

2010-11-11



IN SEARCH OF SUMMER.

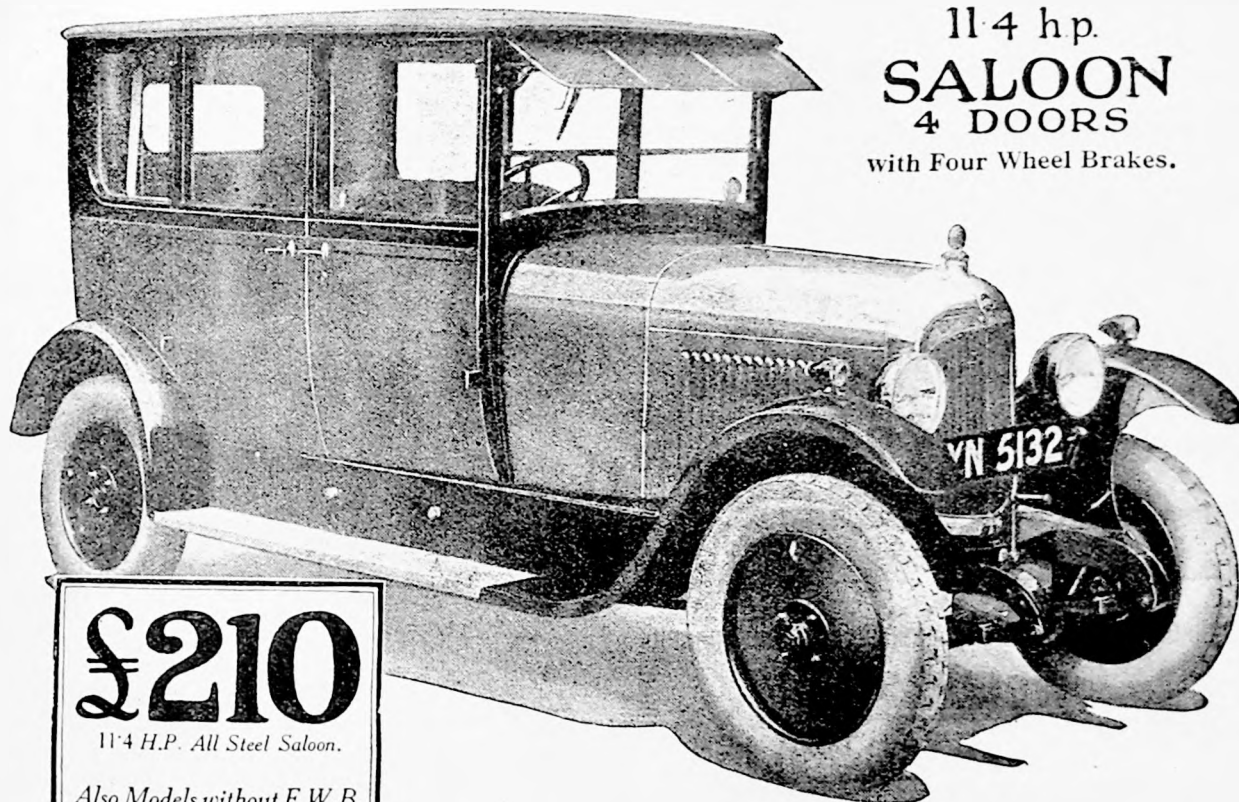
Even in December it is possible to find a delightful summery picnic spot like this. The evergreens, sunlight and shelter from the wind provide for the town dweller a striking contrast to the dull, grey, overcast conditions which he has to suffer during the workaday week.

LODGE
MADE IN ENGLAND

CITROËN

11.4 h.p.
SALOON
4 DOORS

with Four Wheel Brakes.



£210

11.4 H.P. All Steel Saloon.

Also Models without F.W.B.
but with similar Bodywork

£190

Supreme Closed Car Value!

**IMMEDIATE
DELIVERY**
from
**BRITISH WORKS
SLOUGH.**

THESE 11.4 h.p. Citroën 4-door Models are the most inexpensive full-sized and fully equipped Saloons on the market. They are beautifully fitted throughout and give complete protection from the weather. They are an invitation to motor in comfort at a very moderate cost.

EQUIPMENT is exceptionally complete, including electric lighting and starting 5 wheels and tyres, clock, speedometer, automatic windscreen wiper, Boyce motometer, petrol filter, driving mirror, licence holder, inspection lamp, dash lamp, oil gun chassis lubrication, and shock absorbers. Luxury items fitted as standard comprise sun shield, window winders, silk spring window blinds, interior lighting, etc., etc.

Send for Citroën Book 18.

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Citroën Building, Brook Green,
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New Showrooms:
Devonshire House, Piccadilly, W.1.

The SILENT SERVICE that means so much — to YOU

The wheels of a car are like the strong right hand of a healthy man—they are "taken for granted." It is only in times of emergency that any test can be made; only in a crisis can the strong hand—the sturdy wheel—be appreciated.

Sankey Pressed Steel Wheels have, since 1908, carried millions of people safely and silently through every phase of joy and danger. The catastrophes these unbreakable wheels have averted cannot be catalogued—but they can be borne in mind. When you see the word "Sankey," there also is the word "Safety."

Sankey WHEELS

Joseph Sankey & Sons Ltd., Wellington, Shropshire



"WELLINGTON" LIQUID METAL POLISH

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

CLEANS
and
POLISHES
ALL
METALS
(including
Silver)
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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.

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WELLINGTON MILLS, LONDON, S.E.1.



Examples of B & P
standard Motor Houses
can be seen at our
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Have your own Motor House

Be independent—save garage charges and reduce your repair account. Boulton & Paul Motor Houses are tenants' fixtures—easily erected by any handy man—high grade in every detail.

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No. B.217—Urban Motor House.
This house is designed to comply with the By-Laws of Urban areas.

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Size 14' x 8' x 6' 6" high £16:15s. Size 16' x 8' x 6' 6" high £19
to eaves, for two-seater to eaves, for four-seater

No. B.203—Motor Car House.

A superior house at a low price. Will have a market value twenty years hence.

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Size 12' x 8' x 6' 6" high £25:10s. Size 16' x 10' x 7' 6" high £37:10s.
to eaves, for two-seater to eaves, for four-seater

Carriage Paid to stations in England and Wales for erection by purchaser.

Also in other suitable sizes.
Full particulars on request.

Ask for Catalogue No. 629.

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Telegrams: BOULTON NORWICH Telephone: NORWICH 8511
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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.

JAN. 3 TO JAN. 8.

GAMAGES ONE WEEK SALE

SURPLUS STOCKS must Go prior to STOCKTAKING. THOUSANDS OF REAL BARGAINS FOR THE CAR!

For those who cannot attend this Sale, a selection of Values to send for by Post is given below. Goods to value of 20/- and upwards CARRIAGE PAID.



RUBBER STEP MATS.

Step Mat in Aluminium Frame with straight bar rubber mat. Size 12 1/2 x 9. Every car should be fitted with one. Post 6d. SALE PRICE **4/6**

DOUBLE TWIST DEEP NOTE MOTOR HORN.

10. Black and Nickel plated. Dosh fitting. Wonderful Value. Post and Packing 7d. SALE PRICE **15/3**

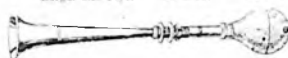
Made in Brass and Bronze (no lead or splter) and silver-plated. Offered at half-price in this great clearance. **16/9** Post 6d. each.



SILVER-PLATED WINGS.

Attractive Silver-plated Wings for Boyce Motorometers. Small size for form Meters only. Usual Price 10/6. SALE PRICE **6/9** Larger size 14/6. Post 6d.

SPREAD EAGLE MASCOTS.



SPECIAL SPORTS HORN.

Through dash actuator. Nicely made and finished. Gives a very common and penetrating note. Post 6d. SALE PRICE **6/6**

OIL DRUM PUMPS.

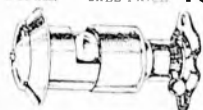
Do away with the chance of getting smothered in oil. Well made and strong. Cost either 5 or 10 gallon drums. Carriage extra. SALE PRICE **7/6**

RADIATOR LAMPS.

Keeps the Engine and Radiator warm, thus ensuring protection from frost, and giving easy starting in the morning. Will burn for about 20 hours at one filling. Burns kerosene. Post free. SALE PRICE **10/3**

SCREEN WIPERS.

Best quality Spring Top Pattern, with two wipers and handle for operating. Fits either plain edge or metal head type screens. SALE PRICE **2/11** Post 4d.

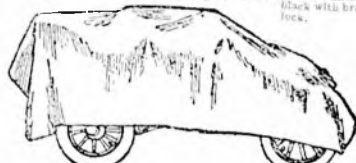


CAR DASH LAMP.

Light can be reflected in any direction. Can be fixed WITHOUT DRILLING dashboard, as wire leads in base of lamp through groove in frame, complete with bulb. Post 3d. SALE PRICE **4/7**

SCOPE MIRRORS.

Well made and finished, and giving a very wide range of vision of the road behind. Splendid quality throughout and really good value at. Each Post free. Order per return. SALE PRICE **6/9**



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Dust Covers in Cotton Dick. Size. Usual Price 11/6. SALE PRICE 9/9. 12 x 12 ft. Usual Price 20/6. SALE PRICE 21/8. 18 x 12 ft. Usual Price 31/6. SALE PRICE 31/6. Carriage extra.

CLEANING BRUSHES.



TRIANGLE MOTOR SPOKE BRUSHES. Best quality bristle. A fine convenient brush. Post 3d. SALE PRICE **4/3**



ORDINARY SPOKE BRUSHES. Good quality bristle. Well made in a handy size and very useful. Usual Price 4/-, Post 6d. SALE PRICE **1/10**



CLEANING BRUSH. Especially suitable for cleaning wire wheels. Post 3d. SALE PRICE **1/10**



BENT SPOKE BRUSH. Specially shaped for getting at awkward places. Best quality bristle. Car size. Post 3d. SALE PRICE **3/10**



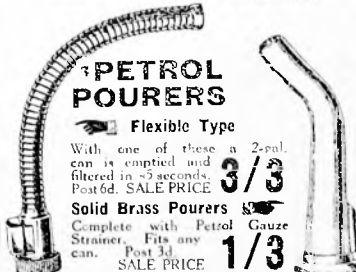
WHEEL BRUSHES. Well made and finished. Post 3d. SALE PRICE **2/11**

PETROL POURERS

Flexible Type

With one of these a 2-pal. can is emptied and filtered in < 5 seconds. Post 6d. SALE PRICE **3/3**

Solid Brass Pourers. Complete with Petrol Gauze Strainer. Fits any can. SALE PRICE **1/3**



Our City House,

Benetfinks of Cheapside, are combining with the Holborn Headquarters to make this Sale an unqualified success. City motorists should benefit to the full by the advantages thus offered.

GAMAGES "SCOPE" MIRRORS.

Gamages "Scope" Mirrors for the car. One of the most popular models of the season. Give very large range of vision owing to the shape of reflector. Post 6d. SALE PRICE, each **7/9**

CLEANING KIT.

All Cleaning Kits for the Car greatly reduced in price

CLEANING CLOTH.

Splendid quality Cleaning Cloth. Nice and soft, and made up into 24 inch rolls. Far superior to waste or mutton cloth. SALE PRICE per roll Half Roll, 3/- Post extra. **5/9**



CHAMOIS LEATHERS.

11. quality, soft yet long-wearing. Size about 21" x 22". SALE PRICE ea. **4/-** Post extra.

SPONGES.

Fine quality Honey comb Sponges. 3/8 1&2 1 Extra



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



An Up-to-date Edition of the Standard Motoring Work.

Issued by "The Motor."

"The Motor Manual"
deals with:

Engine types, operation and construction, valves, etc.—carburation, cooling, supercharging, silencing—transmission system from clutch to final drive—braking systems—ignition, starting and lighting—bodywork and equipment, tyres and accessories—choosing, housing and maintaining a car—adjustments and renewals—touring, legal matters, etc. Much general information and data of value to motorists is also given, including an extensive glossary of technical terms.

THE 26th Edition (730th thousand) of "The Motor Manual" has been largely re-written and re-illustrated, and deals exhaustively with the subjects of motors and motoring in a concise and easily understandable way. The numerous illustrations are planned on a more pictorial scale than those in previous editions, and convey the maximum of practical information at a glance. No motorist who wishes to get the best out of his car should miss buying it.

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YOUR 1927 MORGAN and expert Morgan service AT HOMAC'S

ALL PRICES REDUCED.

STANDARD
model now fitted
with double wind-
screen, black leather
cloth hood, electric
horn and celluloid
covered steering
wheel.

DE LUXE FAMILY
and **AERO** models
now 3 in. wider
and longer. 7 in.
front wheel brakes
now standard.

STANDARD Model - £89
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FAMILY, water-cooled £121
AERO, water-cooled - £127
AERO, 10 40 h.p., Racing £140
SELF-STARTER £10 extra.

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REPAIRS & OVERHAULS
BY MORGAN EXPERTS.

TRADE
SUPPLIED

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MOTOR AGENTS
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Works: 46, London Rd., Clapton, E.5

PHONE:
CLISSOLD
2408.

THE WISE MAN OF THE ROAD

It is easy to take the evil of bouncing and swaying out of the suspension of your car by fitting the **STOTT ANTIBOUNCE CLIPS**. They are the most perfect Shock Absorbers on the market and I am continually receiving, from owners of different types of cars, testimonials of their efficiency.

The **STOTT ANTIBOUNCE CLIPS** are made in various sizes to suit all classes of vehicles from light cars to heavy commercial lorries. They are the cheapest and most efficient method of spring control, giving all the advantages of "Rebound Plates" out increasing the weight or cost of spring.

**FIT THE
STOTT ANTIBOUNCE
AND
RIDE IN COMFORT.
PRICES FROM
11/6 PER PAIR.**

Drop a post-card to the makers who
will be only too pleased to give you
all the help they can.

**RICHARD BERRY
& SON
(DEPT. A), MAKEING
ROAD, SMETHWICK.
Phone: Smethwick 631.
Grams: "Springs,
Smethwick."**

Never before have we commenced a year with as much confidence as we face 1927. The Jowett in various trials, and particularly Frank Gray's African Expedition, has won fame and glory beyond even its creators' fondest hopes.

Is it boastful on our part to say that not only the British Isles but the whole world recognises the Jowett as not only the cheapest car to buy, but also the cheapest to run?

We have to maintain this proud position, and shall do so by seeing that every Jowett from these works adds its quota to our reputation and your satisfaction.

We shall continue to equip our car with everything necessary for your comfort, and you will look in vain for a similar equipment on cars at double the price.

Our panelling will still be in aluminium, our upholstery real leather, and our stuffing real hair.

You can make us happy by placing your order, and you will be happy when you get the car.

Meanwhile—a happy New Year to everybody.

Prices from £139.

JOWETT CARS, LTD., IDLE, BRADFORD. 

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.

Britain's Best Value

The SINGER 4-Seater "SENIOR" at £220

with complete equipment for all-weather conditions, is undoubtedly the best value for money on the market.

