metallic reinforcement gives a rigidity to the roadway, thus preventing corrugation and creeping, in addition to providing an anti-skid surface. A section of Hammersmith Broadway, London, has been constructed on these lines and the adjacent photograph shows the work in progress, the steel mesh, previous to filling in with asphalt, being visible in the foreground.

Brick roads, although quite common in the United States, are very unusual in England, but trial lengths have recently been laid in Staffordshire, near Wolverhampton and Stoke-on-Trent. The bricks used are technically known as "Staffordshire Blues," but their colour is best described as being a blend of grey and purple. So far they have proved very successful under heavy traffic and they are clean, safe and pleasant in appearance.

A somewhat similar type of road consists of hard concrete bricks moulded under high pressure. They are of much the same dimensions as the familiar wood blocks, for which they are intended to be a substitute, and, although giving good service on the Continent, their use in this country has not progressed beyond the experimental stage.

The same remark applies to the various forms of wood and concrete blocks faced with rubber which have been introduced from time to time, but it is interesting to note that a rubber-surfaced road is at present undergoing test and carrying an enormous load

of traffic in New Bridge Street, London, E.C. Roads like this are very expensive and, so far, have made little headway in the face of competition from other types, but there are undoubted possibilities in a rubber road, especially in situations where quietness and the absorption of vibration from heavy traffic are matters of vital importance.

It is rather surprising to learn that very satisfactory roads are now being made from ordinary dustbin refuse, for, at first sight, there appears to be little in common between the contents of the domestic rubbish pail and the hard, clean, greyish-black road into which this material is converted.

The method adopted consists in burning the refuse in a special form of destructor, and the resulting product, which somewhat resembles coke, but has a very different composition, is ground up, sifted, reheated and mixed with hot tar or bitumen.

A black, plastic substance is thereby obtained, which is spread on the road and rolled before it has time to cool. It sets when cold and forms a hard, impervious surface,

which is slightly gritty and therefore does not induce dangerous skids.

Many enterprising municipalities have recently installed the necessary plant for converting their refuse into this excellent road material, and among them may be mentioned Sheffield, Woolwich and Brighton.

The prophecy has been made that the roads of the future will be constructed of steel, and, revolutionary as this may seem, it incidentally serves to confirm the ancient statement that "there is nothing new under the sun." for an all-steel road was constructed in the south of France so far back as 1904, and even a steel highway is, therefore, not an entire novelty.

Be that as it may, however, it is an encouraging fact that while the automobile engineer is busily engaged in making our cars better and better, his colleagues in the world of highway engineering are striving hard to keep level in the race towards perfection. B.G.G.M.



A "Surfasteel" steel-mesh road under construction at Hammersmith Broadway, London. Asphalt is being used as a "filling."

HOME-MADE SPRING GAITERS.

THE riding comfort of a car is increased, as a rule, if the springs be enclosed in some form of grease-retaining spring gaiters, and there is no reason why any keen owner-driver should not make a set for his car: the time taken is not long, the trouble negligible and the cost should not exceed 10s. for the actual material used.

A brown-paper template should first be made to conform to the shape of the springs, as it is rather a difficult matter to cut the leather to fit without some kind of template from which working measurements may be made. Great care should be taken in fitting the paper template to ensure that the dimensions are correct in every detail, as a mistake in the cutting of the leather is apt to be expensive.

Box calf, or similar soft, good-quality leather, should be obtained, and this, together with a number of U-shaped hooks, can be supplied by any bootmaker. The hooks are not at all difficult to attach, only a little care must be taken to see that the open ends point

away from the edge of the leather. This part of the work can be entrusted to a bootmaker if desired, provided that explicit instructions are given before the leather is cut and the hooks attached.

Leather lacing or hand-made cord should be used to lace up the gaiters, as it is necessary to use only lacing of the best quality to keep them in position and perfectly grease-tight. About 9 yds. or 10 yds. of the cord or leather lacing will be needed for securing gaiters of average dimensions.

Before the covers are fixed in place each spring must be thoroughly cleaned and greased. Special spring-gaiter grease is now obtainable from most garages.

When this operation is complete the gaiters should be held in position and firmly laced, care being taken to see that no undue strain is likely to be placed on the lacing of the gaiters when the springs move up and down on bumpy roads. From time to time the springs should be cleaned and given fresh grease.

CARS FOR COUNTIES

"MARMADUKE" MAKES INTERESTING SUGGESTION AND FOLLOWS IT UP WITH SOME REASONS WHY ONE'S HOME COUNTY SHOULD INFLUENCE ONE'S CHOICE OF A CAR

TYPICAL OF DEVON.

Long, winding hills call for good brakes, and a four-speed gearbox is often an advantage: narrow lanes emphasize the importance of a narrow track, a point on which most light cars score.

and so the car should be chosen on account of its suitability for the road and other conditions which obtain in this area.

Different parts of the country vary vastly in the demands they make upon a car, and one which would pass muster under the easy road conditions of the Eastern Counties might not be nearly so satis-

factory when confronted with the many single-figure gradients to which West Country, Welsh and Scottish motorists are accustomed.

Engine capacity, gear ratios, springing and brakes are four points on which cars differ greatly, and, to begin with, we will consider the last.

In a hilly country the brakes will be used far more than in a flat district, and there must, consequently, be no doubt about their efficiency. Also the method of adjustment should be as simple as possible, for much use means faster wear and the need for more frequent resetting.

Springing is another point worthy of consideration, for although this, unlike the brakes, can be modified after purchase by the use of shock absorbers, it is just as well, other things being equal, to begin with a car of which the springing suits one's home district. Only by a run over a typical road in our particular part of the world can this be discovered; therefore trials in London at the annual Show are of very doubtful value in many cases.

Suitable gear ratios are a matter of supreme importance if one is to obtain the utmost pleasure and efficient running from the car. Four speeds are better than three in a hilly district if the driver uses them intelligently, but the most suitable ratios depend on a variety of matters, engine capacity and weight being two of the chief.

Engine size, although it might be thought the most important point of all, actually, in some ways, matters least. Hill-climbing is more a question of suitable gear ratios than actual cubic capacity. In these days any car will climb practically any hill, but there is a vast difference in the manner of the achievement, and a make which has a low power-weight ratio will be distinctly less pleasant to drive in a very hilly district than one which is good in this respect, because so great a proportion of one's mileage will have to be

AN expression often used by racing men is "Horses for courses," which means that owing to some characteristic, generally—although not invariably—physical, some horses are more likely to do well on certain racecourses than on others.

Thus the big, free-striding animal which could, perhaps, win on a straight course like Birmingham might be quite unable to do itself justice on that "soup plate," the Roodee, at Chester. A non-stayer would be unlikely to shine where the finish was uphill, as it is in the Cambridgeshire Handicap run at Newmarket, and one with bad shoulders, or forelegs of doubtful soundness, would not show to advantage coming down the hill after Tattenham Corner in the Derby.

Cars do not vary in quite the same way, but without any doubt some makes are more suitable for certain districts than others, and the person who does most of his motoring in one particular locality should pay considerable attention to this point when the time comes to select a new car.

One does not, of course, mean that other types will not give reliable service in the particular district, but that the products of certain firms, owing to their peculiar characteristics, are really more suitable.

To give a broad illustration of what is meant, a number of Italian cars are over-cooled for use in some parts of England, where stiff gradients are the exception. Such cars are tested largely in the Alps, and their cooling systems are designed to operate satisfactorily under conditions which they are never required to meet in, say, the Home Counties of England.

The big majority of motorists are tied down by business or other reasons to some definite locality for the greater part of the year. Most of us take one or more extended tours, and a number of longish out-and-home runs during the twelve months, but except for these our annual mileage is largely covered within a 50-mile circle, with our place of residence as a centre,

done on the indirect gears. In a flat country the deficiency might pass quite unnoticed and, in fact, be no drawback.

Then there is the question of wheelbase and track. The writer happens to live in a part of the West of England where very narrow lanes predominate so soon as one leaves the main roads. After trying all types he is very strongly of the opinion that the small car is by far the most suitable for everyday work under such conditions.

These lanes are often so narrow that passing another vehicle is frequently an extremely difficult matter. Many times one or other will have to reverse until a slightly wider piece of road is found. The smaller car with its track of not more than four feet scores time after time, those few inches saved settling in an astonishing number of instances whether one can or cannot pass. For this reason, in spite of its smaller engine, it is a faster vehicle under such road conditions than cars of double its horse-power. This the writer has proved quite conclusively.

Wheelbase, too, is a matter of importance, for every inch means a larger turning circle, and where the small car with its 8-ft. 6-in. wheelbase can, by taking

advantage of a gateway, often turn in the most confined quarters, a bigger car, a foot or more longer, will find it impossible.

In this connection a good lock is a far more important point than is generally realized. Only a person who has driven a car which is bad in this respect can have any idea of the inconvenience and annoyance it can cause in the course of a year's motoring in narrow lanes. Hair-pin bends on steep hills become real bogies, and the added wear on the steering gear when it is necessary often to turn a car with a poor lock in a restricted area must shorten the life of that piece of mechanism very appreciably.

From the foregoing it will be obvious that certain makes of car score in certain districts, and a thorough study of local conditions might go far towards the formation of quite a new set of questions for salesmen at Olympia; in fact, one can visualize a bored attendant "stirring" visibly when approached by a man or woman who is determined to purchase the best car "for the county." It gives rise to the possibility of "Cornwall" models, "East Anglian Three-speeders," and so on!

MARMADUKE.

RETAINING ROAD SPRING ELASTICITY.

The Effects of Overloading a Car—Damage Seldom Noticeable at Once.

THE care bestowed upon the springs of a car is not infrequently confined to keeping the dirt and water out and the oil in. This care is, of course, excellent so far as it goes, but there is one point upon which many motorists are gravely negligent, and this is overloading. A four-seater car is used to carry six people, and because the ordeal is passed without a leaf breaking it is assumed that no damage is done.

To appreciate the damage which an action of this kind may occasion it is necessary to consider one or two properties of the elasticity of metals. There is general familiarity with a form of rubber popularly known as "elastic," and because this material is easily stretched there is a tendency to associate the term elasticity with facility of stretching. Engineers, however, use the term to denote the property of returning to their original form which some bodies possess. Thus lead, which is easily stretched, is not elastic; while steel, which is by no means easy to stretch, is considered to have a high elasticity because of its power to return to its original shape.

The elasticity of any metal may be determined in reference to the various types of force which may be applied to it; for example, tension, compression, torsion and bending. The simplest case is a test in tension, and the accompanying graph shows a representation of such a test applied to a length of Delta metal wire.

It will be observed that for loads up to 8 lb. the graph is a straight line, which indicates that the extension of the wire is directly proportional to the load placed upon it. For loads in excess of 8 lb. the graph is a curve, showing that the wire is now stretching at a greater rate. In this particular test the wire broke under a load of 15 lb.

Experiment has shown that for loads within the range covered by the straight-line portion of the graph

of any test of this type the metal is elastic—that is, if the load is removed the specimen returns to its original dimensions, but for loads in the curved portion of the graph the metal is not elastic, a permanent deformation having taken place. Hence the load represented by the limit of the straight line in the graph is called the elastic limit of the metal.

It will be well, before applying this information to the case of car springs, to consider the effect of loading a specimen beyond its elastic limit. If, in the case under consideration, a load of 4 lb. were hung on the wire it would be elongated 0.2 in. and the load might hang there for any length of time without any further change, and upon removal of the weight the wire would immediately contract to its original length.

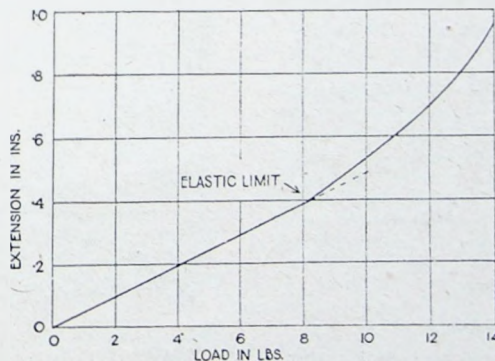
If, on the other hand, a load of 12 lb. were placed on the wire it would immediately stretch 0.7 in., and not only would the original length not be restored upon the removal of the load, but if it were left there we should find that the wire would continue to stretch slowly and ultimately it would break, although a load of 15 lb. is normally required for that purpose.

Returning to the case of car springs, it is now easy to see that so long as a spring is not overloaded it will continue to perform its function, but one overloading, even for a short time, will destroy its elasticity to some extent, and overloading for a protracted period will not only bring about this evil, but it will materially reduce the ultimate strength of the spring, although the load may be much less than would be required to break the spring in the normal way.