Four-wheel Brakes; Balloon Tyres; real Leather Covered Pneumatic Upholstery; 12-volt Lighting Equipment; and all the luxurious fittings of last year's model; but in addition, the 1927 Model includes many extras, such as Leverol Sliding Bucket Seats, improved all-weather equipment with sliding panel; clock; floor mats; Lucas Shock Absorbers fore and aft; Tank at rear with Petrol Gauge; and Half-Elliptic Springs in front.

Deferred Payments Arranged £50 down

Generous allowance for your present Car.

New Model 2-Seater, with dickey - £220

Luxurious Coachbuilt Saloon - £260

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Phone - - - - - Langham 3314.

SINGER
"JUNIOR"
Full 4-Seater
£148 - 10 - 0



"SENIOR" ALL-WEATHER, £220

Woodwright.

Emergencies!



WRITTEN by the Editor of "The Motor," "How to Drive a Car" explains how to deal with the numerous road problems that demand accurate judgment and instant decision.

In addition, it gives in a non-technical form the principles and practice of driving, based on experience of all types of cars. The instructions are carefully graded, so that the learner progresses step by step in the art of efficient car control.

A reader writes: "Your publication 'How to Drive a Car' is the best I have read upon the subject yet."

PRICE 2/6 NET.

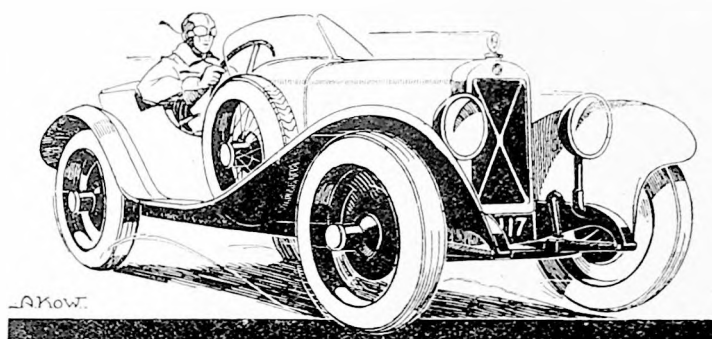
TEMPLE PRESS LTD.,
7-15, Rosebery Avenue,
London, E.C.1.

Obtainable from all principal bookstalls and book-sellers, or direct from the publishers 2/9 post free.



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

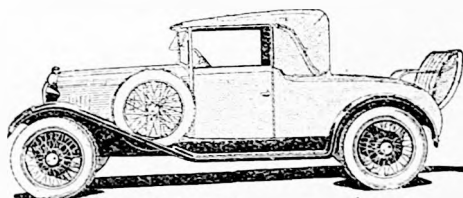
A MILE A MINUTE FOR £175!



The 10/20 H.P. Sports Skiff Two-Seater.

AND

CLOSED CAR COMFORT FOR £215!



The 10/20 H.P. 2-Seater Coupé £215.

THE SALMSON GIVES YOU BOTH!

10/20 h.p. Fabric Saloon, £248 10/20 h.p. WEYMANN, £275

FOR WHICH

YOUR OLD CAR WILL BE EXCHANGED ON DEFERRED TERMS

BY THE

SOLE LONDON DISTRIBUTORS:

GORDON WATNEY & Co., Ltd., 31, BROOK ST.,

CONCESSIONAIRES FOR U.K. AND BRITISH DOMINIONS:

S.M.S. LTD. CHURCH WHARF, CHISWICK.

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.

Do your own repairs and adjustments !



EVERY motor-vehicle owner should possess "The Motor Repair Manual," a clearly written and fully illustrated hand-book dealing with repairs, adjustments and overhauls. There are sections on the lathe and its uses, descriptions and illustrations of tools and how to use them, various mechanical processes and workshop practice, how to construct a serviceable motor house cheaply, the fitting up of a repair shop and the provision of its tool outfit, and many new practical hints relating to car equipment. Get your copy to-day !

2/6 NET from all Book, stall, and Book-seller, or 2/9 post free from publishers.

The Motor REPAIR MANUAL

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



The Lowering Valve.

This is the simple release which enables the car to be lowered automatically.

Now, watch! - the car comes gently to the ground

EVER seen a car jack like this before? With hardly any effort and using only one hand, you raise the car. No chains or cogs, no kneeling or perspiration. Just push the lever up and down. THEN, when the job is done, you simply slip the handle on to the release valve, unscrew it a turn and the car comes gently to the ground.

What is its secret? Just this, it is *hydraulic*—the “Enots” Hydraulic Jack. If you are acquainted only with mechanical jacks, the lifting power of the “Enots” will amaze you. For the first time a hydraulic jack has been produced that is as compact, as simple and as light in weight as any mechanical jack—and twice as strong and reliable. Do not suffer any longer the dangers and difficulties of mechanical jacking. The price of the “Enots” Jack is only **50/-** with 2-piece handle. Ask your garage or write direct.

Compact and neat, weighs only 8½ lbs. Height 7½", width 4½", lift 4½", extension 4". lifts two tons—immensely strong—nothing to go wrong.

Another Enots improvement

The Enots FORCE FEED OILER

Cuts out messy oil cans. A touch on the button sends a strong steady stream of oil right where you want it. Under high pressure and perfect control. Easy to fill, easy to use, dust proof and entirely reliable. Oils thoroughly and without waste. Fits with clip to dash. Price

6/-

ENOTS

HYDRAULIC JACK

BENTON & STONE, LTD.,

Enots Works, Birmingham.

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

GAMAGES

SALE Jan. 3 to Jan. 8

PRIOR TO STOCKTAKING.

LADIES' LEATHER

**MOTOR
COATS**



A further purchase of this exceptional bargain. In style as sketch. Smartly made and finished with a good quality leather in LIGHT AND MID TAN, WARMLY LINED FAWN FLEECE.

Cosy Fur Collar of full shape, it is WINDPROOF and is practical to the last detail. **SALE PRICE**

SIZES:—
Small Women's
and average
Women's.
Post Free.

Becoming
**LEATHER
HAT**
to match,
sketch.

PRICE, post
free,
12/9

Also at
Our City
Branch Sale
**Benetfinks
Cheapside**

**TAN LEATHER
MOTOR
COATS**

Made from finest SEMI-CHROME skins, double breasted styles, and lined with a SOFT FLEECE LINING and fitted all-round belt. WIND-CUFFS in SLEEVES, light in weight, the IDEAL COAT for COMFORTABLE DRIVING.

LIGHT, WARM,
and ROOMY.
36 in. long. **SALE
PRICE**

72/6

Full length Leather Coats
44 in. long. **SALE PRICE**

79/6

*Everything for Motorists
is Cheaper at this Sale.*

**A. W. GAMAGE, LTD. HOLBORN
LONDON, E.C.1**

THE RIGHT THING IN THE RIGHT PLACE

YOU would not take your umbrella to bed — it would be out of place.

In other cases it may not be so obvious. Take radio valves, for instance. There are over 100 different makes — a thousand different varieties — each with a filament, a grid and an anode. And there is the new Amplion Valve. The right place for this is in your receiver — that is to say if you desire

Better Radio

Announcement of Graham Amplion Limited, 25, Savile Row, London, W.1.

SUDDEN EMERGENCY

WHEN DRIVING AN AUSTIN "7"

And how useful would you find a free hand for signalling for steering, but the operating of the hand brake requires all your attention.

Fit a BODELO BRAKE ATTACHMENT which will enable you to apply all four brakes simultaneously by means of the foot pedal only and will leave your hands perfectly free. The BODELO is extremely simple to fit and absolutely effective.

PRICE 30/-

*A post card will bring our illustrated
leaflet giving full particulars.*

**LLOYD & DEELEY,
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Wholesale Stockists: **BROWN BROTHERS LTD.**
London and Branches.

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The Motor

regularly

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Special this week

S.O.S. Signals for Stranded Motorists.

Wanted—A Recognised Code for Seeking Wayside Assistance.

Checking Vibration in 6-Cylinder Engines.

Various Ways in which the Smooth Running of a Six Can be Enhanced.

The Latest Aspects of Four-wheel Braking.

By Captain J. M. Rubury. Designer of the Alford & Alder Front-wheel Brakes.

The Throttle and Skidding.

Some Very Interesting Facts Too Often Forgotten by the Average Driver.

Road Tests Showing Principal Characteristics.

The 20 h.p. Willys-Knight Saloon.
The 10-20 h.p. Donnet Saloon.

Getting the Best Out of an Austin Twenty.

Hints on Upkeep and Maintenance

Wanted—An International Car Trial in Great Britain.

Wheel Discs for All Types of Car.

Ingenious Types that are Rattle-proof, and Improve Appearance.

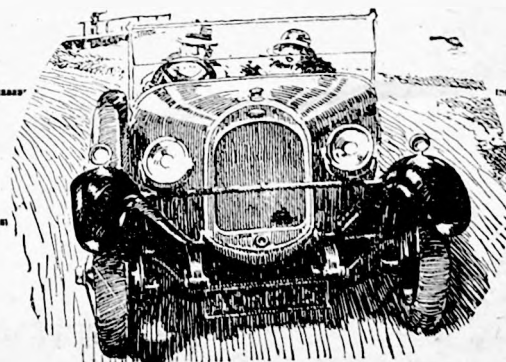
Improving the Motorcar.

Further Batch of Interesting Suggestions.

R.A.C. New Lost Property Scheme.

An Interesting Innovation.

NEXT WEEK.—IMPROVING THE MOTORCAR—Voting Form for Interesting Plebiscite. £100 in Awards. THE COMFORTS AND DISCOMFORTS OF MODERN COACHWORK—By Mr. H. J. Butler. PICTURESQUE COTTAGES BY THE WAYSIDE. And all the News.



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is published
every Tuesday.
Price - 4d.

Offices: 7-15,
Rosebery Avenue,
London, E.C.1.

**You
can have**

BY MAKING YOUR CHOICE NOW !

We very early realised that to cater adequately for all our customers' requirements it was imperative that we should always be in a position to supply absolutely reliable second-hand cars at reasonable prices, and we have therefore provided what is probably the largest showroom in the country exclusively devoted to Used Cars. This, of course, being in addition to and quite separate from our New Car showroom which, incidentally, is only three doors away. Here we have a stock of upwards of 100 *guaranteed* cars of all types available for inspection and trial at any time, so that practically every ordinary requirement is assured of being represented. This is the best time of the year to buy a second-hand car, and if you do not require delivery at once we will store the car for you **FREE OF CHARGE** for a month. Why not write or 'phone for our current list at once or, if possible, pay us a personal visit? You can easily save enough money by buying now to cover the cost of your licence and insurance for the whole year.

If you already have a car you wish to dispose of in part payment for a new or other second-hand model, simply write us full particulars and we will make you a *definite* exchange proposition by return of post to include free delivery and collection to your address, and it should be noted that our Deferred Payment and other facilities are operative in any part of Great Britain.

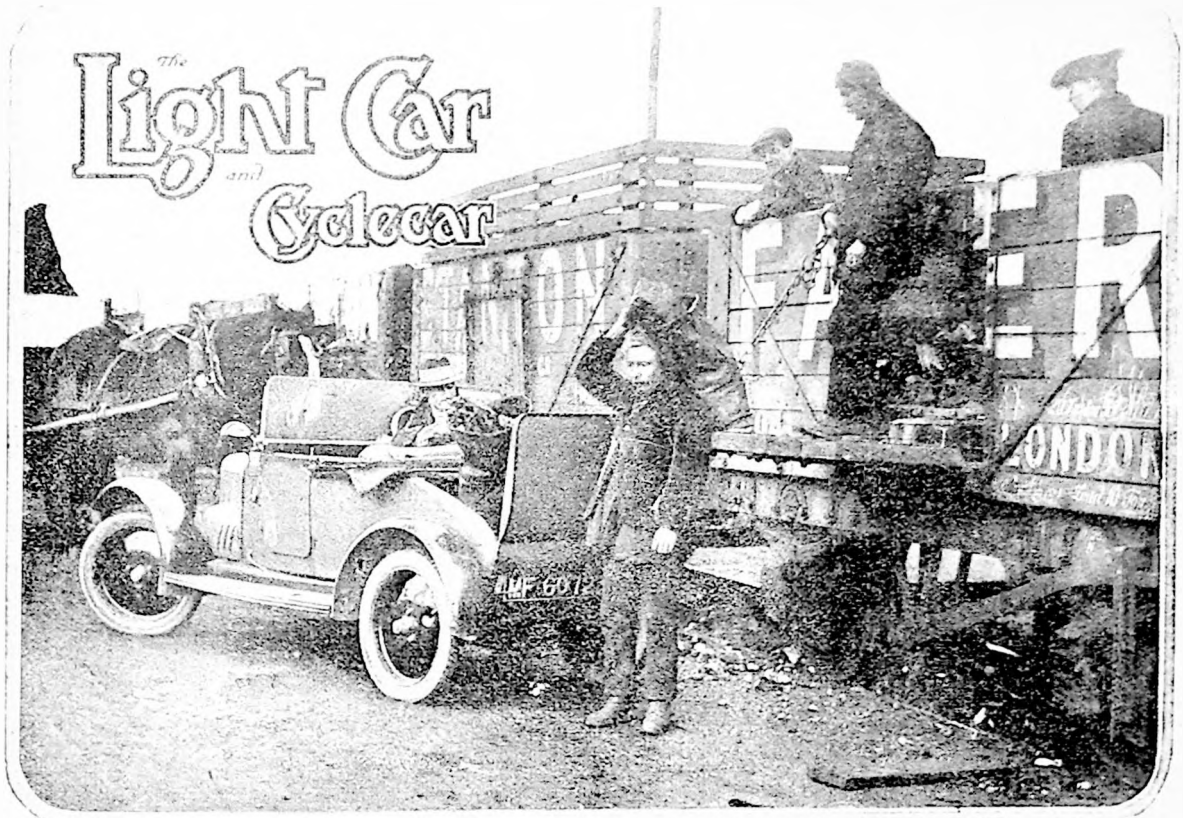
Established over 30 years you know.

USED CAR DEPT: 237, HAMMERSMITH ROAD, W.6.

Part Exchanges
and
Deferred Payments.

Telephone :
Riverside 4646.
(Private Exchanges.)

MOTOR COMPANY
245, HAMMERSMITH ROAD.
LONDON, W 6



AT THE ELEVENTH HOUR.

The coal shortage was relieved in some London districts by the last-minute arrival of supplies on Christmas Eve. This light car owner wisely made sure that his ration would be available for cooking the turkey.

NOTES, NEWS & GOSSIP *of the* WEEK

ON OTHER PAGES

Fue's of the Future	120
Why Not Exhaust Turbines? ..	122
The Singer Saloon on Test ..	124
Rich's Mixture	128
Topics of the Day	129
Faded Licences	130
Cyclecar Comments	131
London-Exeter Report	132
Our Readers' Opinions	138
Ideas for Owners	142

LIGHTING-UP TIMES (Rear Lamps) for Saturday, January 1st.

London ... 4.28	Edinburgh 4.15
Newcastle ... 4.15	Liverpool ... 4.30
Birmingham 4.30	Bristol ... 4.38

Expiry of Licences.

All car licences expire automatically to-day, December 31st. Fourteen days' grace is allowed for renewal, but after January 14th no renewal of any current licence can be made at a post office.

Another New By-pass.

The Ministry of Transport has placed a contract for the construction of the Bexley Heath by-pass. Preliminary works, including the construction of embankments and cuttings, have been completed.

This Week.

The "Faded Licence" case has aroused widespread interest and, with the object of showing motorists just where they stand, we include in this issue an article by a barrister-at-law, which explains all that it is necessary for the owner to know; we also comment on the subject under "Topics of the Day." Our principal feature is a full and illustrated report, from the light car point of view, of the "London-Exeter."

No. 734 VOL. XXIX.

Safety at Night.

To make night driving safer on the Great West Road the cross-roads beacons have been fitted with red reflex triangles in their stone bases.

New Gear on Test.

An epicyclic gear providing six speeds is now undergoing road tests in a car. The gear is the invention of a Bromley, Kent, nurseryman, and a company known as Furness Motor Gears, Ltd., has been formed to handle it.

Next Week.

Sliding-pinion-type gearboxes, in spite of their admitted disadvantages, are accepted without question by most motorists, but in next week's issue, in an article entitled "Will the Conventional Gearbox Survive?" other methods of providing variable gearing are explained and discussed. The alleged backward design of open touring bodies will be dealt with in an article entitled "Comfort that is Still Overdue."

Proposed Bridge Reconstruction.

The Bath City Council proposes to reconstruct its centuries-old bridge. In heavy floods the water flows over the crown of the present structure.

A Popular President.

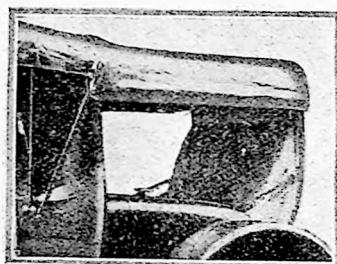
For the second time Sir Charles Wakefield, Bt., has been elected president of the Motor and Cycle Trades Benevolent Fund. His previous term of office was in 1918.

Compulsory Signals.

The New Year will see the introduction of a new and interesting law in Paris making it compulsory for motor drivers to give clear signals, either by hand or by an approved mechanical device. A similar law applying especially to tram and taxi drivers would be welcome in this country.

Exit the Horse.

The horse's sphere of usefulness ceases in Rio de Janeiro on the first day of the new year, for the municipal



When not in use, this dickey seat hood is carried under the seat. It is made by Vibrax, Ltd., 40, Grosvenor Place, London, S.W.1.

authorities have announced that on and after that date no horse-drawn vehicles will be allowed in the centre of the city at any time.

One Reason for Delay.

On the eve of the coal stoppage 147 blast furnaces were working in this country, but the total number at the present time is only seven. This accounts in some measure for any delay which may be experienced in obtaining delivery of new cars or spare parts.

Patcham Ey-pass Finished.

Although the new by-pass at Patcham, on the London-Brighton road has now been completed, it will not be available

To All Our Readers.

**A Happy and
Prosperous
New Year.**

for traffic until the Sussex County Council sanctions the opening; it is unlikely, however, that there will be any undue delay.

New Lake District Bridge.

In an effort to improve traffic conditions in the Lake District the Cumberland and Westmorland Councils are arranging to rebuild Eamont Bridge, one of the oldest structures of its kind in the north. As this bridge is scheduled under the Ancient Monuments Act it is proposed to use all the stones of the present structure as parapets and so forth in the new bridge, which will be 50 ft. wide.

Morse Signals.

A correspondent of *The Motor* advocates Morse signals for motorists. The question appears to be "Morse signals or more signals?"



Facsimile of the tablet issued by the R.A.C. in connection with its new lost property service.

An All-round Gain.

The mechanical buffing and heavy labour necessary to obtain the required gloss on nitro-cellulose lacquers have been eliminated by a new method of finishing, which, it is claimed, will speed up production and reduce costs.

French Racing Season.

The opening of the 1927 French motor racing season is fixed for March 27th, on which day the Grand Prix de Provence will take place. This race is one of the most sporting in the French calendar and is run over a course of 182½ miles.

Increasingly Popular.

The use of an oil-burning parking lamp mounted on the off side of the car and arranged to show a red light to the rear is becoming quite general. The police do not appear to have the least objection to these lamps, which, actually, do not comply with the strict letter of the law in that the rear number plate is not illuminated.

"Safety" Motor Spirit.

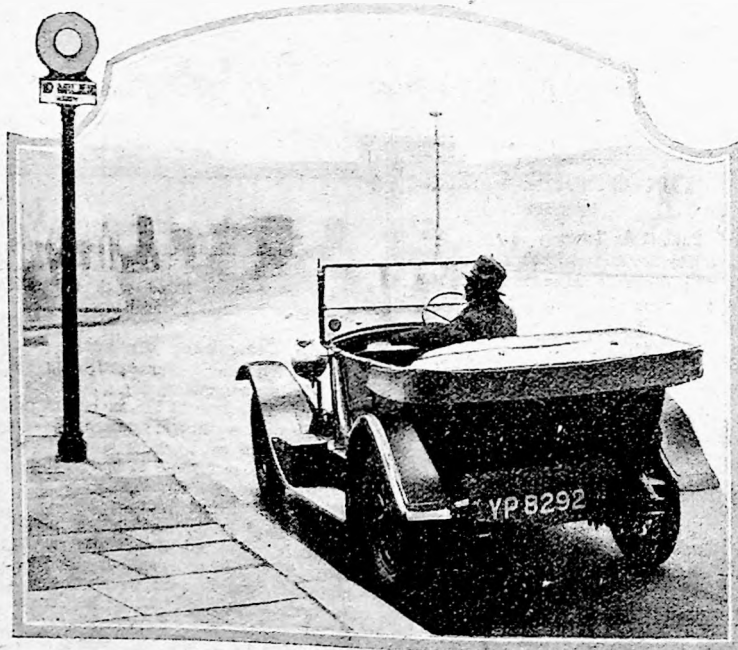
A petrol substitute, known as "white spirit," has been tested successfully in France. According to Reuter it is claimed that the new spirit is non-inflammable at temperatures below 85 deg. F. and, it is said, it is possible to apply a match to it without causing ignition. The spirit is the outcome of experiments to discover a safe fuel for use in aircraft.

Death of Mr. J. F. Moseley.

His many friends will regret the passing, on December 22nd, of Mr. James Fairclough Moseley, M.A., J.P., senior director of David Moseley and Sons, Ltd. Mr. Moseley never fully recovered from an operation which he underwent three years ago, and for some time his condition had given cause for grave anxiety. He did valuable work during the war.

Lost Property Service.

Owing to the large amount of property lost every year from cars the R.A.C. has devised a scheme which will facilitate its return by the finder. To every member or associate member wishing to avail himself of the scheme two ivory identification tablets are issued. These bear a registered number and a request that the finder of the article to which they are attached should communicate with the R.A.C. Further particulars of the scheme can be obtained upon application to the Club.



AN UNNECESSARY WARNING?

One of the few 10-mile speed limits in the West End of London is situated at Hyde Park Corner—a centre where the amount of traffic, as a rule, automatically imposes a much lower speed than 10 m.p.h.

Austin Seven Success.

An Austin Seven taking part in a hill-climb on the Oporto Circuit in Portugal covered the five-kilom. course at 61.65 k.p.h., thus winning the Portuguese Automobile Club's cup for the fastest touring car in all categories.

Road Lighthouse Replaced.

The beacon Lighthouse on the Sidcup by-pass road, recently demolished by a lorry, has been replaced. An application for a similar beacon light at the Cray Road crossing has been refused by the authorities concerned.

Still Going Down.

A further reduction in the price of motor tyres has been made by the Dunlop Rubber Co., Ltd. The company states that this latest reduction is the utmost that can be made at the present time in view of the prevailing costs of production.

The Only One.

The light car showroom opened recently by W. H. Elce and Co., Ltd., at 11, Camomile Street, London, E.C.3, is the only establishment of its kind in the City. Representative models of Clynco, Singer and Austin Seven cars and Morgan three-wheelers are on view. The company's spare parts and service depot is situated at 11-15, Bishopsgate Avenue, London, E.C.3.

R.A.C. Subscription.

With the object of enabling owners of cars of every type to participate in the benefits offered to associate members of the R.A.C. the Club proposes to admit owners of cars with an engine capacity of 1,100 c.c. or under to full associate membership of the R.A.C. at a subscription of £1 1s. per annum without entrance fee. This concession will date from January 1st, 1927. This, in all probability, will result in a lowering of the subscription for the class of member quoted who belongs to a club associated with the parent body.

The Artistic Touch.

The interior of a saloon car may soon become "a thing of beauty" if a decoration scheme recently introduced becomes popular. The idea is to replace plain fillets and so forth by pictorial panels carried out in Chinese lacquer work. Owners of cars that are decorated in this manner will feel compelled to use Ming porcelain in their picnic baskets next summer!



The third annual Southport to Scarborough and return two-day trial organized by the Southport Motor Club was run on Sunday and Monday last. About 50 vehicles, consisting of motorcycles, sidecars and cars, started. The photo shows W. Harvey (Austin Seven) descending from Hlley Moor.

A NORTHERN CLASSIC.

Wolsley Motors, Ltd.—An Offer.

An offer to take over the assets of Wolsley Motors, Ltd., has been made by Mr. W. R. Morris. If the terms are accepted, the business will be run quite independently of Morris Motors, Ltd. It will, in fact, be reorganized on its original basis.

New Lamps for Old.

A useful note in the current issue of *The Advocate*, the Austin car owner's journal, mentions that, no matter how shabby ebony black lamps may be, they can be made to look almost like new with furniture polish.

Wanted in Switzerland.

In the December issue of its official journal, *The Anglo-Swiss Commercial Gazette*, the British Chamber of Commerce for Switzerland (Inc.) has a note to the effect that motor car cleaning apparatus is wanted in that country.

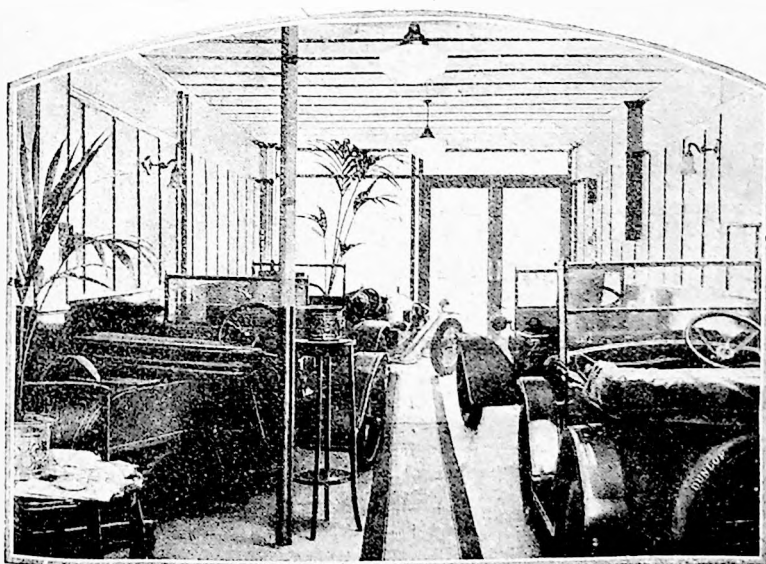
How the Money Goes.

The sum which has been derived from motor-vehicle licences issued during the period from December 1st, 1925, to November 30th last amounts to £18,364,319, this formidable total including the following items:—Cars (taxed on horse-power), £9,054,681; motorcycles, £1,500,972; commercial goods vehicles, £5,228,445; motor hackneys, £2,373,074.

For the Beginner.

Early in the New Year we hope to commence a series of articles which will be written especially for the beginner. The series will be divided under the headings of "The Cyclecar" and "The Light Car," for we appreciate the fact that there is an ever increasing number of adherents to the more simple types of machine. The articles will not aim at deep technical instruction, our object being rather to give a novice just the information which he requires to maintain and drive his light car or cyclecar.

B13



IN THE HEART OF THE CITY.

The tasteful arrangement of the new showroom, the only one of its kind in the City of London, recently opened by W. H. Elce and Co., Ltd., is clearly shown in this photograph.



FUELS OF THE FUTURE

HOW THIS COUNTRY CAN, TO A LARGE EXTENT, BECOME INDEPENDENT OF IMPORTED PETROL—VEGETATION AND COAL AS SOURCES OF SYNTHETIC SPIRIT.



IN a recently issued report the Federal Oil Conservation Board (U.S.A.) stated that the supplies of crude oil in sight in America are sufficient for only six years' demands. Whilst the accuracy of this estimate has been contested by petroleum technologists in that country, we must, undoubtedly, be prepared for a possible reduction in the near future, if not of the quantity of oil produced, at least in that which will be exported from America.

It is not contended that the output of crude petroleum, from which petrol is obtained, shows any signs of diminishing, but it must be borne in mind that the increase in the consumption of oil products throughout the world threatens to outpace the discovery and development of new oilfields. Being alive to this possibility, therefore, scientists are busily engaged in perfecting processes whereby petrol substitutes may be produced, as it were, artificially, because not only might our dependence on imported petrol be a serious military weakness in the event of a future war, but the rapidly increasing value of the imports at the present time constitutes a considerable financial burden. It is, therefore, of the utmost importance that in England we should be prepared to manufacture suitable petrol substitutes to replace or supplement foreign supplies of "natural" spirit.

How far we have advanced towards the solution of the problems involved probably few users of motor vehicles are aware; it will be interesting, therefore, to discuss the various synthetic fuels and the methods by which they are produced.

The Possibilities of Alcohol.

The possibilities of alcohol as a fuel were first brought to the notice of the public by the use of motor spirits containing this compound by racing motorists, who enlisted the aid of chemists in their search for a fuel which would give a greater power output from a given engine than could be obtained with petrol.

The most simple method of manufacturing this alcohol—or ethyl-alcohol, to give it its correct chemical name—is by fermentation of starchy and sugar-bearing vegetable growths, and this process has been developed on a commercial scale in many parts of the world where such vegetation flourishes, as, for instance, in South Africa. It is to be feared, however, that in England, or in any other densely populated country, it will be impossible to manufacture alcohol on an economic basis in this manner from home-grown plants, such as potatoes, beets, and so forth, owing to the high cost of the raw materials.

A considerable amount of experimental work has been performed with the object of producing ethyl-alcohol by synthesis. One method employs calcium carbide as the starting point; by the action of water acetylene is evolved, which, after purification, is converted into acetaldehyde by a special process. The aldehyde in vapour form is mixed with hydrogen and subjected to heat in the presence of a finely divided metal such as nickel; the resultant vapour is passed

through condensers, from which a liquid consisting chiefly of crude ethyl-alcohol is obtained.

While this process may have practical commercial application in countries in which carbide can be produced cheaply by the use of hydro-electric furnaces, there would appear to be little possibility of it proving a financial success at the present time with petrol at such a low price.

Considerable success has been obtained on the Continent with motor fuels which contain as their chief constituent another of the alcohols known as methyl-alcohol, or "wood-spirit." Although this compound has a calorific value much lower than that of ethyl-alcohol, and is, therefore, weight for weight, of less value as a fuel for internal-combustion engines than the last named, it has the great merit that it can be manufactured synthetically at a lower cost.