When a car spring is known to have been loaded beyond the elastic limit it can, as a rule, be restored to normal condition by being dismantled and carefully heat-treated, preferably by the makers, who will know exactly what temperatures to use.

A.H.S.

p21



This graph of a piece of wire in tension shows the even extension up to the elastic limit and the rapid increase after the limit is passed.



RUNNING A CLUB SUCCESSFULLY.

By a Club
Secretary—

—who makes many helpful suggestions to those who are about to form a motor club, and to those who wish to improve an existing organization.

DURING a recent committee meeting at which I was present we were all rather startled by the question, "What are we really doing for our members, on whose subscriptions the club exists?"

At first the chairman and, in fact, most of us, thought that the speaker was joking; but he was not—he was absolutely serious. And the answer, although the club was an important one and generally looked upon as successful, was not by any means easy to supply.

Annual subscriptions vary, of course, with different clubs, but anything from 5s. to £1 1s. is usual. The amount is admittedly modest, but however this may be, obviously some reasonable return is expected by the members for their outlay. It therefore behoves not merely every club secretary but also every individual member who is at all keen on club matters to do some hard thinking from time to time in endeavouring to find answers to such questions as:—

"What do we give the individual member for his money?"

"Can a member honestly tell his friend in the locality that he is missing something really good by not joining the club?"

"What real inducement has a new motorist in this locality to join the moment he acquires his new vehicle?"

Sometimes I think that the average local motor club must be one of the most difficult agglomerations of humanity in the world with which to deal. The binding medium—to use an analogy—seems to be so weak, whilst the disruptive forces are so powerful. Often I envy those who run masonic lodges, where the members are bound together by secret and serious oaths, and sometimes those who run trades unions; compared with me they get things all their own way. My path, compared with theirs, is beset with thorns.

Social Events Popular.

Events in the average local motor club fall under two headings—the social and the competitive. Let us consider first of all the former.

Nowadays the social event is next to none in importance. The proportion of members keenly interested in speed and competition work is comparatively small, whilst there is hardly a single small car owner who does not welcome a social event or gathering of the right kind. But of the right kind it must be, and it is here that difficulties start.

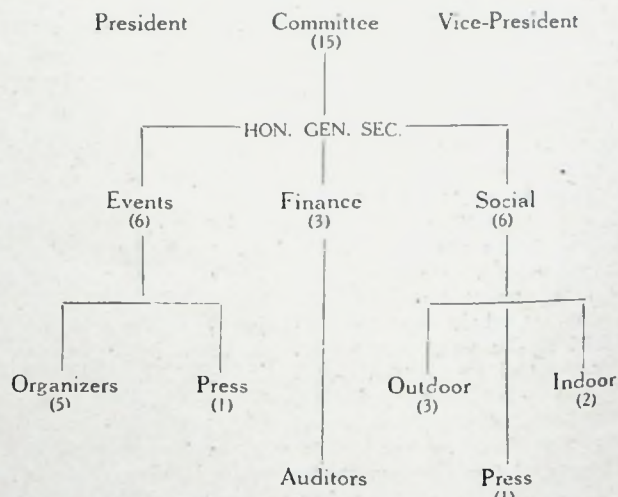
The possession of a small car—or it may be a motorcycle—is really the sole binding link that we have in our local club between the members. A man who joins a motor club may safely be presumed to own a small vehicle of some kind, and it is probable that he takes a keen joy in its use. But beyond this we can presume absolutely nothing. A member may be a "duke's son" or a "cook's son"—both types are to be

found in motor clubs and generally they are excellent fellows. Some will come in diminutive two-seater cars, with four adults and five children up; others appear in elaborate and costly aluminium-bodied 70 m.p.h. sports models.

Unlike cyclists, motorists just hate going along in droves, so any idea of a straightforward club run can be ruled out at once. Practically every party has its own ideas of enjoyment. What is the common ground upon which to get together and make a start?

To suggest any specific solution of this rather difficult problem would be to court disaster, as there is no getting away from the fact that ideas on what constitutes a successful social function vary materially from one club to another, from one part of the country to another, and, in fact, from one town to another. It is impossible to lay down detailed instructions that will always ensure success.

In general, the secret of success is to leave social matters to a really strong social committee who know



With a committee of 15 this "tree" shows the composition of the various sub-committees in the case of a small local club. Other "branches" could be added if necessary.

personally practically everybody, and who make it their business to get to know new people as they come along. A committee of this kind must have a good sprinkling of women, who, in general, seem to understand these things far better than men. With one club a picnic with something in the nature of a gymkhana to follow will go down well, but not with another. Some clubs have a large proportion of dancing members, but to others the idea of a dance would not appeal at all.

One point there is, however, that is of general

application, and that is the social committee should spare no pains to welcome and put at their ease new members as they come along. Time and again have I known two and three new members to turn up at a social function as their first appearance in public in the club, and then to find that they have been absolutely ignored and taken no notice of by anybody, the immediate result being, of course, a dash of cold water on their enthusiasm.

A leaf might be taken from a masonic procedure. At a masonic lodge, a brother initiate, or newly joined brother, is, on the occasion of his first attendance, the hero of the evening. He sits at dinner beside the Worshipful Master, he is toasted by everybody, has his health proposed, and is called upon to reply. Nothing can be more damping to the enthusiasm of the newly joined member of a motor club than to find a gathering not of a corporate club at all, but of little groups of twos and threes, none of whom pay the smallest attention to him.

Competitions.

The running of competitive events is a somewhat complicated business. Before anything much can be done in the way of competitions it is essential that the club should be affiliated to the R.A.C., because in the absence of this affiliation, permits to hold such events will not be granted. Purely unofficial competitions can, of course, be held, but they will never be strongly supported.

A live competition committee is therefore essential, and on the committee there must be at least one man thoroughly experienced in the running of competitions, as the technicalities of affiliations and permits are distinctly complicated, and a great deal of time, effort



Given fine weather a club picnic is always a well-attended event, but it must be carefully organized if everybody is to be happy.

and experience are required to get things into proper order.

One or two speed competitions in the course of the season are practically essential. Brooklands track is, of course, right out of the question, excepting for one or two large and well-established clubs; but it is nearly always possible by enlisting the sympathy of a large property owner in the district to obtain the use of a suitable private drive. In conducting trials of this kind it is always well to realize that well-known drivers are not likely to be encouraged to come along, especially to outlying places, at any rate until the club has grown somewhat. It is, therefore, a good plan to make a strong feature of novice and strictly amateur classes, so as to bring up the entries, and receipts for entries, to an adequate figure.

Reliability trials seem of recent years to have fallen somewhat into disrepute, the number that is now successfully run by local clubs being very small. It is often possible, however, to arrange quite successful events of this kind by co-operating with two or three other clubs in neighbouring territory.

In competition work, especially, it is most desirable that every event should be made somehow or



The committee should consist of keen members who know their job and are able to attend all the meetings.

other self-supporting. Often it is possible to interest wealthy people in the locality to the extent of giving cups and similar awards, and these serve to attract entries. But to go on running events at a loss, and charging this loss up to general goodwill and advertising account, invariably leads sooner or later to insolvency.

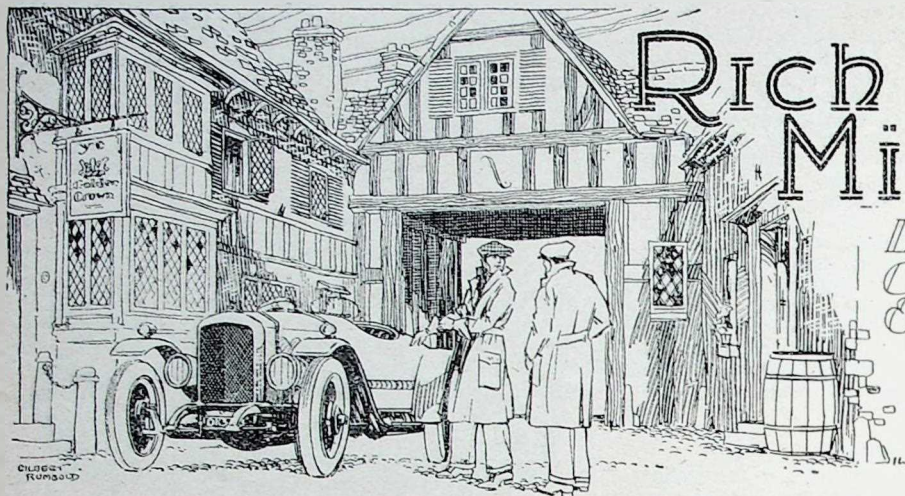
An aspect of local club life that has so far been largely neglected, but one that is worthy of serious attention, is the power of the club as a political force in local affairs. For years now motorists have looked rather to the large national organizations to get questions asked in Parliament, to bring pressure to bear on select committees and, in other respects, to watch their interests. But as forces in local affairs, local clubs, while they undoubtedly have great possibilities, have so far accomplished little.

Local Status.

A case in point came to the writer's notice a short time ago, when a letter was read before a committee from the local urban district council. In this the clerk stated that he had received complaints on the subject of noise in certain highways in the district. He went on very courteously to ask the committee to bring their influence to bear to stop the nuisance, when he felt quite sure that it would not be necessary for him to take further action in the matter. The point about this letter was that the council admitted the influence and status of the club in local motoring matters and invited it to co-operate.

The local member of Parliament will, as a rule, be influenced by an official communication from a local motoring organization in the district, whilst the repeated communications of individual motorists may leave him cold. Official communications from the club are often productive of editorials in the local Press, while communications from individuals, however exalted may be their position, do not as a rule get beyond the correspondence columns.

Of course, a strong committee is essential. It must consist not only of keen motorists, but also men of affairs in the district. Men holding public appointments and seats on district councils are particularly useful. Above all, a strong-minded chairman is needed, otherwise it is no uncommon thing to occupy three hours or more over a committee meeting, and at the end of this time to find that, while a most entertaining time has been spent, the amount of real useful work done has amounted to practically nothing at all.



Rich Mixture

LIGHT CAR
COMMENT
& ADVICE

By
Focus

Asking for It.

ONE views with astonishment the speed with which some owners overtake on wet roads at night. Recently, when facing heavy rain, which, despite a very efficient screen wiper, made driving extremely difficult, I was "left standing" by several cars, all of a certain popular make, which passed me at fully 45 m.p.h. and disappeared into the darkness of an unusually black night.

The cars were not together, and the fact that all of them appeared fairly new made me wonder whether the owners were presuming on a few months' experience and were not yet aware of the risks they ran. The road along which I was driving is notorious for its treachery when wet, yet these drivers sped along it as if they were travelling on dry concrete on a summer afternoon. No wonder insurance rates are high!

A Helpful Notice.

WHILST on a brief tour in Norfolk I could not help remarking the kindly manner in which pedestrians gave me warning of the approach of other vehicles at cross-roads. I was so impressed that I mentioned the matter to the landlord of a hotel at which I stopped for lunch, and he promptly drew my attention to a small bill hanging up in the bar.

This proved to be an announcement issued by the Chief Constable of Norfolk, who appealed for the co-operation of the public in reducing traffic accidents. The notice stated that if pedestrians who saw two vehicles approaching a road junction from different directions would hold up a hand to acquaint drivers of the fact many collisions would be avoided and danger to life and limb decreased.

Times Change.

NOW, a few years ago such a notice issued anywhere in the country would probably have been treated with something like derision by the general public. The attitude then was one of churlish indifference as to what happened to motorists—if accidents happened, serve 'em right! But the great growth of motoring, and especially the introduction of the luxurious motor coaches, has changed all that.

Millions of people now share in the delights of the open road and appreciate the difficulties and dangers of blind corners and cross-roads. Among

the younger generation prejudice against motor vehicles is absolutely non-existent, and even the infant on a scooter will automatically wave one on at the sound of a horn. Personally, I think the Norfolk notice an excellent idea which might be copied elsewhere.

Rear Blinds.

WE all want in our saloons a blind for the rear window which can be raised and lowered from the driver's seat, and we all hope that a visit to the stands at Olympia this year will make it clear that there are at least a few coach-builders who have appreciated our requirements in this respect and provided for them in some simple and straightforward manner.

I have seen Rhode and Rover saloons with spring roller blinds fixed at the bottom of the rear window and raised or lowered by a cord passing over a pulley fixed to the roof and communicating with a little toggle just above the driver's head. This plan works well and costs only about 3d. more than the usual arrangement.

The direct way to avoid the dazzle caused by following vehicles is, of course, to place the front screen at an angle, but this is not always feasible, and I am not sure that it is wholly desirable.

Coupled Axles.