A German Development.

In Germany the great dyestuffs firm of the Badische Anilin und Soda Fabrik has perfected a process by which a motor spirit known as Methanol, consisting chiefly of methyl-alcohol with small proportions of other compounds, is produced from coke. The first stage in the process is the manufacture of "water-gas," which is a mixture of carbon monoxide and hydrogen, by the passage of steam through incandescent coke. By subjecting the mixed gases so formed, together with an additional amount of hydrogen, to the action of heat and high pressure, in the presence of catalysts, the components enter into chemical combination, with the resulting formation of methyl-alcohol.

It is stated that the German plant is producing this alcohol at the rate of nearly 2,000,000 gallons per year, at a cost of approximately one shilling per gallon, which is, it is significant to note, only one-quarter the price of the same substance obtained as a product of the distillation of wood.

There is also Fischer's process for the production of a fuel known as Synthol, which is manufactured from water-gas by a method somewhat similar to that used in the Methanol system. The product consists of a complex mixture of various alcohols, together with acetone, aldehydes and so forth, which, after undergoing distillation and purification, can be used as a motor fuel.

Any doubts as to the suitability of these fuels for use in present-day engines should be removed by the successful results of the trials conducted by the French Automobile Club. Commercial motors, private cars and motorcycles running on various petrol substitutes having methyl-alcohol as the principal ingredient have been given extended trials under observation, and it was found that the only alteration in engine design required to give the best results was the raising of the compression ratio to about 6 to 1.

It would appear, therefore, that in methyl-alcohol we have a fuel to which we in England may look to supply a portion, at least, of our requirements in the event of a shortage of imported petrol. Although no

commercial plant similar to that in operation in Germany has been constructed, our scientists have not lagged behind those of any other country in carrying out research into the technical problems involved.

For many years benzole, used in admixture with petrol, has been very highly esteemed by motorists, particularly by those in whose engines a fuel capable of withstanding a high compression has been essential to reduce the tendency to "knock." Unfortunately, the quantity produced—as a by-product from the manufacture of coke oven and coal gas—is very limited, and is in great demand by the chemical industry, with the result that the price now ruling is higher than that of petrol.

It has been suggested that benzole—or benzene, to be correct—could be manufactured from acetylene by passing the gas over heated charcoal or coke. Although this process may be worked successfully on an experimental scale, it is very doubtful whether it could be made a practical proposition; it is mentioned merely to indicate one of the directions in which the research into the supply of alternative motor fuels has been carried.

To the last portion of this article has been left the consideration of the manufacture of petrol substitutes from coal and raw material of which in England we have such large reserves. Undoubtedly it is to coal that we must look for the solution of our liquid-fuel problem, and at the Fuel Research Board's station at Greenwich and in the laboratories of many other research chemists an enormous amount of experimental work is being conducted into the most promising of the known processes. Two methods in particular are being investigated—low-temperature carbonization and the hydrogenation process.

Yields from Tar.

The former, as its name implies, is a system by which coal is carbonized at temperatures which are considered low when compared with those employed in ordinary gasworks practice. It aims, not at the manufacture of gas—although this is a valuable by-product—but at the production of the maximum yields of coke and of tar, from which fuel oils may be obtained.

We are not concerned in this article with the solid fuel, or "semi-coke," produced, although it should be noted that this is the most valuable yield; unlike ordinary coke, it can be ignited readily and burns with a smokeless flame, and is, therefore, of great value to replace raw coal for domestic use.

Motor users will, however, be more interested in the oils obtainable from the tar formed, the yield of which varies with the process adopted and depends upon such factors as the coal treated, the type of retort used, the method of heating, the temperature to which the coal is raised and so on. Probably, on an average, two gallons of light volatile spirit suitable for use as a petrol substitute would be obtained from every ton of coal carbonized, although some authorities have given considerably higher estimates ranging up to six gallons per ton.

When it is realized that we burn some 140,000,000

tons of coal in the raw state in this country every year for steam-raising and in domestic fires, it will be appreciated that, if this were replaced by an equivalent amount of smokeless fuel produced by low-temperature carbonization, there would be at least 300,000,000 gallons of home-produced motor spirit available—enough at the present rate of consumption to supply nearly half of our total demands.

While low-temperature carbonization gives us smokeless fuel and a relatively small amount of oil, the hydrogenation process aims at the conversion of coal into oil and gas without the formation of coke. In this process the coal, crushed and mixed with certain other substances, is heated with hydrogen under great pressures of 2,500 to 5,000 lb. per sq. in., when a tarry liquid and a small amount of gas are produced. In this manner up to 93 per cent. of the coal treated has been liquefied in small experimental plants at the expense of 3 per cent. to 10 per cent. by weight of hydrogen.

The tar, when subjected to distillation and purification, yields a light spirit in the proportion of about 25 gallons per ton of coal hydrogenated, which, by reason of its composition, is superior to many of the petrols at present marketed.

Encouraging Research Work.

Owing chiefly to technical difficulties connected with the construction of large plants, the liquefaction of coal has not yet been accomplished on a commercial scale, although as much as 10 cwt. of coal an hour were being dealt with at Mannheim by Dr. Bergius—the originator of the process—more than a year ago.

In England the Government has made a grant of £25,000 for research in the hydrogenation process, which, in the opinion of many authorities, is the only system by which our future oil demands can be satisfied. Furthermore, an affiliation of British chemical and engineering firms of worldwide renown has been formed to purchase shares in the Dutch Makot Co., which owns important rights in the Bergius process.

While at present synthetic petrol cannot compete with the natural product on an economic basis, it will be admitted that it is essential to the prosperity, and even the safety of the nation that we should be in a position to manufacture in this country fuel for internal-combustion engines in the event of a curtailment of supplies of imported petrol. We are fortunate in having in coal a raw material from which liquid fuels can be obtained by various processes: this is a very hopeful outlook.

R.W.D.

It may well be that collieries will supply a large proportion of the motor fuels of the future.

WHY NOT EXHAUST TURBINES?

The Author of "The Limitations of Gas Turbines," published last week, makes some useful suggestions for increasing engine efficiency.

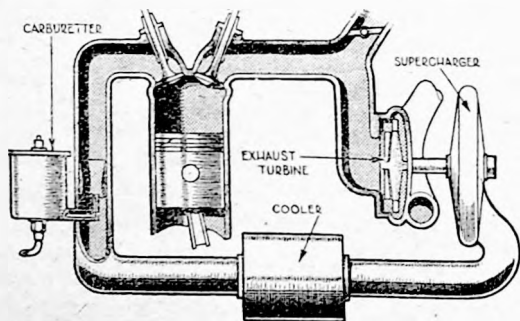
IN a previous article I mentioned how the German inventor Holzwarth was able to increase the efficiency of his internal-combustion turbine and make it a success. He took the steam generated in his cooling-water jackets and used it to drive the compressors.

I will now deal with another turbine designer's efforts to use a turbine to increase the power of an ordinary internal-combustion engine. Before doing so, I will, however, endeavour to give an idea of the truly enormous losses sustained in an engine of the type used in motorcars.

The first thing to be borne in mind is that heat and power are, to all intents and purposes, interchangeable terms, and one is convertible to the other. Many hundreds of careful experiments have proved that the heat required to raise the temperature of 1 lb. of water 1 degree Fahrenheit is capable of producing 778 foot-lb. of work, and readers can visualize many simple instances of the relationship which exists between these two properties of matter.

If heat is applied to water, the water turns to steam, which can be used to drive an engine. The gas mixture in the cylinders of a car engine is fired, and the heat generated causes the gases to expand so violently that the popular conception has it that they explode. When the brakes are applied for any length of time, the drums get hot in absorbing the power required to reduce the speed of the car.

On all sides we have evidence of the relationship that exists between heat and power. And yet when we examine a car we see evidence of hundreds of heat and power units going to waste. The water jackets and



The general principle of an exhaust turbine-driven supercharger is depicted in this diagram. In practice the layout is rather more complicated.

radiator waste more heat and power than is actually produced at the flywheel. When we examine the lubricating oil at the end of a long run we find that it is nearly at boiling temperature, despite the fact that it has lost a lot of heat through the aluminium walls of the sump.

The exhaust manifold and pipe share with the silencer the distinction of being the biggest power wasters on the car. An examination of an indicator diagram of an engine reveals the fact that the exhaust valves open against a comparatively high pressure, which, if properly harnessed, would produce a very large source of power.

Evidence of this power is easily obtained by any motorist who is energetic enough to remove the exhaust

GOES TO
DRIVE CAR

EMERGES FROM END
OF EXHAUST PIPE

FUEL WASTE IS ONE OF THE
GREAT DRAWBACKS OF A
PETROL ENGINE.

IS
LOST
IN
RADIATOR

This sketch shows how £5 worth of fuel is used in an average engine. It will be seen that the heat losses are very large.

manifold of his engine. The fierce, powerful jets of flame which issue like big torch flames from the exhaust ports must surely strike even the most unimaginative of men as a prodigious waste of power. They must bear evidence, too, of how far the internal-combustion engine has to go along the road of progress before it is even a passably efficient machine.

The results of some very exhaustive tests on a side-valve car engine of rather better than average design by Mr. H. Ricardo revealed some facts which, while being known to engineers for years, are, nevertheless, of a rather sensational character.

Interesting Figures.

The tests reveal the fact that under the almost perfect conditions of a test shop no less than 48.2 per cent. of the total amount of heat available in the petrol is lost by radiation from the crankcase and sump and down the exhaust pipe. The water jackets and radiator waste 26.2 per cent. more, while mechanical losses represent a further 2.7 per cent. Under perfect conditions only 22.5 per cent. reaches the flywheel and is available for driving the car. To reduce this to a commercial formula it is safe to say that under so-called ideal surroundings 15s. out of every £1 spent in fuel is wasted.

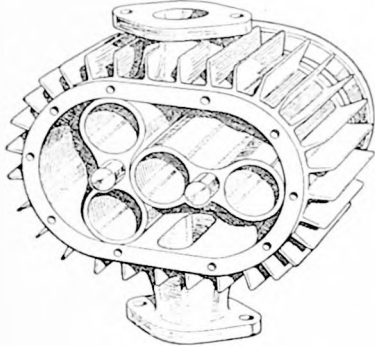
When, however, we come down to ordinary road conditions, the efficiency is even lower, and when the engine is ticking over in traffic, on middle gear, the efficiency drops to less than 5 per cent.; it is doubtful, in fact, whether the average efficiency of an engine throughout the whole of its working life is over 15 per cent.

In the past we have been very prodigal in our use of fuel, but the warnings that come from America of a fuel shortage should warn us that petrol must not be wasted. It is, therefore, time that the question of designing a new and more economical engine was opened up.

In 1916, with the idea of evolving a supercharger to enable an aero engine to maintain its power at high altitudes, Dr. Rateau, the turbine designer, made a turbine driven by exhaust gases. This drove the supercharger. Excellent results were attained by this instrument and at least one altitude record was broken with its aid.

The exhaust gases of a 300 h.p. aero engine were fed into the turbine, which ran at between 25,000 r.p.m. and 30,000 r.p.m. and developed no less than 50 h.p. The rotor of this machine was 18 centimetres in diameter (approximately 7 1-10 ins.) and weighed about 6½ lb. The whole turbine and the supercharger weighed 80 kilograms (176 lb.). Of this nearly half was due to the supercharger.

The very high speed of the turbine is necessary for the avoidance of back pressure. The exhaust gases emerge from the cylinders at an immense velocity, and by shaping the rotor blades correctly this velocity is very little decreased. If, however, the blades were shaped to give the turbine a lower speed, the gases would be slowed up and back pressure would occur; this would cause a loss of power and tend to offset the advantages of the turbine.



A Rootes blower-type of supercharger which runs at a much lower speed than the fan-like turbine-driven type.

Following upon the same lines is the exhaust turbine designed and built by the firm of Brown, Boveri, for use with a 500 h.p. Diesel engine. This turbine delivers 50-60 kilowatts, which is equivalent to an addition of 13 per cent. to 15 per cent. of the power output. The engine runs at 400 r.p.m. and the turbine at 8,200 r.p.m. A great feature of the device, as in the case of the aero engine exhaust turbine, is its extraordinarily light weight and the fact that the increase in power is not accompanied by *any* increase in fuel consumption.

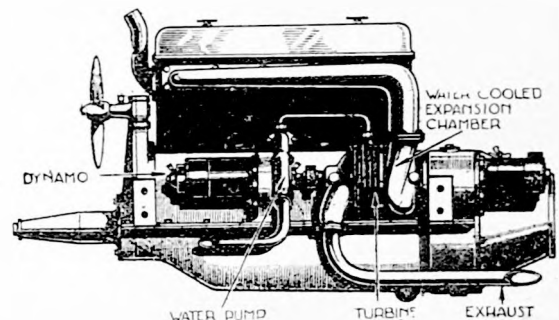
Now let us apply these results to normal light car design and see how the application of an exhaust turbine would benefit us directly. Rateau's results show an increased power of 16 per cent.; Brown, Boveri's, of 13 per cent. to 16 per cent.; there is no reason, therefore, to believe that less than 15 per cent. additional power would result from the adoption of this fitting on a light car engine.

Assuming that the engine, when running on three-quarter throttle, develops 20 h.p., which is a quite modest estimate, the turbine would develop 3 h.p. But, even at the risk of labouring the point, I wish to emphasize again that this 3 horse-power is something for nothing, for it involves no extra fuel consumption.

Observant readers will notice that this power represents but a small fraction of that lost down the exhaust pipe, and there is no reason why it should not be doubled after a comparatively short period of development. So far, I can see no detrimental results likely to be involved by the use of the device. I can, in fact, believe that benefits would accrue because the exhaust gases would be caused to cool and expand when passing through the turbine, and it is doubtful, therefore, whether a silencer would be required.

In appearance the turbine is not unlike a water-circulating pump. It is but little bigger and heavier, and through the medium of a single-step reduction gear it could be coupled to such engine auxiliaries as the water pump, oil pump and dynamo. Enough power would, however, be available to drive a dynamo generating considerably more current than the existing type, and there is no reason why, in the course of time, the surplus electricity could not be put to such useful work as changing gear and, through the medium of solenoids, applying the brakes in addition to its usual functions of starting the engine, lighting the lamps and operating the windscreen wiper.

The engine, relieved of the job of driving these auxiliaries, could add the power thus saved to that



By using an exhaust turbine, "free" power would be available for driving the dynamo, water pump and so forth.

used in driving the car, with the result that the general performance would be considerably improved and a light car engine with a turbine auxiliary could propel a much larger vehicle than is possible to-day. On the other hand, a smaller engine could be used to propel the existing type of light car, with the result that fuel consumption would be considerably reduced.

BY-PASS SCHEME IN CENTRAL LEEDS.

EVER since the days when pack-horses brought their loads of cloth over Leeds Bridge, much traffic has passed up Briggate towards North Street, and although the stations, sidings and canals are in another direction, the present-day growth of road transport has further congested Briggate, a thoroughfare with two lines of trams and not capable of easy widening beyond its existing quite moderate dimensions.

In recent years Vicar Lane—running, roughly, parallel with it—has been widened, and now helps to ease the pressure, but in order that the business houses near the River Aire may experience full benefit from the great road development on the lower side of North Street, a scheme has now been inaugurated for widening the Calls, that narrow thoroughfare skirting the north side of the Aire from Leeds Bridge, where it joins lower Briggate, to Crown Point Bridge, behind Leeds parish church. Very narrow and with quite inadequate footpaths, the Calls carries a considerable volume of heavy traffic.

By linking it up through the Marsh Lane district to Sheepscar, a way will be provided by which this commercial traffic from Leeds Bridge can get out of the

city, either north to Harrogate or north-east to York, without traversing Briggate or Vicar Lane. As both the last-named streets converge into North Street, the congested in the latter narrow route will be very much reduced.

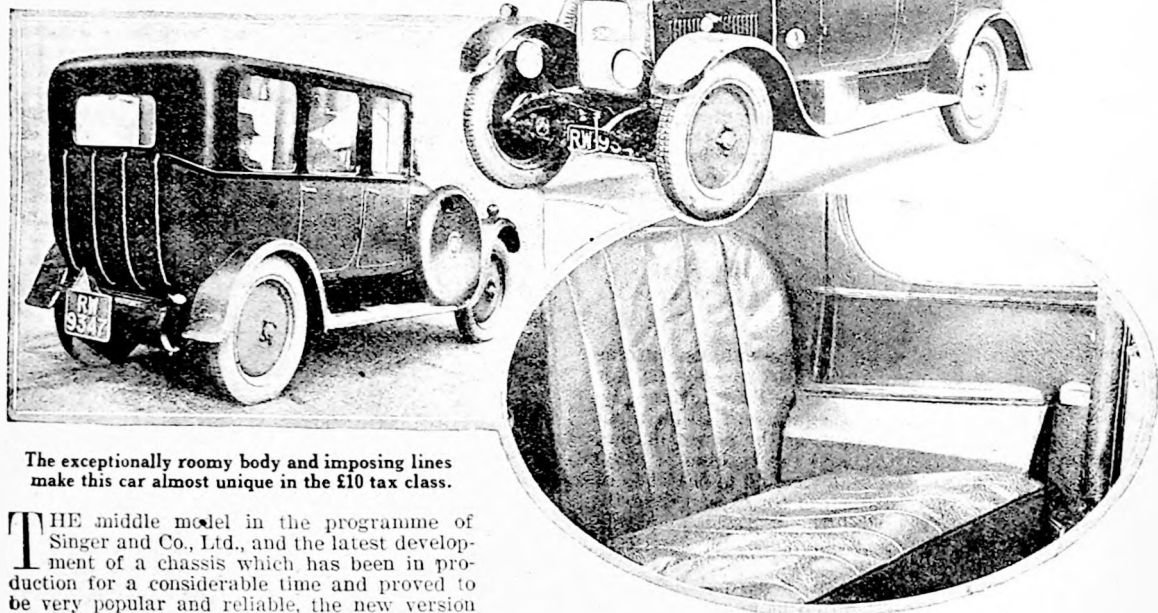
A start has already been made by demolishing a number of old warehouses fronting on to the Calls, and negotiations are in progress for the acquisition of other premises between the part already cleared and Briggate, so that the whole length of the Calls may be widened to 50 ft.

The Sheepscar end of the outlet route is on the point of completion, the covering in of the Sheepscar Beck and the main sewer under the cleared ground being almost finished. A large area has thus been opened out where the traffic of five important arteries will converge. One of the largest Leeds motor firms is opening filling stations, works and garages near this point.

It is possible that Swinegate, which joins the Calls at Leeds Bridge, may ultimately be developed, thus linking up the eastern riverside to City Square and the railway stations.

Road Tests of 1927 Models.

The SINGER SENIOR



The exceptionally roomy body and imposing lines make this car almost unique in the £10 tax class.

THE middle model in the programme of Singer and Co., Ltd., and the latest development of a chassis which has been in production for a considerable time and proved to be very popular and reliable, the new version of the 10-26 h.p. Singer is up to date in every respect. It differs from the 1926 models principally in that the top gear has been reduced from 4.54 to 1 to 5 to 1 (the other gears being reduced proportionately), the bonnet has been entirely redesigned and is now of the conventional type, the petrol tank has been moved to the rear, semi-elliptic springs in front replace the quarter-elliptic type, and shock absorbers are now fitted all round. In addition, the equipment has been substantially enhanced and a considerable number of refinements introduced.

The particular model we have been able to test over 750 miles is the £260 saloon, and it differs from standard in that in place of 28-in. by 4.95-in. balloon tyres on artillery wheels being fitted, it has 21-in. (rim) by 4-1/2-in. medium-pressure tyres on disc wheels. The effective diameter of these is materially greater than that of the standard tyres, which, of course, has a similar effect to raising the gear ratios. Some misgiving was felt on this account, but we were particularly anxious to experiment with medium-pressure tyres, and considered that the reliability of these merited the drop in top-gear performance which their fitting might be expected to produce.

In point of fact, however, the 63 mm. by 105 mm. 1,308 c.c. o.h.v. engine, although rated at only 9.8 h.p., is able to deal with the high gear in a quite convincing manner, in spite of the fact that the car, unladen, but with tanks filled and all the usual equipment aboard, weighs no less than 21 cwt.

It has been found that the best speed obtainable under normal conditions is slightly more than 45 m.p.h. (a better speed would probably be obtainable with the smaller wheels). In second gear (0.28 to 1) 25 m.p.h. is comfortably maintained and in bottom gear (17.1 to 1) freak hills can be surmounted confidently with a full load at about 10 m.p.h.

An outstanding feature of the car is the really splendid riding comfort. The new half-elliptic gaitered front springs and the presence of friction shock

absorbers all round smooth out even the roughest roads, whilst the extraordinarily comfortable and well-built body provides a revelation of the remarkable value which can be given to-day for £260.

Dealing with the car from the driver's point of view, the following features may be noted. The separate driving seat is instantly adjustable, so far as its fore and aft position is concerned, the steering column is adjustable for rake and the pedals for reach. The gear and brake levers (right hand) are exactly where they should be, and the lighting switch, electric and bulb horns are equally conveniently placed, whilst the instrument board is nicely in view and is fitted with a light which illuminates all the dials at night.

The windscreen, of the single-panel type, is hinged at the top and opened by a screw fitting in the centre, and an automatic screen wiper is supplied as standard. The window adjoining the driver is of the sliding type and very convenient for signalling. Above the windscreen is a driving mirror which provides a good view of the road astern through the generously proportioned back window.

The comfort of the passengers has been studied on equally practical lines. The body has four doors, three of the windows are provided with wind-up lifters of the latest type, the back window and the two quarter-lights have blinds; there is a hat rack on the roof, a cubby-hole in the fascia board, ventilators in the scuttle, lockers and ash-trays in the rear-seat arm-rests, two interior lights in the back corners of the roof, and, above all, pneumatic upholstery all round, with good-quality carpets on the floor.

Creature comfort has also been most carefully considered so far as space is concerned, and it is no exaggeration to state that either the driver or any of the passengers might believe themselves to be in a 15 h.p. or 20 h.p. car, for the body is spacious in every dimension and really seats five in greater comfort than do many cars claimed to be five-seaters.

When driving the car one is attracted by the lightness of the steering—which, however, would be more comfortable on long runs if it were of the irreversible type—by the very easy gear change, by the light and sweet clutch, and by the very powerful and positive brakes. Both the f.w.b. system and the hand brake, which expands separate shoes in the rear-wheel drums—making six brakes in all—are easily operated and powerful in action.

The foregoing sounds somewhat on the fulsome side, which is due to the fact that it is difficult to find anything to criticise. Trying to find fault, one would suggest that lighter reciprocating parts in the engine would give quieter and sweeter running at over 40 m.p.h. on top and over 20 m.p.h. on second. More robust brake gear would provide the feeling of solidity which many people like, and a more imposing wind-screen frame would extend promise of more prolonged weatherproofness at the point where the screen joins the scuttle. The hand throttle might be improved by being made less sensitive at small openings.

On the score of maintenance it is also most difficult to criticise this car. The principal point which occurs to one is that a dip-stick to show the oil level in the crankcase would be an improvement on the present arrangement which entails making a puddle of oil on the garage floor whenever the level is checked. Something better than the baby oil for the bearing at the top of the steering column would be another improvement, whilst a cork or fibre gasket between the valve

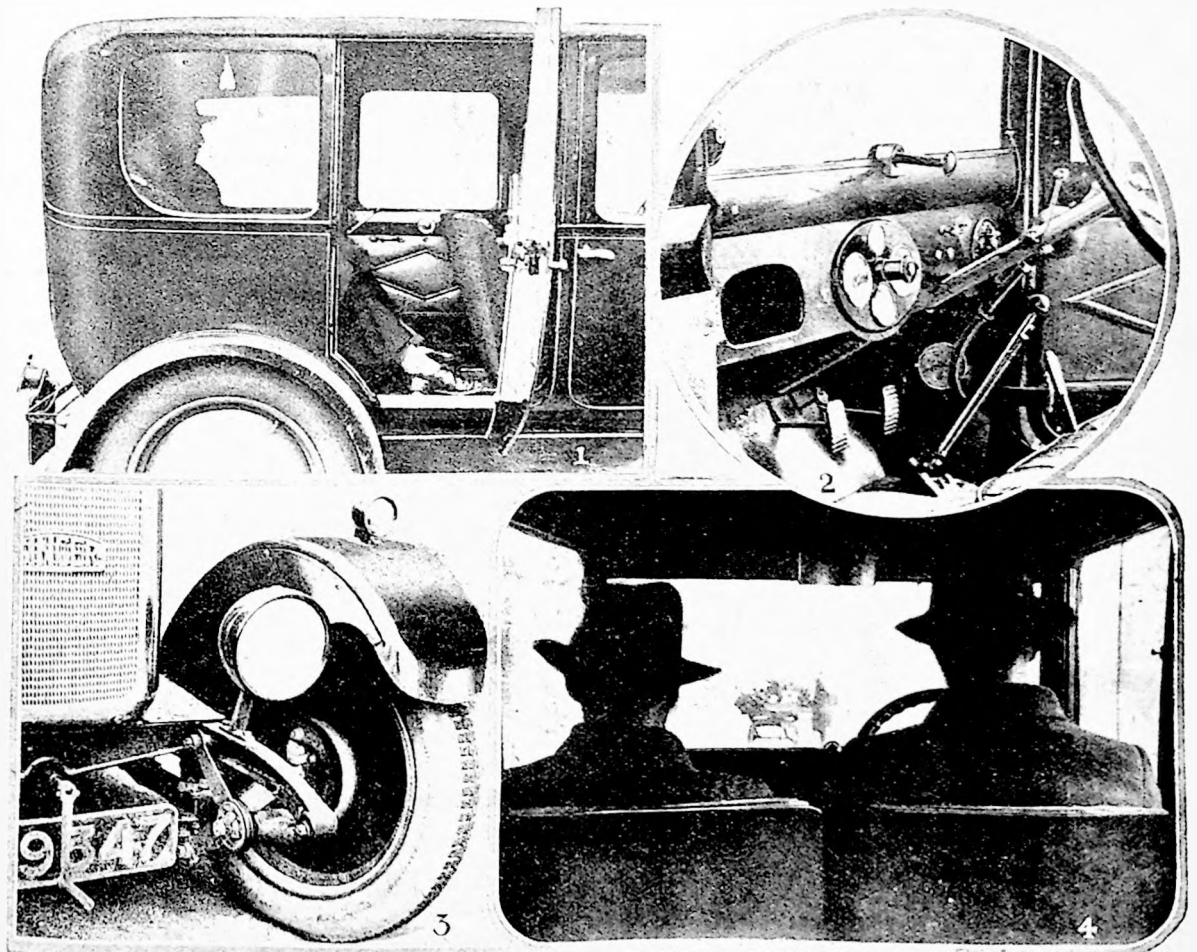
cover and the head would be more durable than the rubber packing supplied.

These are not very important criticisms, and offset against them is the fact that points requiring to be greased are very accessible and easily attended to with the push-on gun supplied, the brake adjustments are straightforward and accessible, the engine oil filter can be cleaned without loss of oil owing to its being mounted in one of the bearer arms, the gearbox filler is most convenient, and the same applies to the rear axle filler, which is now placed on top of the casing.

Praise is deserved for the o.h.v. gear which is fed with oil under pressure and is very easy to adjust should this ever become necessary, but criticism can be levelled at the magneto mounting and method of drive which is by a taper fixing on the armature shaft, and this, should trouble ever come, is anything but ideal.

The particular car under review has averaged 20 m.p.g. to date over give-and-take roads and mostly on short journeys with a 105 main jet in the Solex carburettor. This was fitted in place of the 100 jet supplied with the car and has appreciably improved the top-gear performance.

At 600 miles a quart of oil was added to the engine sump, and, so far as one could judge, this was the amount which has actually been used. The engine has proved to be amply cooled, and a radiator mull has, indeed, been used continuously to keep it adequately warm. The Rotax 12-volt lighting and starting equipment has proved absolutely reliable.



(1) Showing the leg-room available for a 6-ft. passenger. The front seat is shown adjusted for a 5-ft. 10-in. driver.
(2) The facia board and controls have been well thought out. (3) The new front springs and shock absorbers.
(4) The unobstructed view provided by the single-pane screen.



RICH MIXTURE

LIGHT CAR COMMENT AND ADVICE

Focus

Enter 1927.

FATHER TIME takes his last stroke with the scythe to-day, and then another year will be sheaved and garnered into the past. It has been an eventful year with the general strike and the coal stoppage, but, so far as the weather is concerned, a wonderful one for motorists. Christmas this year fell on a Saturday, and ancient saws were published to the effect that when this happens the following year will be one of continuous bad weather. Well, the last time Christmas occurred on a Saturday was in 1920, and 1921 was the sunniest and driest on record! So much for prophecy. Let us hope that it will be as signally falsified again!

The Fire Risk.

A QUESTION I have never seen satisfactorily answered is why do cars frequently, and aeroplanes almost invariably, burst into flames after a crash? This melancholy accompaniment of an accident is so common that it is becoming accepted as inevitable, and one rarely hears of coroners or juries inquiring as to the cause. Yet surely it should be investigated.

In numerous cases fire has turned a mishap into a disaster and people who would have escaped with perhaps a broken limb have perished amid flames. A motoring friend of mine who is in the insurance business says that as regards cars he is inclined to suspect the accumulator. It is well known that the gases from an accumulator are inflammable, and his theory is that in the crash the accumulator becomes shorted, catches on fire and so ignites petrol from the carburettor or a damaged tank.

Safety Petrol Tanks.

ONE wonders, in this connection, why "unburst-able" tanks for aircraft are not made the subject of greater study. I remember seeing a patent tank during my own flying days through which a bullet could be fired without more than a few drops of spirit being lost, whilst the same tank could be dropped from a great height without bursting. If my memory serves me, the principle of construction was rather involved, the

expansion and contraction of a form of rubber jacket serving to prevent leakage.