ABOUT five years ago I drove a Stanley steam car of a very efficient type, and was immensely impressed with the suspension system, which felt unusual but which was extremely effective. After running from London to Folkestone over roads which then were far from good, I decided to investigate the type of shock absorbers in use, but found that there were none. Apparently a perfectly conventional half-elliptic system was in use, but a very distinct novelty took the form of hickory wood tie-bars connecting the front and rear axles.

These tie-bars were fixed to the axles, one on each side of the car, and were of circular section, about 2½ ins. in diameter. Their front ends were secured rigidly to the axles about 4 ins. inwards from the stubs, whilst the rear ends were similarly fixed about 4 ins. inwards from the brake-drum cover plates. It occurs to me that this question of tying the axles together may be worthy of discussion in the correspondence columns.

On Overturning.

ONE is often asked which way a car overturns if it is steered round a corner when travelling at too great a speed. The answer, of course, is towards the outside of the bend; on a left-hand corner the left-hand wheels lift and vice versa. It is rather difficult to see why so many people cherish the belief that the reverse is the case, as the only force which is at work is centrifugal force, and this, as we all know, acts outwards from a centre.

There are, however, amongst my acquaintances quite a number of drivers who still believe that fast cornering is likely to cause the "outside" wheels to lift and who even declare that they have felt them do so on several occasions. I wonder what has caused them to imagine this. Surely they cannot actually have "felt" a tendency for the car to capsize in the reverse direction.

After 25,000 Miles.

ONE often hears it said that the car of under 1,000 c.c., while cheap to buy and economical to run, is really an expensive investment, because the engine is not capable of giving prolonged service. This fallacy can be abundantly proved by the experience of owners of vehicles in this category, but the performance of a small Renault owned by a colleague of mine completely disposes of the argument.

He bought the car in the spring of 1925 and it has just completed 25,000 miles. A busy man, he has not been able to give the car more than the minimum attention necessary for maintenance, but in all this time it has never given the slightest trouble. It has been driven hard over long distances and in some of the most difficult country in England and Wales, yet the only expense has been for decoking, petrol, oil and tyres. For repairs the bill has been entirely blank.

Having driven the car a distance equal to the

circumference of the earth the owner, as a precautionary measure, had the engine completely dismantled and the rest of the chassis examined, and the experienced firm to whom he entrusted the job report that except for the valve guides there is no real need for renewals. Who could wish for better service than this?

Wet-weather Vision.

THE opinion is still held by many well-informed people that the ideal means for keeping a wind-screen clear in wet weather has still to be evolved, and there is undoubtedly a good deal of truth in their contention. The principal complaint made concerning the conventional pattern is that in wet weather the arc which it cleans is not sufficient for safety when the car is being driven along lighted streets, and this is certainly true in the case of cars with windscreens which are some considerable distance in front of the driver. With a screen fairly close to one's eyes, however, I find that a 6-in. squeegee wipes a sufficiently wide arc to give an ample range of vision, and I hold the opinion myself that a windscreen close to the driver is much more valuable than a complicated wiper designed to counterbalance the evil effects of thoughtless body design.

At Ashridge.

PASSING through Ashridge Park a few days ago I came across a motorist from the South hopelessly lost. He had been exploring the by-roads among the heaths and woodlands and was vainly endeavouring to find a way back to Watling Street. His plight calls attention for the need of more adequate signposting in this public playground, which, with additions recently purchased for the National Trust, now extends to some 2,000 acres. Clear signs showing the way out of the maze to the two main roads to London are urgently required.



AT THE GATEWAY
TO WHARFEDALE.

One of the many attractive spots near Bolton Abbey en route to Wharfedale. The Duke of Devonshire's shooting box is shown.

I was sorry to see, too, that with the increasing popularity of Ashridge the roads are falling into a bad state of repair—motor coaches and other heavy vehicles being chiefly responsible. The road round the Beacon has been ploughed into most alarming ruts which need very careful negotiation. By the way, what an extraordinary attraction this area will exert when the Zoological Society's project for establishing an open-air Zoo, with animals roaming amid natural surroundings on the adjoining Dunstable downs, is completed! The new Zoo will be only about 35 miles from Regent's Park, and one can imagine the popularity it will enjoy.

Dual Control.

WHEN an A.A. scout or R.A.C. man is standing at a road intersection and a policeman is there as well, which is one to obey? I recently received directly opposed signals at a busy traffic centre, and because I followed that of the A.A. man, who seemed to be there specially for the purpose while the policeman was not, the latter seemed very wroth about it.

Of course, the police officer has the authority of the law behind him, but it seems to me that there should be no room in these circumstances for doubt as to who is in control of the traffic. Fortunately, one does not often meet such instances, for, as a rule, Robert is quite content to stand by and see the civilian doing the work.

More Wheels and Woes!

I CAME to the rescue recently of a motorist who was trying to perform the simple (?) job of changing a wheel. His car was practically new and, when I came on the scene, he was endeavouring to withdraw the "spare" from the studs on the carrying bracket. It required our united efforts to get it off, and, after quite five minutes'

labour, it came away so suddenly that my fellow wayfarer received from the balloon tyre a blow on the jaw reminiscent, as he observed, of Gene Tunney in playful mood; but the fun had only just commenced.

To cut a long story short, another ten minutes were taken up in persuading the wheel to slide over the studs on the hub. I, personally, blame the manufacturers for this sort of thing, and I consider that it should be the business of the road-testing department to make sure that wheels go on and off easily by actually carrying out the job before the car is passed into the delivery bay.

80 m.p.h. on the Great North Road.

THERE was a curious drumming in my ears. The atmosphere behind the windscreen seemed to have become insufferably close. Excitement, I thought. Then with a sleek, smooth motion I was speeding off along the Great North Road. Forty, fifty, sixty—"What do you say to this?" I belted to my companion, who had dared to doubt the capabilities of the bus.

Telegraph poles and trees flashed past amid the blur of the hedges and wayside grass. Now the speedometer needle was flickering over seventy. Would she just touch eighty? Down a long tunnel of trees we skimmed, the engine roaring like a Brooklands racer. Oh, the intoxication of the moment! Nothing I had experienced before could equal it. A few seconds more and there it was at last—eighty!

Sunlight and the bare, open road again, and suddenly—whatever was this? The road, the car and my companion had gone, and I was blinking at the two dental surgeons to whom under the influence of gas I had submitted my long-suffering jaws for an overhaul! "How are you feeling?" quoth one. "Fine," I replied; "I've just broken all existing records on a 10 h.p. — 'ell, we've certainly been treading on the was the retort.



AT BRIDGNORTH,
SHROPSHIRE.

Interesting in the extreme, approached by steep inclines and overlooking the Severn, Bridgnorth (135 miles from London) provides an excellent venue for a day's run or a week-end jaunt.

MIDLAND OFFICES:
BIRMINGHAM: 16, Bennett's Hill.
Phone: Central 2672-3.

COVENTRY: 6, Warwick Row.
Phone: Coventry 4775.

NORTHERN OFFICES:
MANCHESTER: 274, Deansgate.
Phone: Central 5433-4.

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New Models.

WE announce in this issue that it is the intention of one of Coventry's largest car manufacturers, a concern which is well known all over the world, to re-enter the small car field with a 9 h.p. model. The make in question has not been represented with a light car for a year or two, its withdrawal from the market was a disappointment to thousands who had owned the cars and enthused over them, and the new model can be sure of an excellent reception. It is now fairly common knowledge, however, that it is not likely to be the only newcomer in the 9 h.p. class. Rumour is busy with other names and experimental models of famous *marques* are on the roads.

In *The Light Car and Cyclecar* dated October 15th, 1926, we wrote:—

... we believe that by next year potential buyers—and there are vast numbers of them—of small and truly economical cars will have a much wider choice than they have to-day.

All the indications are that our prophecy will be fulfilled, and fulfilled, furthermore, in a most satisfactory manner, for it will be the names of long-established manufacturers with valued reputations for honest workmanship, materials and service that will be on everybody's lips when the doors of Olympia open to show the public the light cars of 1928. Meantime, our readers may depend upon us to keep them accurately informed with regard to the new developments.

Standardize Police Uniforms.

SO much depends nowadays upon the ability of road users instantly to recognize a policeman that we think there is a strong case for the standardization of police uniforms. In our centre pages we present a selection of photographs which show how uniforms vary widely in different parts of the country, and it should be obvious from these that a motorist setting out—say, from London—on a comprehensive tour will pass through towns and counties where the clothing of the constables varies considerably. The difficulty is made even greater because police garb is very different in summer from what it is in winter, whilst the addition of white armlets or other auxiliaries, so as to make signalling plainer, serve merely to complicate an already somewhat obscure position. It

"THE LIGHT CAR AND CYCLECAR" WAS
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
FOURTEEN YEARS.

NO CAR WITH AN ENGINE CAPACITY
EXCEEDING 1,500 C.C. (1½ LITRES) COMES
WITHIN THE SCOPE OF THIS JOURNAL,
THAT CAPACITY BEING GENERALLY
RECOGNISED AND ACCEPTED AS THE
LIMIT FOR A LIGHT CAR ENGINE.

would be fairly safe to say that the Metropolitan Police are the most efficient and most experienced body of men in the world, and we suggest that the methods they adopt should be taken as an example and acted upon all over the country so as to bring the Force of the Kingdom into line. Perhaps some means of identifying the district to which a policeman belongs is necessary, but this is already accomplished quite well by the use of

different badges. The need for standardized police uniforms extends to every form of duty in which a policeman may be engaged, and we trust that the anomaly of a point-duty man in a white coat and white helmet operating within a few miles of one dressed in an ordinary tunic with white armlets or some other equally striking contrast in dress will soon be impossible. A Londoner in many parts of the country might at present mistake a constable for a water board, tramway, telephone or omnibus employee.

Better and Safer Roads.

AN authority on roads and road-surfacing materials contributes some very interesting facts in this issue concerning the progress which is being made in the construction of roads which are not only skid-proof but which, it is calculated, will stand up almost indefinitely to the wear and tear caused by the ever-increasing volume of traffic which they have to bear. This is good news, for motorists are getting just a little tired of seeing their money expended in ambitious schemes which are not nearly so successful as they promised to be.

With road-making, the first cost should be, so far as possible, the last, and for this reason motorists will not grudge vast sums spent on resurfacing and so forth, providing that the result comes up to their expectations; but this it must do. For example, what is the use of a road built to last a century if it still provokes skids and makes driving a nightmare? At present there are many experimental stretches of highway undergoing test, and it is to be hoped that local authorities all over the kingdom will get together and collect all the available evidence with a view to agreeing on the ideal foundations and surface. Only by collaboration of this sort can we be sure of obtaining value for our money and safety at the wheel.

THE

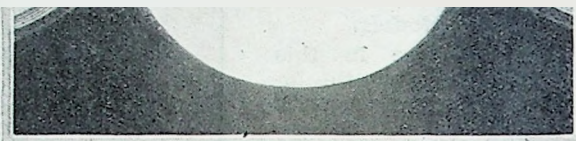
WHAT THE AMMETER SHOWS—HOW TO REMEDY FAULTS THAT ARE INDICATED —THE WORKING OF THE INSTRUMENT.

SO soon as a fault develops in the electrical system of a car the owner, even although he has long since passed the novitiate stage, is apt to blame the ammeter. Actually, however, this very useful instrument is most unlikely to be the cause of the trouble; it is merely recording the fact that there *is* trouble somewhere in the circuit.

The term "ammeter," nowadays, is a misnomer; the instrument is only infrequently used as a measurer or meter of current, its chief purpose being merely to indicate that all is well with the dynamo, battery and other parts of the electrical outfit of a car.

In fact, in certain types of switchboard equipment the ammeter is dispensed with, a simple form of tell-tale lamp showing that all the components are functioning as they should. It is an advantage, however, to have some means of indicating between the extremes of "on" and "off," for, while the tell-tale lamp will be lit up if trouble of any sort arises, the needle of an ammeter might show that total disconnection has not occurred, and a clue may be given simply by the reduced reading of the instrument.

It is most inadvisable for an amateur to dismantle the ammeter in his instrument board in order to see "how it works," but it may console him to know that, despite the watch-like accuracy of the instrument, its principle of working is extremely simple. Behind the dial is a small coil of thick wire, in the hollow core of which moves an armature attached to a spindle upon which the needle is pivoted; when current passes round the coil the induced magnetism attracts the armature, the deflection of the needle depending upon the strength and direction of the current.



One other puzzle which the meter presents—namely, that the use of the starter is not registered on the dial—is simply explained. The meter is, in most cases, connected in the main positive lead to the car battery. Current coming from the charging dynamo and passing out to the lamps is thus able to deflect the needle. Owing to the fact that the momentary current required to turn the starter motor may be as much as thirty times the normal charging current, the ammeter would have to be of very large size safely to carry the extra load; furthermore, no useful purpose would be served by indicating the amount of current flowing. For these reasons, therefore, the motor and switch are connected in a separate circuit wired up with heavy cable direct from the battery.