It would be interesting if the appropriate department of the Air Ministry published a report setting forth the pros and cons of safety petrol tanks and describing the successes and failures of types which have been tried.

Unnoticed Decrepitude.

AS with mortals, age in a car creeps on almost imperceptibly, and many a man who has used his first car for a couple of years may be unaware how far it has fallen away from the standard it attained when new. Of course, a decline in engine performance is soon noticed, especially on hills, but deterioration in such things as smooth running, brake power and suspension is not so apparent, the comparison after a year or two becoming elusive.

I have known cars that have been in a state of positive decrepitude, "looseness" being present everywhere, and yet the owners have been blissfully unconscious of the fact. For this reason it is useful when opportunity offers to take a ride in a new car of the same make. It is apt to be illuminating!

Signs That Glow in the Night.

I SHOULD not be at all surprised if, in the near future, the letters of every important road sign are built upon the reflex system, which consists of utilizing reflex discs in much the same way as electric bulbs are used for illuminated advertising displays.

Driving towards London along the North Road last week, I was almost startled by the distinctness with which these luminous notices were reflected by the comparatively poor beams of my side lamps: the letters appeared to be made of metal brought up to a red heat. This was in the gloaming, and when I switched on my headlights, the signs were as brilliant as if they had been of the real luminous order. I believe that these reflex signs are convincing many cyclists who will not go the whole hog and fit a red rear lamp of the wisdom of carrying such a device on the rear fork of their machines.

Where Ignorance is Bliss.

INCIDENTALLY, this brings me to the need for giving to cyclists who fit red rear reflectors a little useful advice. These reflectors are practically useless unless they are mounted in a plane at right angles to the road surface, and, of course, facing overtaking traffic. The easiest way of fixing them, apparently, is to clamp them in position about one-third of the way up the rear mudguard, and I proved to my satisfaction recently, by the simple expedient of following—very cautiously as I had only my side lamps on—a cyclist who had one fitted in this way, that his reflex was absolutely valueless.

The particular type he was using appeared to be of the very cheapest, however, and this, in a measure, probably accounted for its inefficiency, but it was rather horrifying to think that this cyclist was sailing along serenely and blissfully unconscious of the fact that the safeguard which he thought he was employing was absolutely useless. I believe that a really good reflex light can be obtained for just over 2s. The basis of it is a mirror on which a red glass is mounted.

Wind-up Side Screens.

A LETTER is to hand from Mr. S. F. Edge, calling my attention to the fact that an A.C. was produced with celluloid windows of the wind-up type so far back as July, 1923. I gave the credit recently for introducing this development

to the Standard Motor Co., and think that, in spite of Mr. Edge's letter, they are still entitled to it, for they applied the scheme to a full-sized four-seater touring car, whilst the A.C. screen figured on a two-seater drop-head coupé and really consisted of the conventional type of drop window, but using celluloid in place of glass. Mr. Edge, nevertheless, was complimented, rightly, in my view, by myself and many others when his "Aceca" body made its first appearance.

The Cross-over Step?

WAITING for petrol at a garage I saw a big car draw away with a pronounced wobble on the near-side rear wheel.

"E ain't 'alf got a Charleston on it, 'asn't 'e?" was the comment of the youth at the pump.

In Praise of Robert.

THE spells of foggy weather that we have experienced this year must have been trying times for policemen on point duty. It was bad enough for the nerves to have to cross a road; but to stand in the middle of it—with a dark blue uniform making one almost invisible to the half-blinded drivers of vehicles all round—must have been a job too awful to contemplate.

The worst task that I know to have fallen to the lot of a policeman during the last few weeks was looking for motor bandits. Nasty, well-armed fellows who shoot on sight.



KYLE SKU
FERRY.

The most northerly of the ferries on the west coast of Scotland, this picturesque crossing is justly famed for its beautiful setting. The motor boat is run by the R.S.A.C.

A few days ago I left Manchester in the evening, bound for London, with a new car. The night was cold and the hoar frost lay thick on the ground. As the engine was new and stiff it was nearly two o'clock in the morning before I reached Hitchin. Outside the town I saw a red light flashed by a policeman who held me up to examine my licence and take particulars of the car. He informed me that he was on special duty looking for some motor bandits reported to be in the district. So far as I could see, his whole armament consisted of a stout stick and a powerful-looking dog—little enough to face a gunman with.

An Obstinate Starter.

MUSING on the advice given recently concerning the use of boiling water poured on the carburettor when an engine is obstinate in starting up, I wondered whether such an extreme measure would ever nowadays be called for; I was soon to find out, for within seven days I was faced with an engine that simply would *not* start.

The spark was there, the "juice" was there; in fact, everything was there, but not a sign of life could I get. Finally, I tried the boiling-water tip. No, they did *not* live happily ever after—the warmth had no effect at all and the engine was not started until I persuaded a strong friend

to swing the starting handle whilst I "jiggled" the controls. But this was the first time an age-old tip has let me down.

Wheels and Woes!

TAKING over a brand-new car the other day I was unlucky enough to pick up a small nail in one of the tyres. I quickly made the discovery that the jack would not go under the axle and had, perforce, to place it under the spring; but there was worse to come. The punctured wheel came off fairly easily, but the spare simply would not go on. It was of the wooden artillery type, the stud holes were not bushed with metal tubes and the wood had swollen. After fruitless labour I decided to replace the punctured wheel and drive slowly to the nearest garage rather than spend more time changing tubes. It required a fairly hefty drill to clear the holes, and I wasted quite an hour before I was on the road again.

Stories with Unhappy Endings.

HOW is this for sheer bad luck? Quite recently I was reassembling an engine after decarbonizing, and was putting the finishing touches to the eighth of the side valves. The spring was nicely levered up and the cotter all ready to slip into position. It slipped and fell through an oil drain hole communicating with the sump!



UNABATED
PUBLIC INTEREST.

— The "Exeter" added yet another proof to our argument that the public is intensely interested in road trials. Here is a fine view of the difficult bend of Salcombe Hill, showing F. B. Baker (Rover) ascending under the critical gaze of hundreds of onlookers.

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Looking Ahead.

THE New Year starts to-
morrow. It should be a
good year for motorists.
There are reasons to believe
that it will witness a fur-
ther heavy blow—possibly
even a death-blow—being
struck at the horse-power
tax, and it is almost certain
to pass down to posterity as
the year in which the Road
Vehicles Bill emerged from
obscurity and proudly took
its place in the Statute
Book.

There are indications
that before the New Year is out there will
be a resumption of serious competition work.
Already the trade is beginning to discuss the
matter, and the likelihood of representations
being made to its society with a view to a
limited number of approved events being autho-
rized is forecast for the near future. *The Light
Car and Cyclecar* holds views in this connection
which are too well known to need repeating.

Another 1927 development will be—we feel con-
fident of this—the arrival on the market of more
British light cars in the 1,100 c.c. class. A lead
has been given by Singer and Riley during 1926,
and it is extremely probable that others will fol-
low. The "growing up" of current light cars is
likely to continue, we believe, but not on the same
reckless scale as we have witnessed during the
past two or three years. Many light cars have
now become so heavy that nothing save redesign-
ing the engine would justify further elaboration.
There is talk in some quarters of an impetus being
given during 1927 to the 1½-litre six-cylinder
engine, but we shall not expect to see more than
one or two at Olympia next October.

Dreams Coming True?

IN last week's issue the difficulties which attend
the design of gas turbines for use in motorcars
were set forth, but it must be remembered that
when Watt and Newcomen began to build steam
engines they came up against snags which, in
those days, must have seemed quite as insuperable
as those which beset modern gas turbine builders.
It is reasonable to suppose, therefore, that one
day a power unit of this type will be available for
use in whatever is then the equivalent of the
modern light car.

In this issue the writer of the article to which
we have referred suggests that the efficiency of
present-day engines could be increased by no less

than 15 per cent. by the
simple expedient of utilizing
the exhaust gases to drive a
turbine which, in turn,
could drive a large dynamo,
the water pump, fan and so
forth, thus setting free a
useful amount of power to
be added to that used in pro-
pelling the car. The idea
has already been used in
aeroplanes with consider-
able success; it would seem,
therefore, that experiments
with an exhaust turbine on
a light car engine might be
expected to bear fruit.

Another possible source of power in the future
is electricity broadcast from generating stations
and collected by an aerial on the car. Electric
motors are an almost ideal source of power, but
many years must elapse before this Utopian dream
can come true.

Faded Licences.

A CASE of considerable importance came up
before the Willesden magistrate recently,
when a motorist was summoned for using a car the
licence of which was not legible. The defence was
that, according to the Motorcar Act, a motorist
was not permitted to strengthen the lettering, but
the police quite rightly pointed out that the faulty
licence should have been returned to the issuing
authority, who would then have provided a new
one free of charge, assuming they were satisfied
that the holder of the licence was blameless.

The whole difficulty is that there is no room for
all the clauses in the "Road Vehicles (Registra-
tion and Licensing) Regulations, 1924," in the
registration book, and the average motorist has
only the vaguest idea of their requirements. Even
if he were told that copies could be obtained from
any of H.M. Stationery Offices, price 7d. net, it is
doubtful if he would go to the necessary trouble
to acquaint himself with the details. Naturally,
the registration book contains only information
directly relating to registration, and the authori-
ties would appear to have done their best to draw
the attention of motorists to all the requirements
of the case by means of a bold foot-note.

Towards the end of the season many licences
suffer from fading, and it would be as well, there-
fore, if the public fully understood their respon-
sibility in the matter. This is plainly set forth
elsewhere in this issue. The instructions are per-
fectly clear and perfectly concise; but why, we
ask, cannot licences be filled in with indelible ink?

Topics of the Day



gal Aspects.

THE FADED LICENCE.

THE IT OF THE LAW.

THE recent conviction of a motorist for having a car licence the lettering of which had become faded has excited a considerable amount of comment. It was suggested by the defendant in that case, and it has since been suggested in various newspapers, that he was in a dilemma. He could not, it was said, follow the magistrate's advice and ink in the figures and letters himself, as he was forbidden by the licensing regulations, and he was, therefore, in the unhappy position of breaking the law by having a faded licence, and at the same time being unable to remedy this infringement, except by a further one.

If this were, in fact, the case and if there were no other course he could have taken, the motorist referred to might indeed be deserving of sympathy. His only right to sympathy, however, rests in his ignorance of the law, for not only is a motorist probably entitled to re-ink the letters or figures on his licence, but, even if he is not allowed to do so, there is another very simple and inexpensive course he can take.

It may be of use, therefore, to examine the regulations as to licensing and see what the law actually says. Section 5 of the Road Vehicles (Registration and Licensing) Regulations, 1924, is as follows:—

"No person shall (either by writing or drawing or in any other manner) alter, deface, mutilate or add anything to any licence for any mechanically propelled vehicle, nor shall any person exhibit upon any mechanically propelled vehicle any licence which has been altered, defaced, mutilated or added to, or upon which the figures or particulars have become illegible, or the colour has become altered by fading or otherwise. . . ."

What is the Meaning of the Act?

Subsection 4 of Section 13 of the Roads Act, 1920, makes it an offence, *inter alia*, to forge or fraudulently alter a licence or registration book, but this, of course, does not apply to the present case, where there is no question of fraudulent alteration.

It may seriously be questioned whether a mere re-inking of the figures already written on a licence is an alteration or addition within the meaning of the former section.

Certainly what is contemplated by the Act is an alteration or addition which, in the ordinary sense of the words, would result in the licence reading differently in some word, number or letter than when it was originally issued. It seems very doubtful if a Court could, under this section, properly convict a defendant who had merely made his licence legible by re-inking the faded letters or figures.

However, even if such an act could be considered an alteration or addition within the meaning of the

section, there is another remedy for the motorist, which, if a little more troublesome, is no more expensive. By Section 13, Subsection 1, of the 1924 Regulations referred to above:—

The Official Instructions.

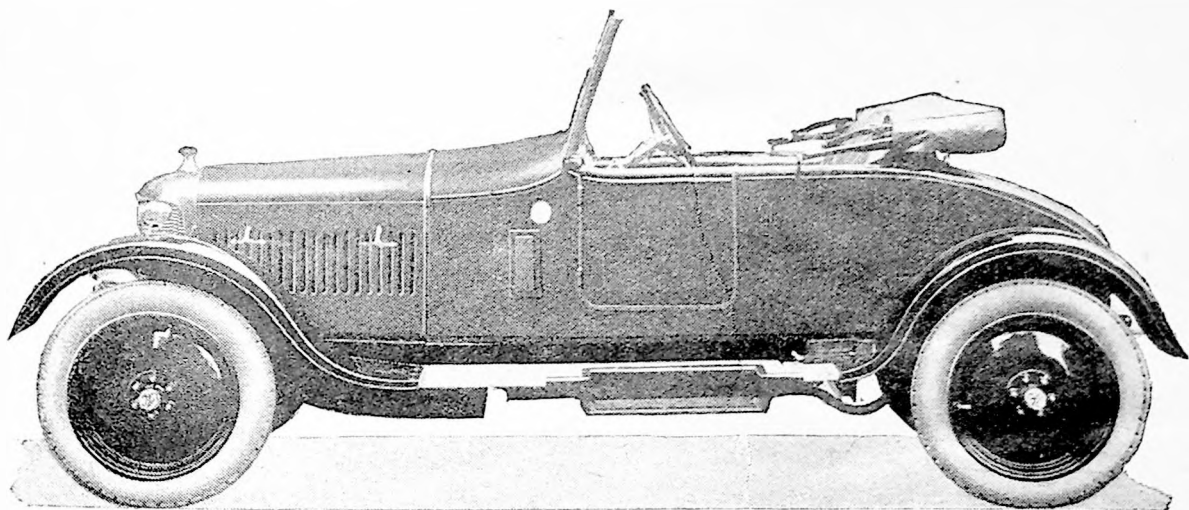
"If a licence granted or a registration book issued by a council under these regulations has been lost, destroyed or accidentally defaced, or the figures or particulars have become illegible or the colour thereof has become altered by fading or otherwise, the owner of the vehicle shall apply to the council with whom the vehicle is registered for the grant or issue to him of a duplicate licence or registration book, as the case may be, and the council upon being satisfied as to such loss, destruction, defacement, illegibility or alteration as aforesaid and where the licence or the registration book has been accidentally defaced or the figures and particulars thereon have become illegible or the colour thereof has become altered by fading or otherwise, upon the receipt of the licence or registration book shall issue a duplicate so marked on payment of a fee of five shillings, and the duplicate so issued shall have the same effect as the original licence or registration book. Provided that where the council is satisfied that the figures or particulars have become illegible or the colour of the licence has become altered by fading or otherwise without any act or neglect on the part of the holder of the licence, they shall issue a duplicate so marked, free of charge."

In other words, all the defendant in the case referred to need have done was to go to the council, point out the illegibility and, if he had been keeping his licence in a proper licence-holder according to the regulations, he could have obtained another free of charge. Clearly if his licence had been kept in the weatherproof container there could have been no act of neglect on his part; in any event, if it was his fault, it would have cost him only five shillings.

Every owner should bear in mind that it is an offence, punishable with a fine not exceeding £20, to have an illegible or faded licence, and if his becomes so he must go to the council and obtain a duplicate.