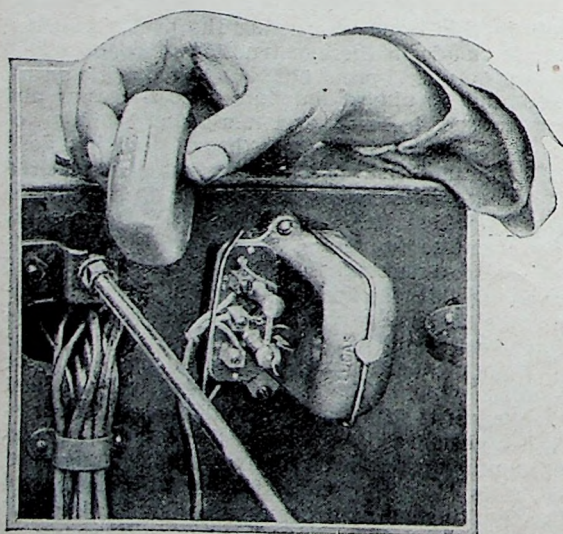
A close study of the working of the ammeter will prove instructive. Start the engine and turn on all the lights. Whilst the engine is turning over slowly the ammeter needle will record a fairly high discharge, according to the capacity of the bulbs in use.

Charge and Discharge.

Open the throttle gently and note that at one point the needle flicks back as the cut-out closes and allows the dynamo to make good the discharge caused by the lamps; as the throttle is opened wider the needle will swing still farther round the dial until it indicates the maximum charge reading minus the amount of current taken by the lamps. As an example, if the charging rate is 8 amps. with the lamps off, and if the bulbs take 6 amps. between them, the full charge indicated with the lamps in circuit will be 2 amps. Turn off all the lamps and note that, with the engine still running fast, the needle records a steady charge, which does not vary appreciably—that is, if the electrical system be in good order—with an increase of engine speed. As the throttle is closed and the engine slows down the ammeter needle will swing slowly back until, when the cut-out comes into operation, it flicks suddenly back to zero.

As the meter thus records every variation of current flow in the lighting and charging circuit of the system it should not be difficult to trace trouble if the needle remains at zero when the dynamo is running at charging speed, or if an unusual charge or discharge is recorded.

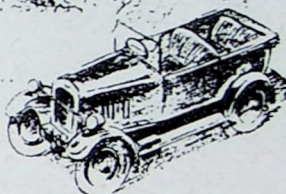
Wiring diagrams are published by all electrical equipment makers, and if the connections shown in the instruction book be followed a complete "break" due to a loose lead may easily be traced. The fuse-box should be examined immediately a fault is indicated, but remember that if a blown fuse is found to be the cause of the needle remaining stationary it may also be an indication of trouble elsewhere. Check the wiring carefully, particularly at the battery lugs, before replacing the fuse, or more serious trouble may result.



The fuse is one of the first points which should be examined when the ammeter fails to show even the smallest charge.

TROJAN *happy families*

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B29

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FIRST MEETING OF THE CYCLE-
CAR CLUB—AIMS AND OBJECTS
—THE COMMITTEE—MEMBER-
SHIP FEES—NEXT SEASON'S
PROGRAMME.

AS I predicted last week the preliminary meeting of The Cyclecar Club proved to be an unqualified success. An encouraging number of prospective members turned up, and at the end of the meeting every one of them filled in an application form for membership.

At the start of the proceedings the hon. secretary, Mr. W. E. A. Norman, explained the events which had led up to the meeting being called and read several letters from people who were unable to be present. A very interesting communication was received from Professor A. M. Low, who stated that he was fully in sympathy with the aims of the club and was quite prepared to lend his aid in furthering them. Subject to his being willing to serve in that capacity he was unanimously elected chairman of the club.

The proposed title of the club aroused a great deal of discussion, and those present at the meeting were invited to make suggestions.

Mr. H. Beart formally proposed The Cyclecar Club, his proposal being seconded by Mr. G. C. Harris. So many other suggestions were then made that it was found necessary to vote by ballot, with the result that The Cyclecar Club won by a working majority. Other titles suggested were the Economy Car Club, the Light Car and Cyclecar Club, the 1,100 c.c. Club and the 1,100 Car Club.

It was made clear by the chairman that membership of the club would be available to anybody regardless of the size or type of car owned; in fact, actual ownership of a car was not necessary. So far as racing and competition events were concerned participation in these would be limited to vehicles having an engine capacity of not more than 1,100 c.c.

The existing rules of the governing bodies will, of course, be adopted, and supplementary rules,

if required, will be drawn up by the club. Whatever is arranged it may be taken for granted that the encouragement of three-wheeler and four-wheeler racing will be the main object of the committee nominated to deal with the matter.

The next item on the agenda was for the chairman to explain that the club had the power to appoint a number of members to serve on the committee. He then read out the names of those who had already been nominated and asked for further nominations, with the result that a very strong committee was forthcoming, and although all those who were nominated were not present, it was learned that the great majority of them had signified their willingness to serve.

The officers of the club are as follow:—

President:—H. F. S. Morgan.
Vice-Presidents:—W. J. Green,
W. A. Weaver, H. Beart, S. A.
McCarthy, Bernard Jones.
Chairman:—Professor A. M. Low.
Hon. Secretary:—W. E. A. Norman.
Hon. Treasurer:—J. Yule.

All of these are ex-officio members of all committees.

As the club proposes to cater for all tastes, a very careful selection has been made of the committee-men, who will deal with the trials, racing and social sides of the club's activities, and I think it can be taken as a sure indication of the fact that the right men have been chosen in their respective capacities when I mention that amongst others on the Trials Committee are Messrs. S. A. McCarthy, R. A. Martin, G. C. Harris, A. C. Maskell and E. L. Forge, whilst the racing committee numbers amongst its members Messrs. H. Beart, J. J. Hall, E. B. Ware, Capt. A. Frazer Nash and Mr. G. E. Tottey; it is hoped that Mr. George Newman, Mr. Vernon Balls and Mr. Boyd-Carpenter will also associate themselves with this committee.

Various members of the erstwhile Morgan Club with considerable experience in the running of social events have been co-opted to the social committee, amongst these being Messrs. J. W. Barr Hamilton, F. H. Rayner and E. E. Sanders, whilst in addition Mr. G. E. R. Nicholson, secretary of the Belsize-Bradshaw Light Car Club, and Mr. N. Barwell, captain of the Austin Seven Club, have signified their willingness to serve on the social committee.

Although the time is rather short it is hoped to arrange some events to take place this year, but in any case there will be a dinner at the Hotel Cecil on Thursday, December 8th, which will give members a chance to meet and get to know each other under pleasant conditions. Incidentally, the entrance fee and subscription for membership of The Cyclecar Club are 7s. 6d. and 10s. 6d. respectively, the annual subscription being from date to date. It is possible that these figures may be revised before long, so that all who are anxious to do so should join without delay.

The address of the hon. secretary, Mr. W. E. A. Norman, is 422, Upper Richmond Road, London, S.W.15, whilst that of the hon. treasurer, Mr. J. Yule, is Kirkney, High Road, Whetstone. Application forms for membership can be obtained from either of these addresses.

The committee will have a very busy time during the coming weeks, because it is necessary already to consider next season's programme and to draw up a full set of rules and regulations. As no motoring club is complete without a badge the question of designing one suitable for The Cyclecar Club is receiving attention. A number of attractive designs will be submitted shortly to the committee and the final choice should not be difficult. Further news of the club will appear on this page next week.

STANDARDIZE POLICE



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Irish
Constabulary
Officer



York

"Robert" as He
is Dressed for
Summer and
Winter Duty.



Edinburgh



London (Winter)



Merioneth
Constabulary



These photographs show that there is a marked difference in the uniforms worn by "the force" up and down the country.

AUGUST 26, 1927.

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THE Light Car
AND Cyclecar



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We welcome letters for publication in these columns, but take no responsibility for the opinions expressed. No anonymous communications will be accepted, but writers may use a nom de plume. To ensure publication in the next issue letters should be addressed to the Editor, "The Light Car and Cyclecar," 5-15, Rosebery Avenue, London, E.C.1, and should reach us on Monday. We reserve the right to make any alterations or deletions which we deem necessary. Please write only on one side of the paper and leave a wide margin.

LONGEVITY OF MORGAN REAR TYRES. Standard and Replacement Cover Mileages.

12,000 Miles Without Pumping.

In your issue of August 5th, "PF 6673" asks to be recommended a tyre that will stand up to hard wear on the back wheel of a Morgan. On my Grand Prix Morgan, which

Is This a Record?

I bought second-hand in 1925, I have a Rapson super cord 710 mm. by 90 mm. tyre (guaranteed against everything) on the back wheel. I had to pump it up on August 1st, 1925, owing to the valve leaking, and from that day I have never had the need to use a pump on it, and I have covered over 12,000 miles in all weathers.

I have yet to experience my first puncture in the back tyre, but have had several in the front ones. Your readers will agree that this is a remarkable performance for the back tyre of a Morgan, also that it speaks well for the quality of Rapson tyres and Schrader valves. CT3090.

Oversize Rear Covers.

My experience with my new Aero-Morgan with an o.h.v. J.A.P. engine, delivered at Easter this year, may be of interest to those of your readers who experience abnormal tyre wear on the rear wheel. I should

Useful Hints.

explain, first, that the engine has been hotted-up to an extent so great that on a loose-surfaced road I often suffer from wheelspin. This would, on the face of it, shorten the life of the tyre to some extent.

The tyres fitted to the car when new were Dunlop s.s. cords, 26 ins. by 3½ ins. The rear tyre was discarded after 6,000 miles, as the greater part of the patterned tread was very thin. It was intended to put this on a front wheel at a later date. The replacement was a Kelly Springfield balloon, 27 ins. by 4.40 ins. Prior to going away on my annual holiday this tyre had done about 2,000 miles without appreciable wear. I set off for a fortnight's "rough stuff" at the end of June, and after a week had to put on the old Dunlop cover which I had taken with me as a spare, as something had split the tread of the Kelly tyre all round. The Dunlop cover then ran for a further 1,500 miles without additional wear being noticeable.

The General Motor and Tyre Co., from whom I purchased the Kelly tyre, generously made me an allowance in proportion to the wear the tyre had had, and I then got from them another Kelly balloon, this time a 28-in. by 4.95-in. This is wearing excellently, and I expect to get 10,000 miles from it. Your readers may be interested to know that this is the largest tyre that can be fitted to the Dunlop 26-in. by 3½-in. s.s. rim, and the comfort and wheel grip that it affords are excellent in every way.

B34

As an instance, I may mention that on the Sunday preceding Bank Holiday I ascended Lynton Hill without a hitch, in spite of the fact that the hill was covered in thick grease from side to side and soaking wet. Everyone told me the hill was impracticable for a Morgan owing to its slipperiness, but absolutely no trouble was experienced, although I was baulked at the hair-pin by a descending car. I had to stop, but was able to restart without assistance.

The precautions to take are few, but important. Keep the clutch in good condition, the chains as tight as practicable, the rear wheel truly centred in the forks, and do not take corners quickly if the tyre is soft. Fast cornering on a hard tyre does not seem to wear it, but if the tyre is inclined to be soft it is fatal. A driver indulging in conventional touring ought to get 50 per cent. more mileage than I do, unless he is a poor driver, and I have come to the conclusion that tyre wear is in direct proportion to the driver's abilities, unless, of course, abnormal conditions set up abnormal wear. I have experienced no punctures in 11,000 miles, and the original front covers are still reasonably good.

The J.A.P. engine is beyond praise. Top-gear range is from 10 m.p.h., without snatch, to somewhere in the eighties. The most I have done is 82 m.p.h., at which point my courage proved weaker than my enthusiasm, and I had to close the throttle, although it was only three-quarters open.

H. A. HARTLEY.

Only One Puncture in 7,000 Miles.

As a regular reader of your journal, may I be allowed to endorse the opinion of "PF 3040," expressed in his letter which appeared in your issue of August 19th? I have

Good Mileages Possible.

driven a 1927 side-valve water-cooled J.A.P.-engined de luxe Morgan 7,000 miles during the past seven months on 26-in. by 3½-in. Dunlop s.s. cord tyres and have experienced only one puncture, a 4-in. nail which somehow became rammed vertically through the back tyre. The original tyres are, of course, still in use; those on the front wheels are hardly worn, while the rear one is just beginning to lose its tread. I attribute these results to first-class material and correct inflation.

I would add that I am a motorist of some 50,000 miles' experience, and among many long journeys I have undertaken I recently drove my Morgan from Chatham to Liverpool, a distance of close on 250 miles, in pouring rain, in 9½ hours, including stops.

For its all-round performance, reliability and comfort, compared with cost of upkeep, the Morgan is ideal for a man of moderate means.

KMS790.

GREAT PUBLIC AUCTION SALE of CARS

**Mostly Without
Reserve.**

**Easy
Payments.**

Nearly 100 Cars.

**Special
Facilities.**

Starting at 3 p.m. on Monday next, 29th August, the vast selection of fine cars, not sold before, will be offered by Public Auction at 7/13, Upper Gloucester Place.

Only a few of the cars have reserves on them—the others will definitely be cleared irrespective of cost.

There will be nearly 100 cars in all, and easy payments will be accepted by arrangement.

The cars are now on view and include—

FIAT, $\frac{3}{4}$ Coupe, 1926.

ALVIS, 1927, Sports Saloon and Weymann.

ALVIS, 1926, Saloon, 5-seater, 2-seater and Sports.

ALVIS, 1924, 2 and 4-seaters and Sports models.

TALBOT, 1926, 10/25 h.p. Saloon and Coupe.

AUSTIN, 1926, 7 h.p. Chummy. 1924, 7 h.p., 2-seater.

ROVER, 9 h.p., 1927, 2-seater Sports.

Also Large West End Garage Premises.

At 12 noon prompt on Monday, as above, the extensive and modern garage premises at 7/13, Upper Gloucester Place, no longer required by Henlys, will be offered for sale to the highest bidder. Building in first-class repair; accommodation 150 cars; excellent offices; repair shop; paint shop; petrol pump, and good flat, etc. Situation unique. As a garage, it is a real "money-maker." Full particulars by return.

SWIFT, 1927, 10 h.p., 2-seater, also 4-seater and other models.

FIAT, 1926, 9 h.p., 4-seater.

RENAULT, 1925, 9 h.p., 4-seater.

SINGER, 10 h.p., 1926, 2-seater.

PEUGEOT, 6'4 h.p., 1925, 2-seater.

SWIFT, 1926, 8'9 h.p., 2-seater.

WOLSELEY, 10/22 h.p., 2-seater, Shop-soiled.

CLYNO, 1925, 11 h.p. Saloon.

SINGER, 1926, 10 h.p. Saloon.

AND MANY OTHER FINE
CARS TO CHOOSE FROM.

Auction lists of cars are ready now. Send for your copy immediately, or call and see the cars for yourself.

ALSO

the only supply of D.F.P. Spare Parts in the country, from 1909-1917 inclusive. Parts include crankshafts, pistons, gudgeons, gear and axle parts, etc., and one or two other lots of spares, etc.

To be sold separately, or as a lot, without reserve, at 2 p.m. on Monday, as above.

HENLYS

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July 31st, 1927.

1st. Benoist
DELADE

2nd. Conelli
BUGATTI

3rd. Fourlier
DELADE

—all used CASTROL!

J.C.C. Sporting Car RACE

August 13th, 1927.

1500 c.c. Class.

1st. C. M. Harvey
ALVIS Special

2nd. C. N. Green
ALVIS Special

3rd. R. M. Sutton
LEA-FRANCIS
Special

1100 c.c. Class.

1st. G. Newman
SALMON
Special

2nd. J. C. Douglas
SALMON
Special

—all used CASTROL!

Speed Records

(Subject to confirmation).

At Brooklands, on August 9th, Mr. J. R. Cobb, driving a VAUXHALL, broke the following International World's Records in Class D:

5 Miles .. 111'83 m.p.h.

10 Kms. .. 111'69 m.p.h.

—using CASTROL!

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Albeit an oil of super quality, Wakefield CASTROL will mix perfectly with other brands of lubricating oil; naturally, also, one grade of CASTROL will mix with another. CASTROL "R" (Racing) only is excepted, and should not be mixed with any other oil or any other grade of CASTROL.

The full benefits from the use of Wakefield CASTROL will not, of course, be experienced unless 100% CASTROL is in use, but after your sump has been replenished a few times with CASTROL this desirable state of affairs will be achieved.

Follow the lead of the World's Experts and the advice of over 200 Leading Motor Manufacturers: insist on —



— the Product of an All-British Firm.

C. C. WAKEFIELD & CO., LTD., Wakefield House, Cheapside, London, E.C.2.

WHEN REPLYING to advertisements, mention "The Light Car and Cyclecar." It helps the advertiser and you, and assists the small car movement generally.

OUR READERS' OPINIONS (contd.).

The Warming-up Problem.

I have read with interest the remarks by "Focus" and the subsequent correspondence upon the subject of warming-up. I had this difficulty last winter and I found that a thermostat seemed a very simple and easy way to deal with it. It allows the engine to warm up quickly, and once the water is warm it offers no restriction to the proper flow. It seems a simple, cheap and easy way of dealing with the matter, and, as it is automatic, it is surely better than depending upon one's memory to do the right thing.

Automatic Control.

S. F. EDGE.

Controlling Water Temperature.

I am most interested in the suggestion made by "Focus" that valves might be inserted in the cooling system as applied to ordinary motorcars. It is, of course, quite common to fit thermostatic control so arranged that the flow is made proportionate to the water temperature. By this means the jackets are kept at a temperature considerably higher than would otherwise be possible. In the case of thermo-siphon circulation the smallest interference with free flow is liable to cause trouble, and I believe that the valves might not operate sufficiently freely. It would not be easy to design the jackets in such a manner that steam can be formed without the risk of pocketing, and it must be recollected that the waste heat is not always in proportion to engine speed, so that the control by rate of flow would seem to be less desirable than direct operation in accordance with temperature.

Thermostats Advocated.

The system might be combined with some method of steam raising, and is certainly an important suggestion in view of the number of experiments now being made with chemically treated water, oil or even mercury—all with the object of saving some of the lost heat.

I think the moral is that modern car engines, under the ordinary system of carburation, burn fuel in a manner unsuited to traction, and are at a disadvantage when compared with a power plant operating upon the main Diesel principle.

A. M. Low, A.C.G.I., F.C.S., etc.

Oiling System Design.

I suggest that the answer to the question put by "Focus" regarding the ideal oil pressure for force-feed systems of lubrication is that it does not depend upon the whim of the individual designer except in so far as he decides the type of lubrication for the engine. Efficient lubrication depends not on the pressure, but on the amount of oil reaching the required positions, and the pressure necessary to effect this will depend upon the diameter of the oil passages and the extent to which they are tortuous. If the big-ends are lubricated by oil passing under pressure through small and tortuous passages drilled in the crankshaft, it obviously requires a much higher pressure to force the oil home than is necessary in the case of an engine the big-ends of which are lubricated by "splash," in which case the oil pipes are of bigger diameter and simpler in construction.

Something, too, depends upon the viscosity of the oil used, an oil of high viscosity requiring a higher pressure to force it through a given opening than would be necessary for a less viscous oil.

YF336.

Small Cars Criticised.

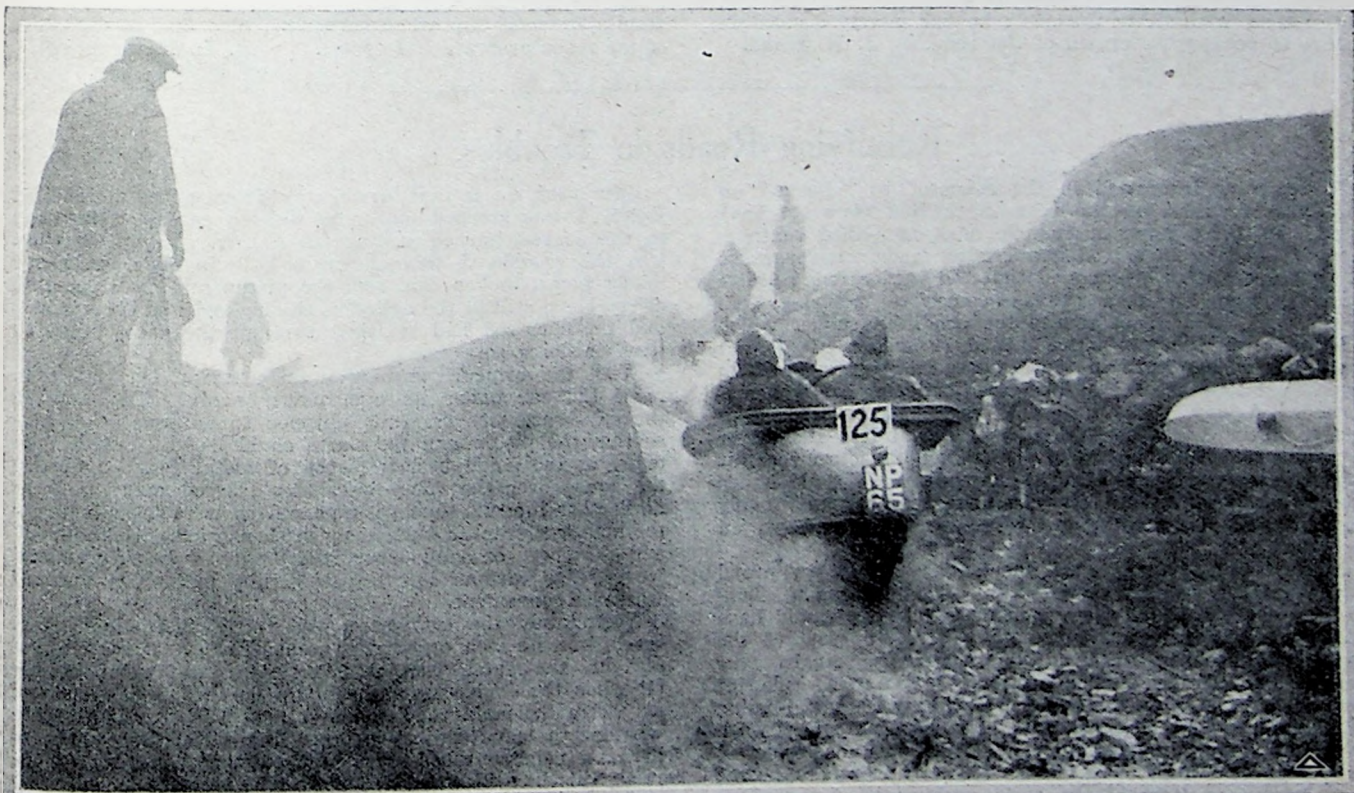
I do not drive a light car, but I always take in the journal primarily intended for those who do, and therefore I hope I may be excused the presumption of this letter. I write on a point of rather an intriguing nature. Why do small cars hold the crown of the road as tenaciously as they generally do? I am

Road-holding Qualities.

afraid that the other day I was so rude as to pass a small car on the near side, but then the driver seemed to be fresh from the Continent, or he had forgotten which was his right and his left. Perhaps these nice little prams might bounce off the road altogether if driven too much on their proper side. But they can go, as I passed one doing 50 m.p.h. the other day!

People are getting too fond of the middle of the road. I drive a car that is nearly 6 ft. wide, yet I flatter myself that an overtaking driver never hoots to pass me. Strange, now, but on a narrow road I would sooner have a heavy car than a light one ahead of me!

JOHN ARTHUR FLETCHER.



A ROUGH PASSAGE!

The bad surface of Wrynose, one of the hills included in the International Six Days' Trial, caused the competitors much discomfort. Only two Morgans figured in the trial and both completed the course, but did not gain an award. The photograph shows W. A. Carr nearing the summit of the hill in pouring rain.

OUR READERS' OPINIONS (contd.).

Keeping to the Left.

I was very much interested in "W.T.R.'s" letter in your issue of August 19th. In my humble opinion he ought to have left enough space between himself and the cyclist for the overtaking car to cut in if baulked. I drive a fast car, but I am a cautious man after 45 years of cycles, motor-cycles and cars, and invariably if a driver shows a desire to pass me I pull in to the near side as far as allowed by pot-holes and slow slightly at the moment of being overtaken.

Why is it that motorists are so blind as not to see that by travelling in packs close upon each other's tails they are not only endangering their own and other people's lives and property but preventing the road being cleared for them by the trailing out and separation of the faster and slower cars? At the risk of being tedious may I praise the sense as well as the courtesy of the man who, when seeing two cars approaching him, steers to the near side as far as he can when one of the two approaching cars is obviously attempting to overtake the other?

E.P.

Passing on a Corner.