It is no defence to a charge of having an illegible or faded licence to show that all steps reasonably practicable have been taken to prevent it becoming so, although this is a good defence to the charge of having an obscured number plate.

It must also be remembered, in connection with all offences, that the "owner," for the purposes of the Motor Car Act or the various Regulations under it and the various other Acts connected with it, means owner for the time being, and would include not only a hire-purchaser, but a hirer for a considerable period, e.g., a year.



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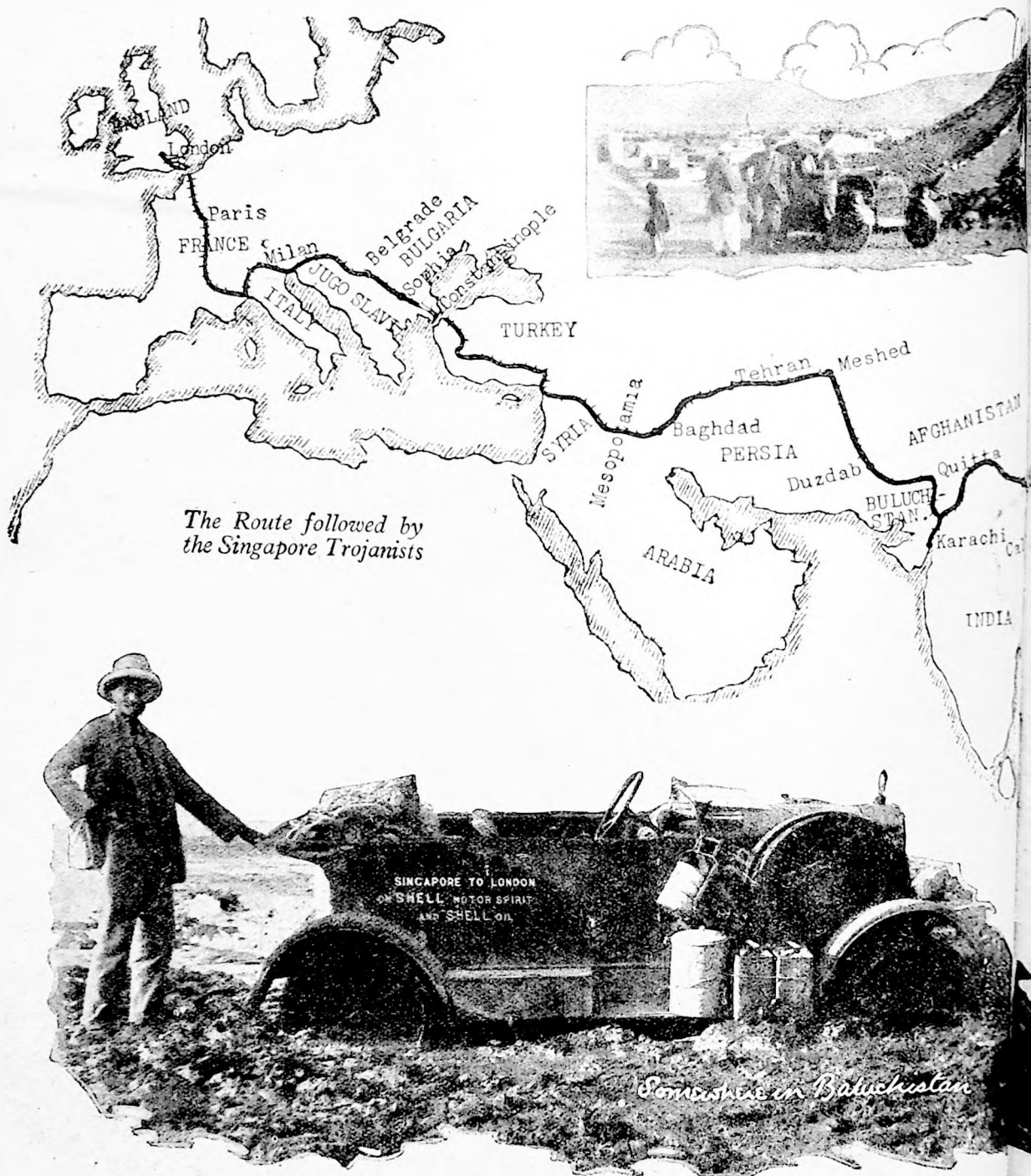
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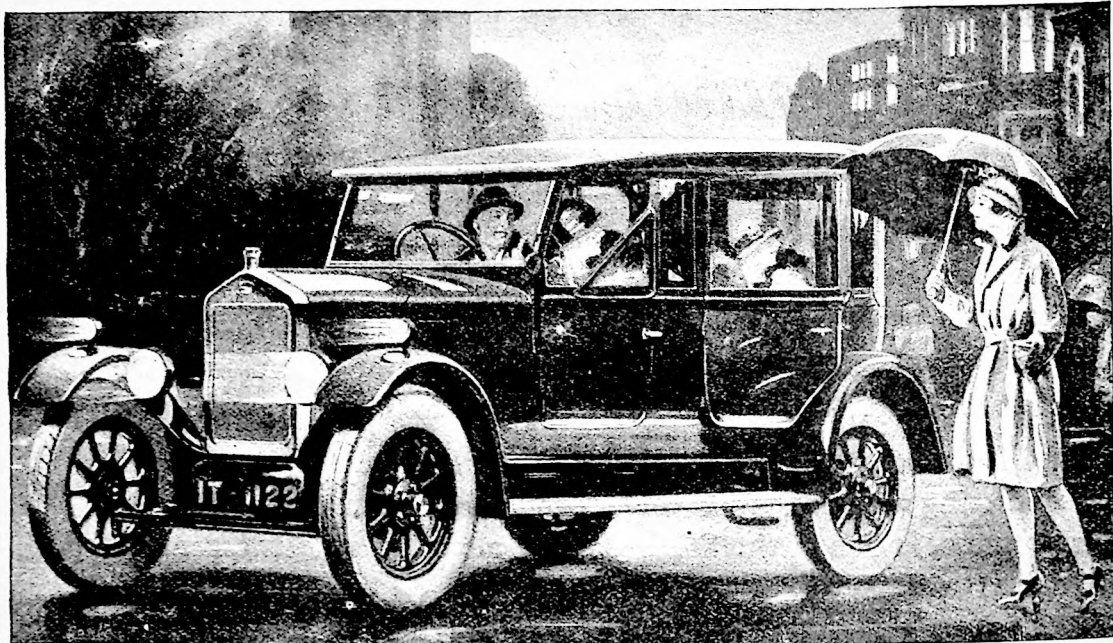
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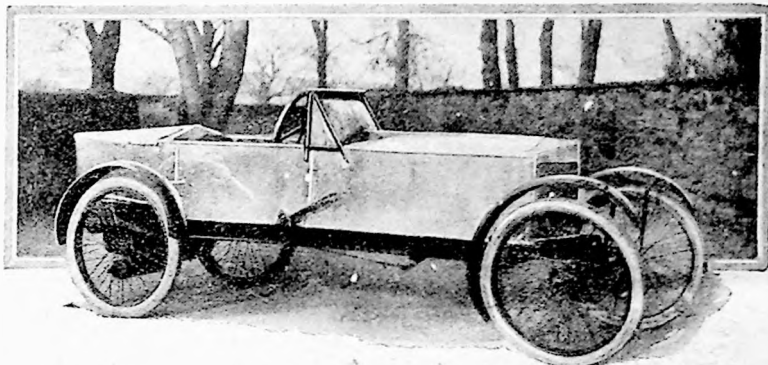
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A Carden engine-gearbox unit is used in this monocar, which was built by a reader and is described on this page.

THERE are two courses open to an amateur cyclecar builder—he can make the vehicle entirely to his own designs, using a proprietary engine, gearbox and so forth, or he can build it up from parts taken from an existing cyclecar, making alterations to the layout as required to suit his own particular ideas.

This latter course was adopted by the reader who built the monocar depicted in the heading to this page. The engine is a 7 h.p. 1921 Carden with unit two-speed gearbox and axle, the whole assembly having been carefully overhauled before it was fitted into the home-made chassis frame.

The two side-members of the frame are of unarmoured ash, 6 ins. deep and 1½ ins. wide, braced by four tubular-steel cross-members and a wooden distance piece which carries the steering box. Reversed quarter-elliptic springs are used at the rear, the axle running in phosphor-bronze bearings bolted to the spring ends. Torque is taken by the usual Carden fulcrum rod. The front axle, which is fitted with ball-bearing hubs and pivot pins, is carried on quarter-elliptic springs also, but these are mounted in the usual manner.

A light wooden framework covered with polished aluminium panels forms the body, the upholstery of which is carried out in red leather-cloth. The gear lever is mounted outside the body, the other controls being arranged in the normal manner. By hinging part of the streamlined tail, ready access to the magneto and so forth is obtained.

Close-up mudguards, a sloping windscreen with side pieces and a pointed "radiator" give the cyclecar a pleasing appearance. Chassis frame, mudguards and so forth are finished in bright-red enamel. On the road the monocar is claimed by its builder to behave very satisfactorily; the engine starts easily and pulls well even when running fast—a feature not common to all two-strokes.

Enthusiasts who have a reasonable amount of mechanical know-

ledge and skill, but who know nothing of machine drawing, sometimes hesitate to try their hands at building a cyclecar.

To these I will commend the following extract from my correspondent's letter:—"With the exception of the body elevation, no drawings were made, as it was thought that the time would be expended to better advantage in the workshop. So well did this arrangement pan out that at only one point had an alteration to be made—the cross-member carrying the pedals was, at first, too far removed from the seat."

When building up a special accessory, such as the magneto-dynamo which I mentioned recently, the question of where the necessary parts can be obtained nearly always arises. I am glad, therefore, on the recommendation of a reader, to be able to give the name of Mr. R. J. Coley, Ordnance Works, Queen Elizabeth Road, Kingston-on-Thames, Surrey, as a stockist of almost everything that an amateur mechanic can require.

Magnetos suitable for converting to dynamos are available from 15s. each, whilst grooved pulleys for driving them cost from 3d. each in aluminium and from 6d. each in brass. I understand that a large amount of the stock is Government surplus, and the quality of this is, of course, very high.

The adventures of my young and enthusiastic friend which I described recently have led several correspondents to ask me why I did not mention the name of the concern from whom he purchased his machine—also its make. "Paterfamilias" says, "I also have an approaching 15-year-old, and I feel I cannot do better than tell him to follow the example of your young enthusiast, who seems to be so well satisfied with his choice."

I hasten to rectify the omission. The car was a 1922 Morgan and it was supplied by W. H. Elce and Co., Ltd., the old-established City agents, who have just opened a new showroom at 11, Camomile Street, Bishopsgate, London, E.C.3.

I called to inspect the new premises a few days ago and was presented with a very useful pocket book, which, besides being a diary for 1927, contains a wealth of data and general motoring information which cannot fail to prove useful to all enthusiasts. These pocket books are being presented to Morgan owners by Messrs. Elce to commemorate the opening of the new showroom.

Who was first in the field with an air-cooled engine, conventional gearbox and shaft drive? The question is put to me by a reader who, dating his observations from the beginning of the cyclecar movement in 1912, claims that the honour goes to the makers of the 8 h.p. Rover. But what of the Humberette, to name only one early make that I call to mind?

Has anyone ever tried four speeds on a cyclecar? I believe that the old twin-cylinder G.N. would show up in quite a new light if it were so fitted. It can be done, of course, by utilizing the reverse sprocket and converting it to provide another forward gear—between the first and second, or second and top; but there are two snags—first, the car would be illegal, having no reverse, and, secondly, the sprockets would need reshuffling, perhaps replacing, to obtain favourable ratios. The 1912 G.N., it will be remembered, had but two gears—and it was fairly lively at that; with four speeds it would have been very nippy and would have had a wonderful performance on hills.

"THE TWELFTH LONDON-EXETER"



"FLASHED" AT THE START.

— This photograph catches the atmosphere of the start of the classic "Exeter" at Staines on Boxing Night. J. Richardson (Austin Seven) is seen starting on the 337-mile night and day journey.

CHARACTERIZED BY FINE WEATHER AND THE KEENEST PUBLIC INTEREST ALL ALONG THE ROUTE, THE "LONDON-EXETER" WAS ONCE AGAIN AN UNQUALIFIED SUCCESS. AS USUAL, LIGHT CARS AND CYCLECARS PROVED TO BE STAR PERFORMERS. THE FULL STORY OF THEIR ADVENTURES IS GIVEN BELOW.

"ONE of the best" was the general description of the annual M.C.C. run from London to Exeter and back, which started from Staines on Boxing Night.

The weather was ideal from start to finish and no one could have wished for better.

At eight o'clock Staines was "en fête," and the region around the Bridge House Hotel was crowded with officials, competitors, spectators, motorcycles and cars.

The glaring acetylene flares lit up the long lane of onlookers, down which, like schoolboys running the gauntlet, the "victims" drove their machines. Every now and again the night would, for a moment, assume daylight, transformed by the blinding glare of the Press photographers' flash-light flares.

Seated in a closed car was Mr. F. T. Bidlake, the starter, alternately doling out seconds and munching sandwiches, as the long string of motorcycles passed him to be sent off on their journey.

In all there were 375 competitors, made up of 134 solo motorcycles, 111 sidecar machines, 23 three-wheelers and 107 cars.

The number of car competitors really was extremely gratifying, in view of the fact that the trade ban confined the run purely to amateur enthusiasts. And they were enthusiasts, too, for a very large number of them had sports models,

B30

whilst in many cases there was no hood on the car.

The drivers and passengers in the touring cars were also for the most part determined to get as much fresh air as they could, for large numbers of them had their hoods and side curtains

noticed, too, that many of the four-seaters had only two people aboard.

Whilst the motorcyclists were being sent away the car competitors filled the many rooms of the Bridge House Hotel, at Staines, where, over the clink of glasses, new acquaintances were made and old friendships renewed.

It is, of course, a feature of the London-Exeter run that few of the regular competitors drop out. As each year comes round the old stagers, who no doubt the year before had vowed that they would not compete again, show up in the same antique but still weather-proof raiment to blaze a new trail to the West and back again.

At last the 245th motorcyclist was away and the first of the Morgans drew up alongside the starter's car, which was flanked on each side by long rows of spectators—there must have been a thousand or more—many of whom were, of course, friends or relatives of competitors. Off went H. E. K. Sawtell's red nero-Morgan and after him, at half-minute intervals, the other three-wheelers, mostly—be it whispered—with that characteristic ear-splitting crackle which pleases so much the heart of the owner and brings down so much wrath upon him from others. Over the bridge they went, towards Egham and Bagshot, with their hobbling tail lamps forming a clearly marked trail over half a mile long.

A. G. Gripper (Alvis) gets away amid clouds of smoke at the start of the timed section on Salcombe.

stowed away. Saloons were less to the fore than one would have expected—doubtless due to the fact that the high speeds which had to be averaged up Salcombe Hill would have set them a rather stiff task. To save weight we

After them came the cars, more sedate and subdued, but none the less lively and always ready for a friendly "scrap" where the road permitted.