The letter from "Air Cooled" in your issue dated August 19th would almost be amusing were it not so serious. He first makes it quite clear in his letter that he was attempting to pass on a blind left-hand

An Indefensible Practice. bend, a procedure which is inexcusable, providing the vehicle in front is moving at all. Because the steam wagon in

front moved in to the left—as any vehicle should, safely to negotiate such a bend—"Air Cooled" took the movement as a sign that the road was clear to pass.

The inevitable accident having occurred, he then rushes into print and tries to put the blame on your golden advice of "Keep to the left," why, it is impossible to say, because, had he kept to the left, the accident could not have occurred.

Not satisfied with that, he hurls abuse at the motorcyclist, because, while travelling on his own side of the road, he did not pull up soon enough to avoid a crash. An ordinary individual would regard the accident as a sound warning never again to attempt to pass on a blind turning, but not so with "Air Cooled": he has merely decided in future to occupy the crown of the road.

J. H. HARE.

I was very interested in the comment by "Focus" on rectifying troubles on the road in the old (but not bad) days. In these days of reliable cars, simplified controls,

"The Good Old Days."

tarred and graded roads, ample garage accommodation and service, it is possible that the newcomer to motoring does not realize the conditions under which old-timers in the "nineties" used to motor. It is not too much to say that in those times every driver was an expert—at least, so far as his own particular car was concerned. A day without trouble was something to boast about, whilst when trouble came it was up to the driver to devise ways and means of continuing his journey or, at any rate, getting back home. Consequently, the old hands became very skilful in circumventing trouble, and many ingenious repairs and adaptations were often effected on the road.

I could tell of many such incidents, as it is my proud boast that for over 25 years I have only once had to abandon my car. Most of these incidents, however, would have little or no bearing on present-day cars, in view of the great advance in design and materials. Again, the innumerable garages now adorning (?) our roads rule out such cases as stuffing the tyre cover with grass and binding with string when the last tube gave out. Garages with tyres and spare parts of all kinds make it unnecessary to carry a large "junk" box, which formerly was perhaps the most important item of the car's equipment. I remember how a piece of thick rubber was once used to make a universal joint and drive for a water pump when the metal coupling between the two forks was discovered to be missing. This idea surely anticipated the Hardy flexible coupling now so common on propeller shafts!

B38

A G.N. in Gibraltar.

I think the following facts about a G.N. may be of interest to other owners:—I picked up a 1921-22 model which was brought here by an army officer and sold to a Spaniard, from whom I bought the car last November. Except for a new cylinder head, no replacements were needed, and the car has travelled some 6,000 miles over inferior Spanish roads since then. It is capable of 48 m.p.h., and over most of the distance mentioned has carried three passengers. Recently I drove the car to Malaga and back in a day (a trip of nearly 200 miles) without mishap, and this with three up.

The hill-climbing abilities of my G.N. car are wonderful; it conquers quite steep gradients in second speed, and in



The younger generation in a Spanish town display a great interest in the G.N. which forms the subject of the accompanying letter.

bottom I think it would climb almost any test hill. Despite the considerable heat in this part of the world, I have never had a stop due to overheating! Incidentally, I should be glad to know the average m.p.g. of a 1921-22 G.N.

The only trouble has been heavy wear on the back tyres owing to the back axle being without a differential. This results in some slip when cornering, also due to the state of the roads over which I travel.

R. L. RAVENSHAW.

Rectifying Roadside Troubles.

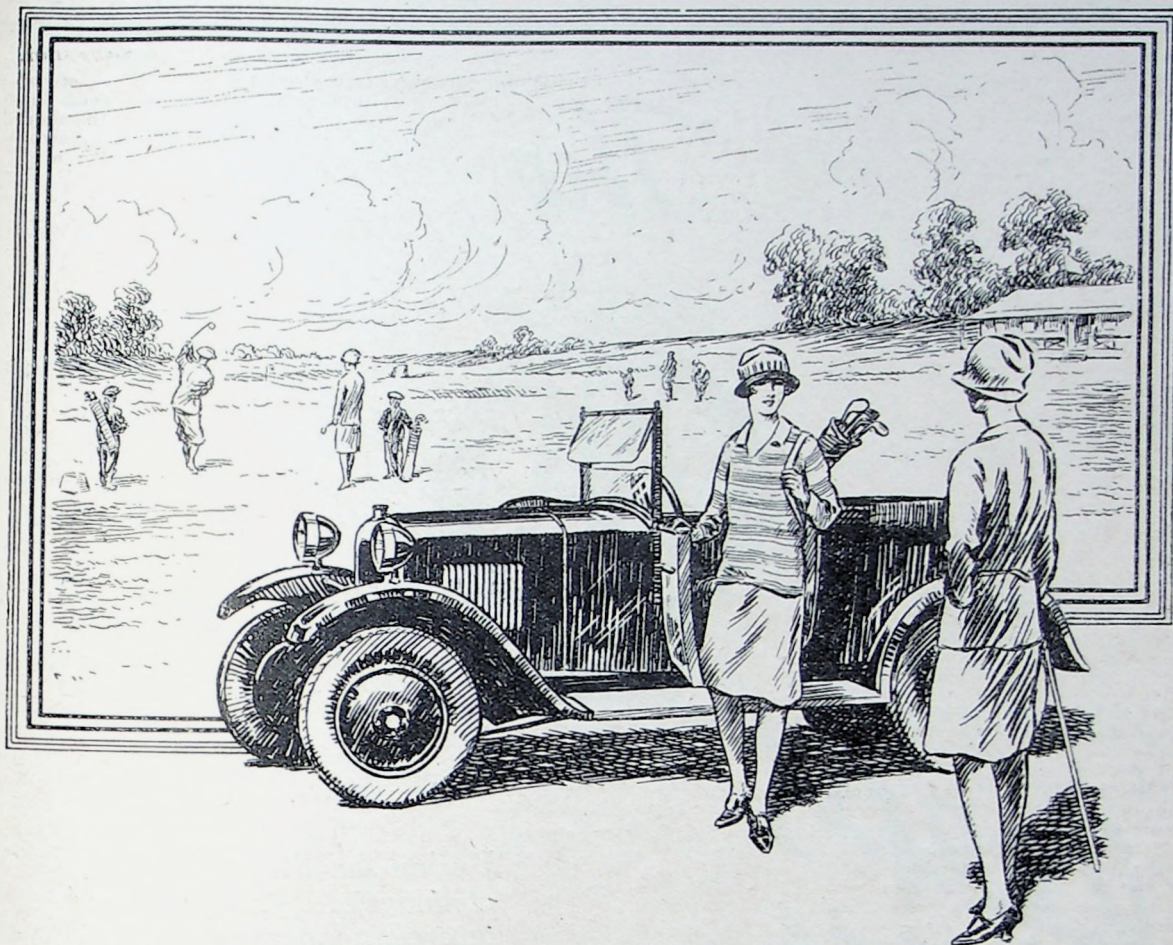
Last year, in a lane some way from a main road in Essex, I was stopped and requested to convey a message to the nearest garage, asking for a tow. Inquiring what was the trouble, I was shown a hole in the crankcase; inside was a broken con. rod, the piston and small portion of rod being still in the cylinder, the big-end had come adrift and the con. rod had smashed through the case, breaking itself in doing so.

With the owner's permission an attempt was made to move the car under its own power again. The hole in the crankcase was carefully chipped to enlarge it slightly so that the piston and rod parts could be withdrawn. As many of the small broken pieces of metal found lying on the gauze over the sump were also cleared away, and as no further internal damage appeared to have been incurred the hole was patched outside by leather (part of a tool-roll) and the cover of a cigar-box, the "patch" being tied and wedged by various lengths of string and wire secured wherever convenient.

Fortunately the crankcase was fairly flat where fractured, and no web or bearing was affected. Although not oiltight, the patch was sufficient to retain most of the oil when the engine was started up on three cylinders and driven to the main road, where I left the owner uncertain whether to leave the car at the first garage or return to his own neighbourhood some miles distant. Perhaps if he reads this he will write and relate the sequel.

Of course, in the old days we should have fitted a new con. rod, etc., and patched the hole with a copper plate properly shaped and riveted to the case and thought no more about it, but in these days of mass-production and "spare parts always available" a new case or a welded repair would naturally be indicated.

B.S.



Always a part of the Picture

The modern girl, always a sports enthusiast, is usually a Peugeot enthusiast too! And small wonder . . . for what better car could a lady desire than the 7-12 Cabriolet model (with dickey seat)?

And so, at the links, on the courts, and wherever women of taste gather together, the Peugeot is always a part of the picture . . . handsome, efficient, economical, and a firm favourite with all.

The 7-12
Peugeot
 (PRONOUNCE IT PUR-JO)

"The ideal light car for all occasions."

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LIGHT CAR SERIES.
 7-12 h.p. Cabriolet - £155
 7-12 h.p. All-weather
 Four-seater £155
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 with dickey seat £155

SHOWROOMS:
 80, Brompton Road, London, S.W.3.
 Opposite Harrods. 'Phone: Kensington 9601
WORKS AND SERVICE STATION:
 Filmer Road, Fulham, S.W.6.
 'Phone: Putney 4621.

Seven Pounds Tax.
Seven Horse-power.
Fifty Miles per hour.
Fifty Miles per gall.

READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

During the August Bank
Holidays, A.A. Members
received road assistance:-

Road Information	-	222,992
Running Supplies	-	1,890
Mechanical } Breakdowns }	-	4,786
Road Assistance } after Dark }	-	2,795

If you are not a member post this coupon to-day.

*The Secretary, The Automobile Association,
29, Finsbury House, New Coventry St., W.1.*

Please send me full particulars of A.A. membership.

Name

Address

PLEASE WRITE IN BLOCK LETTERS

Special Subscription for Light Cars not exceeding 1,000 c.c.

MEMBERSHIP NOW EXCEEDS 335,000

OUR READERS' OPINIONS (contd.).

Super-tuning Austin Sevens.

I read with interest and a little surprise your recent article on maintaining the Austin Seven. May I be permitted to state, in fairness to other firms than Maintenance, Ltd., that, amongst others, Gordon England, Ltd., undertake "hotting-up" these cars? This concern carried out the hotting-up of one of my Austins at their West End Lane service garage, Hampstead, and guaranteed me 50 m.p.h. and 60 m.p.h. in second and top gear respectively. These speeds were attained easily and the work cost me only £7 10s.

The garage in question was taken over some few months ago by Messrs. Boyd-Carpenter and Thompson, who also specialize in hotting-up Austin Sevens and guarantee 45 m.p.h. and 55 m.p.h. in second and top gears. For an extra charge they will obtain 50 m.p.h. and 65 m.p.h. by increasing the compression ratio and lowering the back-axle ratio to 5.2 to 1, I believe.

These people charge quite moderately and execute all

repairs in the least possible time, and I merely mention them because I give them all my engine work, but I know of at least two other firms who specialize in Austin Sevens and their supertuning.

R. A. SCALL.

INFORMATION WANTED.

BELSIZE-BRADSHAW.—Owners who have succeeded in reducing the oil consumption are asked to communicate with the Rev. H. M. Foyl, St. Paul's Rectory, Holgate Road, York.

JOWETT.—Information from any reader who has fitted a magneto to a Jowett engine will be appreciated.—J. L. Isaac, 49, Wilson-Patten Street, Warrington.

HUMBERETTE.—The opportunity to buy or borrow an instruction book dealing with the 1913 model is requested.—Geo. H. Landergan, 102, Priory Park Road, Kilburn, London, N.W.6.

WOLSELEY.—Any reader who has for sale an instruction book dealing with the 1921 10 h.p. model would oblige by sending it to G. A. Masters, 13, Wycliffe Road, Urmston, Manchester.

CLUB ITEMS AND SPORTING EVENTS.

AUSTIN SEVEN CAR CLUB.

On September 3rd the London branch will hold a rally at "Newlands Corner" at 4.30 p.m., and any owner of an Austin Seven is invited to meet members there.

NORTH LONDON MOTOR CLUB.

The London-Yarmouth Trial is being run this year as a 24-hour event; competitors will start from the Alexandra Palace at midnight on Friday, September 2nd. The homeward journey is expected to prove both interesting and exciting, and the finish will be at Goffs Oak, where the first man is due about 6 p.m. The entry is expected to be large, but those who are unable to compete or assist the organizers should not fail to turn out to give the riders a cheer after their strenuous trip. September fixtures include a supper run on the 10th, picnic run on the 18th and a half-day trial on the 24th. The club expects to organize the first road race to be held in North London, in the Alexandra Park, early next spring. Further information will be gladly given by the hon. secretary, Mr. Alan W. Day, Claremont, Ballards Lane, Finchley, N.3.

YORKSHIRE CENTRE SCOTT TRIAL.

Starting near Grassington on the morning of Saturday, September 10th, the One-day Scott Open Reliability Trial of the Yorkshire Centre A.C.U. presents interesting possibilities for three-wheelers as well as sidecars and solo machines. The course will be approximately 70 miles in length, and, whilst considerably rougher than in past years, will be about 30 miles shorter, and will contain a minimum of sections of deep mud or water. Thus, although the going has been stiffened, the aim is to demand less active exertion of the riders themselves. Headquarters, at Middleton Hotel, Ilkley; coffee stop for half an hour in Nidderdale; finish near Ilkley. Entries will close by first post on Saturday, September 3rd. All profits will be devoted, as formerly, to St. Dunstan's Hostel for the Blind. There are 22 cups and other awards for teams and individual competitors, amateur or trade. These include the Alfred A. Scott Memorial Trophy and replica; cups presented by "The Yorkshire Evening Post" and "The Yorkshire Evening News"; also the President's Cup offered by Mr. S. Jenson (Leeds). Mr. W. H. Dovener, 14, Cornwall Place, Bradford, has all arrangements in hand.

J.C.C. (YORKS CENTRE).

The Yorks Centre of the J.C.C. held a social run and river excursion on Saturday last. Meeting at York, the members attending went up the river by motor launch to Nether Poppleton. After visiting several local points of interest and partaking of tea at the Lord Nelson Inn, the return trip to York was made by water, and a pleasant drive home ended a very jolly day, which, in spite of the prevailing local weather, had been favoured with bright sunshine.

FORTHCOMING EVENTS.

Saturday, August 27th.
Wood Green and D. M.C. London-Beggars' Roost-London Trial.
Sutton Coldfield and North Birmingham A.C. Speed Trials, The Avenue, Shackerstone.

Thursday, September 1st.
Ipswich and District M.C.C. Lowestoft Speed Trials.

Friday, September 2nd.
North London M.C. London-Yarmouth-London 24-hour Trial.
Liverpool M.C. Liverpool-Edinburgh-Liverpool "Double Twelve".

Saturday, September 3rd.
J.C.C. (South-western Centre) Southampton-Exeter Trial.
Leeds M.C. Leeds-Edinburgh-Leeds.
York and District Ace Speed Trials.
Worcester M.C. Madresfield Speed Trials.
Austin M.C. Rally at Newlands Corner.

HUDDERSFIELD A.C.

The hill-climb arranged for Sunday, August 7th, was postponed until Thursday evening, August 25th, certain classes being deleted owing to insufficiency of time in which to run them off. To-morrow, Saturday, August 27th, the club is organizing a children's outing, and the club members who would be willing to place their cars or motorcycles at the disposal of the organizers are asked to get into touch at once with Mr. E. G. Learoyd, Lion Chambers, Huddersfield.

WALLASEY SPEED CHAMPIONSHIP.

The North Liverpool M.C.C. is holding a championship meeting at Harrison Drive, Wallasey, at 3 p.m., on September 10th. The championship will be a closed club event with classes which will embrace light cars and cars of any capacity.

INTER-CLUB GYMKHANA.

The third annual gymkhana organized by the London Motor Club took place under ideal conditions on Sunday, July 24th, at Egham, before an attendance of 3,000 spectators. The record number of 21 clubs took part and the large number of competitors showed much enthusiasm during the day. Mr. Vernon Pickering gave an interesting display of sidecar trick-riding, whilst Mr. Shillingford showed how an ancient 1902 motorcycle should be ridden. This caused a good deal of amusement. The parking arrangements, marshalling and so on were carried through without a hitch in spite of nearly 2,000 vehicles being present.

SUNBAC NEWS.

A one-day run of about 120 miles, breaking fresh ground in the Derbyshire Dales and to be held on a date in September, is proposed in view of the cancelled Vesey Trial of the Sutton Coldfield and North Birmingham A.C. The start is to be from Sutton Coldfield and the finish on the outskirts of Burton about tea-time, leaving the evening free for the return run. The course and the regulations will not favour specially hotted-up machines, and it is hoped that a good entry will materialize. The speed trials organized by the Sutton Coldfield and North Birmingham Automobile Club arranged for to-morrow are dealt with elsewhere in this issue.

LIVERPOOL MOTOR CLUB.

The eighth annual Liverpool-Edinburgh Double 12-hour Trial will take place on Friday night, Saturday and Sunday, September 2nd, 3rd and 4th. It is organized by the Liverpool Motor Club and is open to several north-country clubs. Entries close on Monday next, August 29th, but late-fee entries will be accepted up to September 1st. They should be sent to Mr. Charles Stephens, 15, Cecil Road, Preston, Birkenhead. Three-wheeled cyclecars and four-wheelers are eligible, various challenge trophies and so forth being offered.

SAND-RACING AT SOUTHPORT.

INCLEMENT weather does not seem to damp the ardour of the "speed merchants" in the Lancashire district, for despite a drenching morning on Saturday last a good proportion of the entrants turned up for the race meeting at Southport in the afternoon. When the meeting started the sands were almost flooded and rain was falling, but, fortunately, shortly after the start the clouds broke and a fine if windy afternoon resulted.

The straight-mile events were chiefly notable for the consistent running of a G.N. in the hands of J. I. Ritchings in the small classes and of a Bentley piloted by Miss May Cunliffe and A. E. Cunliffe in the larger classes, for which the 3-litre car was eligible.

Greatest interest was displayed, as usual, in the 10-mile event, in which the cars had to negotiate double turns of a line of flags at each end of the course. Actually two classes

were run off concurrently, one for cars with engines of less than 1,100 c.c. capacity, and the other for unlimited c.c. engines. Naturally the larger cars were the faster, so interest centred in them.

G. J. Jackson, driving a 3-litre straight-eight Sunbeam, led at the end of the first lap, but close on his heels were Miss Cunliffe's Bentley, while following some little distance behind came H. Mason (Austro-Daimler). The other cars of mixed sizes followed at a respectful distance. On the second lap the positions were maintained, but later the Austro-Daimler passed the Bentley, then the Sunbeam, and ran home an easy winner after the demise of the Sunbeam on the last lap. C. S. Churton (1,087 c.c. Amilcar) followed in some time afterwards and thus won the 1,100 c.c. class.

Results, Straight-mile Events.

1,100 c.c., general: I. Ritchings (G.N.).

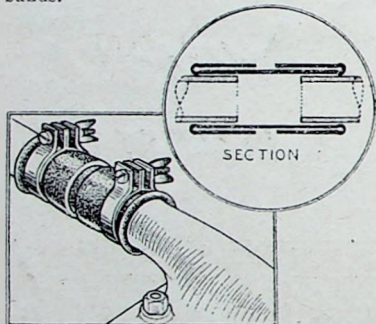
1,100 c.c., novice: I. Ritchings (G.N.). 1,500 c.c., general: I. Ritchings (G.N.). 1,500 c.c., novice: A. Arnold (Frazer-Nash). 2,000 c.c., general: P. Stephenson (Austin Seven); 2,000 c.c., novice: P. Stephenson (Austin Seven). 3,000 c.c., general: Miss Cunliffe (Bentley). 3,000 c.c., novice: A. E. Cunliffe (Bentley). Unlimited c.c., general: Miss Cunliffe (Bentley). Unlimited c.c., novice: A. E. Cunliffe (Bentley). 2,000 c.c. standard touring or sports cars, general: V. Hughes (Amilcar). 2,000 c.c. standard touring or sports cars, novice: H. Mason (Austro-Daimler). Sidecar machines and 1,100 c.c. three-wheel cyclecars, novice: T. A. Rhodes (Morgan). Three-wheel cyclecars, 1,100 c.c., general: T. A. Rhodes (Morgan). Three-wheel cyclecars, 1,100 c.c., novice: T. A. Rhodes (Morgan). Walk over. 10-mile event: 1,100 c.c.: C. J. Churton (Amilcar). Unlimited c.c.: H. Mason (Austro-Daimler).



We invite readers to send us hints gained from their own experience for inclusion in this feature. Five shillings will be paid to the sender of any hint published, but we cannot undertake to return contributions not used.

Temporary Water-pipe Repair.

A temporary repair to the rubber connection in the water-cooling system may easily be effected with the aid of a piece of motorcycle inner tube the diameter of which approximately suits that of the inlet or outlet on the cylinder block. Cut the tube to the required length—that is, about three times the length of the gap which the hose connection is to bridge—and fit it on to the radiator pipe and cylinder block in the usual way, doubling the ends of the tube over, as shown, to increase the strength at the points where the material is clipped by the metal bands.



A piece of disused inner tube makes a satisfactory radiator connection if doubled over as shown to increase strength.

These two points are always liable to be punctured when the bands are tightened, and the improvised connection will not, in a single thickness, have the same strength as the proper article.

Portable Lamp Extension Handle.

The utility of a garage portable lamp may be increased by extending the length of the handle so that the business end of the lamp can be placed near parts of the chassis otherwise difficult of access.

In most cases it will be found convenient to extend the length of the handle to about 2 ft., and the long handle may either be used in addition to the original—by means of a clamp to join the two—or it may simply be screwed on when required. If the extension piece be made a fixture, the flex leads to the lamp should be clipped along its length. This will prevent the wire becoming entangled when the lamp is being moved about in awkward spaces under the bodywork of the car.

B42

Spanner 'Spares.

It is not generally known that spare parts can be obtained for most tools made by well-known concerns. This applies particularly to adjustable spanners which consist of a number of "bits," any one of which may be damaged by unfair treatment. A case in point is the screw adjuster of Billing's "shifters." The thread may be worn by frequent excessive leverage and a new 10-in. spanner costs six or seven shillings. A new screw adjuster, however, costs only 1s. 1d. complete with set-screw.

Protecting the Cut-out.

The electrical wiring layout of many cars is so arranged that the cut-out is fitted to the engine side of the dashboard. In this position it is accessible, but there is always the possibility that in wet weather rain will drip down between the bonnet and scuttle and find its way into the casing of the cut-out. Considerable damage may be done to the battery if damp causes the armature of the cut-out to stick, and every care should be taken to protect it from the effects of moisture. As the cut-out very rarely requires adjustment, and as, in any case, this should not be attempted by anyone but the actual makers of the electrical equipment, there is no objection to sealing the casing. Vaseline liberally smeared around the small gap between the cover and the base of the instrument will prevent the ingress of moisture.

Freeing a Starter Pinion.

The Bendix pinion of an electric starter rarely jams against the teeth on the flywheel when the whole gearing is enclosed and protected from dust and dirt. With the open type, however, if grit is allowed to collect on the starter assembly the effect will be either to prevent the pinion sliding into proper engagement with the flywheel, or else the pinion will fly into engagement and jam in the teeth on the flywheel periphery.

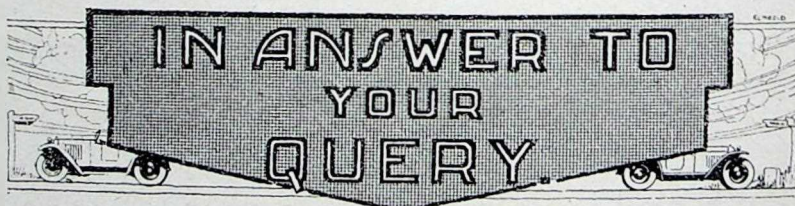
In most cases, when a pinion jams, it can be freed by engaging bottom or second gear, with the engine switched off and rocking the car backwards and forwards. If the pinion does not free itself readily, however, too much effort should not be exerted or the teeth and shaft will be damaged.

In bad cases the starter may have to be removed, and this will give the opportunity of cleaning the pinion and the quick-thread on which it runs.

Lubricating the Back Axle.

Slight difficulty is experienced in refilling the rear axles of certain cars owing, chiefly, to the fact that very thick oil is needed. This is not easily poured into the differential casing, largely because the steadily lubricant already present obstructs the flow of the fresh oil. The following tip, therefore, will be found of use in facilitating the task of maintaining the correct oil level.

Jack up one wheel of the car and rotate it in the reverse direction to that in which it usually turns when on the road. This will rotate the crown wheel of the differential gearing and the teeth of the wheel will draw the thick oil away from the filler orifice. Fresh oil should be poured in as quickly as possible and the filler cap replaced. Of course, if the oil in the axle casing is hot, as it would be after a run, no difficulty will be experienced in pouring in the fresh oil, especially if this also is heated.



Queries of general interest will be answered under this heading whenever possible, but a stamped addressed envelope must be enclosed for reply by post. Telephonic inquiries cannot be answered.

S.T. (Paisley).—Squeaks in the rear springs of your Lagonda may be due to the lack of lubrication of the spring slides on the rear axle. To effect a cure the sliding parts should be thoroughly greased, and grease should be applied between the leaves of the springs.

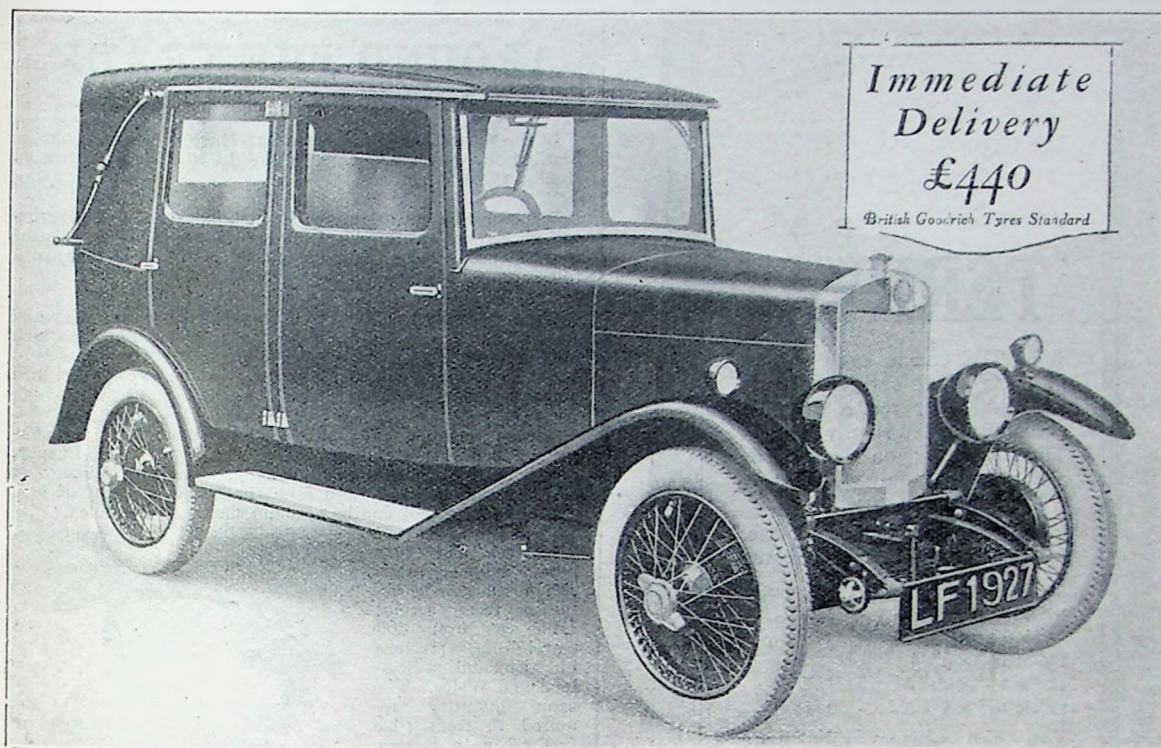
W.E. (Cookham).—A fabric universal joint might be fitted in place of the sliding-block joint which is now apparently worn out. The work of fitting the new joint would be by no means easy, however, and you should first consult the makers of the fabric couplings.

B.B. (Wimbledon).—On your 9 h.p. Rover the track rod is screwed to permit of adjustment.

G.O. (Sheffield).—The makers of the Talbot car recommend half a pint of gear oil every 5,000 miles for lubricating the rear axle. In no circumstances should grease be used.

H.J. (Redcar).—A rag soaked in paraffin placed round an obstinate nut may help to remove it. Make sure that the paraffin is getting to the threads of the nut, and leave the rag in position for as long a time as possible.

E.R. (Leytonstone).—The lamps should be switched on before applying a voltmeter to the battery. Unless a load is placed on the cells the voltage reading will not be accurate. If the cells are in need of a charge there will be a considerable difference between the readings on open circuit and on load.



New "Lea-Fabric" 4-door Saloon on 12/40 h.p. Sports Chassis

The extreme lightness of this fabric saloon body enables the 12/40 h.p. sports chassis upon which it is constructed to give of its best in speed, acceleration and hill climbing, which, of course, the safety of the Lea-Francis four-wheel braking system permits.

At the same time the driver and all

passengers enjoy a complete immunity from the weather, and rest in luxury equal to that of the heaviest type of saloon car. An additional advantage is the complete silence of this type of coachwork. No drumming, squeaks nor rattles even at high speeds. Let us demonstrate this fascinating model to YOU. Catalogues on request.

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CLUB 1,000 MILES 6 DAYS LIGHT CAR TRIAL

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TERRY Tyre Lever

MADE from high-grade STEEL carefully hardened and tempered, it will give you staunch and sturdy service. The harder you work it, the more you will value "TERRY" quality.

Buy from your agent, please. In case of difficulty write us.

12" x 1" x $\frac{1}{4}$ "	- - -	1/1 each.
12" x 1" x $\frac{5}{16}$ "	- - -	1/3
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15" x 1 $\frac{1}{4}$ " x $\frac{3}{8}$ "	} - -	1/8
18" x 1 $\frac{1}{4}$ " x $\frac{5}{16}$ "		
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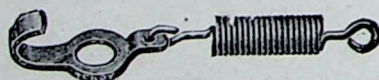
You can always rely upon Terry's quality — List Free.

Terry's 4-folding Spanner Sets.

In ordinary compass and weight. Jaws accurately cut, strongly shouldered, snug to the hand—and as indifferent to wear and time as a high-grade hardened and tempered STEEL tool should be. Blued Plated

$\frac{5}{8}$ " to $\frac{1}{4}$ " across flats	- 9d.	1/3
$\frac{1}{4}$ " to $\frac{7}{16}$ " " " "	- 1/6	2/6
$\frac{1}{4}$ " to $\frac{7}{16}$ " Whitworth	- 2/6	5/-

No. 905. 8 Leaved Magneto Set, 1/6 each.



No. 1046.

Terry's Bonnet Clip.

Suitable for "Morgans" and other light cars. Good Quality. 4d. each.

The "Avecta" Workshop or Garage Tool Rack.

High-grade steel clips. Keeps tools in good condition and bench clear.

4	6	8	10	12 clips.
2/6	3/6	4/6	5/6	6/6 each.

Clips only, 3/- dozen.

100% Saddle Comfort.

The "Terry" Spring Seat Saddle snubs out all shocks and vibrations and makes cycling and motorcycling more healthy. Lists free.

HERBERT TERRY & SONS, LTD.
REDDITCH, ENGLAND. Est. 1855



AROUND THE TRADE.

In the recent J.C.C. Sporting Car Race at Brooklands the first, second and third cars in the 1,500 c.c. class ran on Dunlop tyres.

We hear that an attractive French sports car concession will shortly be available. Letters addressed to the Editor of this journal and marked "Concession" will be forwarded to the proper quarter.

We understand that the Alvis cars which secured first and second places in the 1,500 c.c. class, and the Salmsons which ran first and second in the 1,100 c.c. class, in the recent J.C.C. Sporting Car Race at Brooklands, were equipped with Champion sparking plugs.

Gordon England, Ltd., have now completed the transfer of their works and offices from Felsham Road, Putney, to the Palace of Industry, Wembley. The site taken over covers about 4½ acres, and four times the number of men employed at Putney can be accommodated at Wembley.

Mixtrol oil for upper cylinder lubrication can now be obtained from service tanks at over 300 petrol-filling stations in England, Scotland and Wales. The exact quantity required to treat the fuel taken in is supplied at one penny for half an ounce, which is the recommended amount per gallon.

Owners of cars no longer in production will find that Elephant Motors, Ltd., 97-101, Newington Causeway, London, S.E.1 always have a very large stock of spare parts for most well-known makes. In addition, spares for existing makes of car are also available.

This clever fancy dress forms a striking advertisement for Vacuum oils.

We learn that "Tommy Prattkins," the advertising character identified with Pratts motor spirit, proved to be the winner in the recent £10,000 Character Ballot Competition. It has been established that the advertising pages of the motoring journals have played a large part in popularizing "Tommy Prattkins."

Mr. C. W. D. Chinery, the well-known Gwynne exponent and proprietor of the Olympia Motor Co., advises us that he has opened new showrooms at 3, Hammersmith Road, Kensington, London. The old premises at 1, Hammersmith Road will in future be used for the display of second-hand cars and as a service station.

We have received a copy of the latest catalogue issued by the Ever Ready Co. (Great Britain), Ltd., Hercules Place, Holloway, London, N.7. Starting and lighting batteries, Ever Ready portable searchlights and similar articles are described in the 56 pages of the catalogue, which will be sent to any reader upon application to the address given above.

Motorists who do their own running repairs will find many uses for a Fluxite soldering set, which includes a spirit blowlamp, an iron, a tin of Fluxite paste and other accessories, all arranged to pack neatly into a tin box. The manufacturers, Fluxite, Ltd., Rotherhithe, London, S.E.6, point out that their flux is an effective medium for case hardening.

MENTION of "The Light Car and Cyclecar" when corresponding with advertisers assists the cause of economical motoring.



CHEVRON CORD TYRES

are exceptional even in these days of astounding tyre performance.

The following letter refers to a set of Englebert tyres fitted to a Salmson Car. One of the tyres ran 20,000 miles, one 24,000 and two 25,000 miles:—

Cliefden Cottage, Hersham Road,
Walton-on-Thames.

30th July, 1927.

Dear Sir,

Re your letter of 18th July, I would like to say that I have no objection to your using my name with reference to the very satisfactory results from the Englebert Tyres on my Salmson, as they have given me better mileage than I have ever had out of any other Tyre.

Yours truly,

(Sgd.) G. M. BAYLEY, Capt.

ENGLEBERT TYRES, LTD.,

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FLORIO CUP

2,000 c.c.

1ST

2ND

3RD

4TH

1,500 c.c.

1ST

The usual result

Amazing speed is not the only feature of Bugatti performance. A personal investigation of Bugatti merit as a tourer and town carriage will reveal outstanding reliability, flexibility, and general road efficiency.

A NEW FEATURE.

Specially designed ENGLISH coachwork embodying high-class finish and maximum comfort available for Touring Type Chassis.

2-seaters from £100
4-seaters from £150

CURRENT PRICES:

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Touring Model... £325
Chassis only .. £325
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MALCOLM CAMPBELL (London) Agents:
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TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.

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AGAIN,
FASTER
with**



PISTON RINGS

Not only faster—but smoother and with more power. Surprising what a difference BRICO Piston Rings make. Just try it. You'll be amazed at the "vim" in the engine, every atom of power developed from every drop of petrol. An accurate piston ring and perfect compression is the secret. There's a Brico Ring for every engine sold by all Garages, Dealers and Agents. Manufactured by The British Piston Ring Co., Ltd., Coventry.

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DIFFERENCE**

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"THE PETROL ENGINE." Deals fully with the petrol engine as applied to motorcycles, cars, motor boats, buses, vans, aeroplanes, etc. Profusely illustrated. 3/6 net; 3/10 post free.

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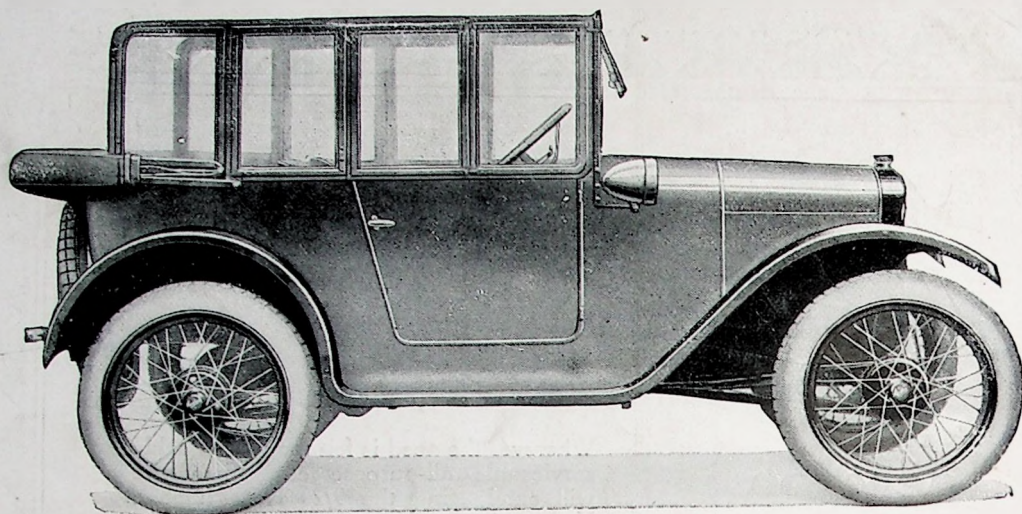
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