The night was clear and crisp. Not cold enough to be unpleasant, but sufficiently sharp to keep the passengers awake. The sky ahead, astern and all around was speckled with stars, but no moon appeared.

The run to Salisbury, through Basingstoke, Whitechurch and Andover, was practically uneventful. The Morgans were worried with carburettor trouble, for, in spite of shields and wrappings, the intakes would not warm up.

Lighting troubles, too, came early, and they were not confined to the motor-cycles and three-wheelers, for several cars were noticed stationary by the roadside whilst the occupants changed lamp bulbs and made other adjustments to ensure that the ammeter showed a little "charge" with all lamps on. Incidentally, one of the Morgan drivers told us after the event that the road from London to Exeter must be strewn with Morgan dynamo belts.

The supper check was at the "White Hart," Salisbury, and here a good, hot supper was served.

The marshalling in the hotel yard was excellent and there were no bothering

There were rumours of a secret check not far out from Salisbury, and certainly it would have been a good place for one, as it was easy under the conditions ruling for drivers to get more than their allotted ten minutes ahead of time. The likelihood of a check was rather emphasized by the closeness of the "places marked with a time on the route card."

First came Wilton, only 3½ miles out, then Barford St. Martin and Fovant, with only 6½ miles separating them. At Shaftesbury, 11½ miles farther on, quite a large number of local enthusiasts, copiously wrapped up with rugs and winter overcoats, had gathered to watch the procession pass through, whilst at Yeovil, some 20 miles farther on, the main street was thronged.

A Welcome Respite.

This was due largely to the fact that competitors had a five-minute stop there to enjoy a cup of coffee as the guests of Mr. P. W. Moffat—an old member of the Motor Cycling Club and still a very enthusiastic motorist. At his garage the welcome beverage was handed out in generous-sized cups and in record time.

Once on the road again, the run assumed a little more interest, for Honi-

Exeter run who steps on the gas with some vigour so soon as he reaches the top of Peak Hill, for he is then only 14 miles from Exeter and the way lies through narrow, winding lanes along which averaging 20 m.p.h. would be most difficult. Appreciating this, the M.C.C. officials allow a little extra time for this section, but, even so, one must look slippy to run in to schedule.

At Exeter the arrangements are always very good, and this year they were well up to standard. The cars were parked at Gould's Garage, whence the competitors went in special motor buses to Deller's Café, which is admirably designed to cater for a big crowd. It is a crowd, too, which is far from easy to feed, for they arrive in twos and threes at half-minute intervals—and they all clamour for food the moment they are seated.

The two-hour halt at Exeter gave time for everyone to feed and wash in



GETTING READY
FOR WHITE SHEET.

G. L. Jackson (Alvis) leading a bunch of cars through Beaminster, on the threshold, as it were, of White Sheet Hill.

delays. A wash in hot water did much to put the competitors right with regard to bodily comfort, and after the meal they were ready again to push on.

There are some who say that this stop should be of shorter duration, and one hour and ten minutes is, perhaps, rather on the generous side.

Once in their cars again the competitors found that it was certainly to be a chilly run. Whilst they had been feeding, frost had settled on the upholstery, and those who had side lamps mounted at the base of the windscreen noticed that the front wings had taken upon themselves a new lustre caused by sparkling hoar-frost.

ton lay only 30 miles ahead, followed by the left-hand turn from the main road which took the competitors south through Sidbury to Sidmouth, which is the kicking-off point for the ascent of Peak Hill.

This really is a too easy test to worry one to-day. It is certainly rather rough in places, but the gradient is nowhere worse, probably, than 1 in 6, and the whole climb is practically straight. The official observers, whose duty it was to record any failures, were able to enjoy their pipes in peace—certainly their pencils had very little work to do.

He is a wise man in the London-



On the Plain, near Blandford. D. W. F. Bonham-Carter (Jowett) and G. H. Strong (Austin) in the foreground.

comfort and the more immaculate amongst the drivers even found time to shave!

The first part of the run home from Exeter provides, it might be said, the be-all and end-all of the run—at least from the sporting driver's point of view. Seventeen miles out comes Marl-pits Hill, which rises out of Honiton. It would have been a splendid test hill 20 years ago, but now can give a tremor only to the heart of a novice in the very worst stages of "wind up." Perhaps it is a little disconcerting to see large men in large overcoats and with large checking sheets waiting to write down one's name with the significant "F," standing for "failed," written large against it. That could have been the only reason for so many of the drivers banging in first gear as though they had a quarrel with it and toiling grimly up the 1 in 7 gradient as if they were climbing Ben Nevis. At the top they had to hustle, for Salcombe lies only 10 miles farther on.

If proof were needed of the intense vitality of motor sport in this country, such proof was evident on the steep, stony slopes of Salcombe Hill.

That the public want competitions, and follow them keenly, was made manifest by the enormous amount of interest evinced in the performances of the cars. It is not exaggerating to say that crowds lined the whole of the

(Above) S. C. T. Littlewood (Swift) on the lower slopes of Salcombe at the beginning of the timed section. (Below) A general view of the check at Churchill's garage, where the organization was good.

(Above, left) R. J. Martin in a three-wheeled coupe check near Salisbury, showing J. Richardson and checkers. Secret checkers.

faster on the hill than those seen last year, the three-wheelers began to arrive. H. E. K. Sawtell's Morgan led the van, making a good although uneven climb. J. L. Goddard, H. W. Holmes and S. A. McCarthy, who followed, were quite pleasantly fast, while as C. J. Turner's Morgan tore up with wildly wobbling wheels there were shrieks of excitement from the crowd.

F. A. Boggis's Morgan had a crackling exhaust, belched smoke and was fast, but D. F. Heybourne and J. S. Thurl's vehicles made steadier ascents. Handicapped by a smallish engine, A. T. Prior's Omega made a rather slower climb. His team-mate, R. J. Martin, driving the only three-wheeler coupe in the trial, experienced some difficulty in tackling the gradient and stopped, the water in the radiator meanwhile boiled furiously.

H. R. Taylor (Morgan-J.A.P.), who stopped, could have passed Martin's coupe had he chosen to do so, and it is doubtful whether he is entitled to claim a baulk as he had a chance to get by. However he got away well, as two other Morgans sped by. Indeed, the performances of the light three-wheeled cyclecars were among the most satisfying which the hill provided.

C. L. Clayton's Amilear was the first four-wheeler to speed up the hill, the driver making a beautifully rapid, silent change down on the worst portion. C. Anthony, who followed in a Sénéchal, made quite a fast climb. V. J. Hartley's Morgan then had to be pushed up, while C. M. C. Turner's Gwynne faltered to a standstill and there remained for the rest of the morning.

F. B. Baker's sports 9 h.p. Rover made a steady, impressive climb, as did

half-mile timed section on Salcombe Hill and that at many points spectators stood six deep by the roadside and clung, in tier above tier, to the precipitous, tree-lined banks.

Nor were the onlookers blind to the fine achievements of the smaller types of car. Again and again the steep hill-side resounded with the echo of mighty

cheers as one driver, by a fine display of skill, overtook and scraped past another on a difficult section, or as this or that light car swept up at a thrilling pace, scattering stones as it skidded the gentle bends.

After an astounding performance by the motorcycle and sidecar combinations, which seemed at least 50 per cent.

... ascending Salcombe. (Right) Close to the secret Seven) whose time has just been taken by the count for several lost "golds."

the drivers of other vehicles of the same make and type, although one—in a brown four-seater—met his Waterloo near the summit and had to coast down to the start after all was over.

It would hardly be fair to mention by name each of the Austin Seven entries which made such good ascents. These wonderful little cars were all fast and looked exceedingly comfortable. Indeed, they could in many cases show much larger cars a clean pair of heels. The Salmons and Amilecars were all quite fast and pleasant to watch.

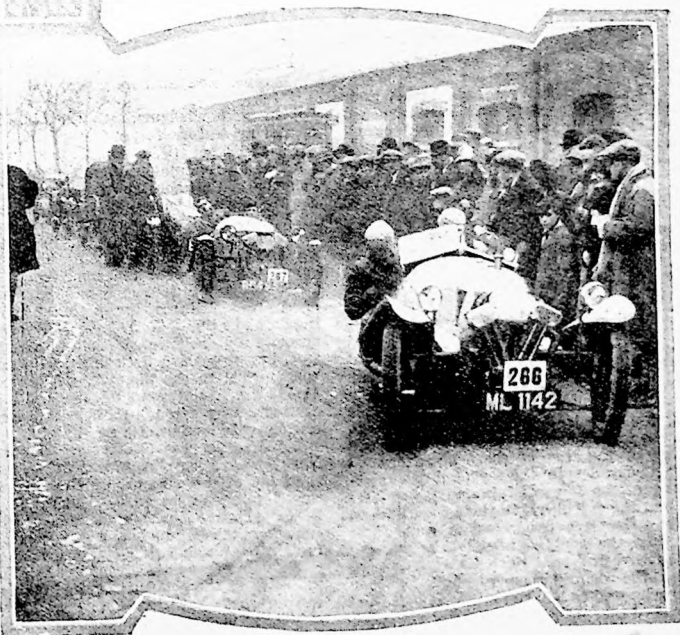
Driskell's old D.F.P. was going very well indeed and was fast on the hill, while G. H. Strong's Austin Seven zig-zagged slowly up and, amidst thunderous cheers, successfully breasted the steepest section.

D. W. F. Bonham-Carter's Jowett arrived from Iraq just in time to take part in the run and, like Joseph, had a coat of many colours. Damage in transit from the East necessitated a shining aluminium body panel and a glistening new black wing, neither of which matched the greenish weather-beaten cellulose enamel. But the Jowett climbed sturdily, amidst well-deserved applause.

Another veteran that was greeted with enthusiasm was C. Ford's aged Rover Eight, which also climbed strongly. A. G. Gripper's Alvis was fast, albeit somewhat noisy on its gears, while P. H. Shaw's little Renault gave up the struggle quite early. No man could have looked more determined than did Oliver Clark—a great bulky figure in a tiny blue Sénéchal—as he launched his attack on the gradient, climbing swiftly.

E. Hillary (Frazer-Nash), with much

(Above) P. D. Clegg (Senechal) being pushed up to the re-starting line on White Sheet. (Below) G. C. Harris (Morgan) leaving Gould's garage, Exeter, for the return journey.



spitting from his engine, came to a stop behind another competitor, who was, however, climbing steadily. He got away again with spectacular skids and swerves. N. A. Taylor (11.4 h.p. Standard) amused the onlookers by talking volubly to his passenger as he toured up the slope, while R. A. F. Clark (A.B.C.) caught and passed a

Morris on the hill. His car was exceptionally fast.

Although it has proved impossible to describe every individual performance, it may be taken for granted that, except where a statement is made to the contrary, good climbs were made by all the light cars and cyclecars which started.

At the top of Salcombe, under a gloriously bright sky and with white frost making the countryside all around look like a magnificently painted Christmas card, the competitors followed a short lane which took them on to the main road and thence by way of Colyford to Axminster. Narrow lanes were then joined and, with many a right-angle turn and down many a well-marked side turning, Beaminster was ultimately reached.

This very interesting little Dorsetshire market town, about which William Barnes wrote:—

"Sweet Be'mister, that bist abound
By green and woody hills all round,"
lies at the foot of White Sheet Hill, on which the competitors were stopped on a line and made to restart and make a clean climb to the summit. The first 10 yds. of the climb from the starting line had—so many thought, although there was nothing to that effect in the programme—to be covered, as it was last year, in 10 secs.

Usually reckoned to be the "last straw to break the camel's back," it proved, however, to be an easy proposition on this occasion and actually the only causes of failure among the light-car competitors were slight wheel-spin and a combination of clutch slip and the steep gradient which prevented a good getaway until the cars were given a start by some of the officials and spectators.

The hill itself was in remarkably good condition. Last year the surface was inches deep in slime, but since that time, apparently, the local council has got busy and remade the worst section, which includes also the steepest part of the hill.

Performances on White Sheet.

After the motorcycleists had made their ascents the surface had been churned up by their rear wheels and consequently some of the light cars had difficulty in restarting owing to wheel-spin.

On the whole the performances were excellent, for the test had lost much of its significance on account of the prevailing conditions. The weather was almost spring-like, with just a suspicion of mist overhanging the top branches of the trees on the lower portion of the hill.

Crowds of enthusiastic motorists—but not so many as at Salcombe—had made their way to White Sheet and taken up their positions in the roadway and on the tree-clad banks alongside the road. In future "Exeters" we think it would be wise for the M.C.C. to make some arrangements to keep spectators out of the way of the competitors, as this year, despite the repeated admonishments of a few officials and two policemen, the onlookers, in their eagerness to see the restarts, encroached right across the road, completely blocking the fairway, and only parted their ranks to let the competitors through as they accelerated to the summit.

A dozen or so stalwart helpers with long ropes could have worked wonders in keeping the crowd in orderly lines at the roadside.

The first cyclecar to make its appearance was J. L. Goddard's 10.96 h.p. Morgan, which made light of the task. All the other three-wheelers, with the exception of H. Beart's 12.97 h.p. Morgan, were successful in covering the 10 yds. within 10 secs., and many in about five.

B34

Beart's machine was suffering from clutch trouble and he was pushed off with the engine roaring ineffectively.

Star performances in this class were made by H. E. Sawtell (10.75 h.p. Morgan), F. A. Boggis (10.96 h.p. Morgan), R. J. Martin (9.80 h.p. Omega) and R. A. Martin (10.95 h.p. Morgan), who were all sure on the restart and accelerated well to the summit. A. T. Pryor (9.80 h.p. Omega) was rather slow, but needed no outside assistance.

Among the light cars C. Anthony (8.2 h.p. Sénéchal) made one of the best performances. S. H. Collier (10 h.p. Talbot) could not restart and had to be pushed off, while S. J. Clutterbuck remained on the starting line for several seconds before he could persuade his vehicle to make any forward progress.

H. J. Lovatt, in a Jowett, made a very neat getaway, as also did H. G. Russell's similar car. The passenger in C. D. Conrad's 1.087 c.c. Salmson caused amusement by lifting his bowler



D. Duncan-Smith in a two-cylinder air-cooled G.N. on Salcombe.

hat in acknowledgment to the plaudits of the spectators for a fast climb.

S. L. Engel (970 c.c. Talbot) was good and particularly quiet, in contrast to some of the more sporting cars. The Austin Sevens driven by G. H. Strong and D. J. Prizeman were very steady in restarting, and gathered speed in a very convincing manner. The latter, however, came to a stop near the summit.

W. V. Beach (Rover Nine) was one of the few failures, his engine "konking" on the line. E. J. Kehoe (Austin) successfully negotiated the restarting test, but stopped a little higher up and was pushed to the top. A. G. Gripper (1.496 c.c. Alvis) went off at speed and cleared a way through the spectators by taking a sinuous course up the hill.

F. A. Jacques (1.496 c.c. Frazer-Nash) was rather slow in restarting, and the body of the car swayed violently as the clutch was let in. W. Urquhart-Dykes (Frazer-Nash) made one of the fastest climbs and changed-up immediately after passing the 10 yds. mark.

Fast ascents were made by the majority of the competitors, but the following may be singled out as being especially meritorious in that respect:—

G. H. Martineau (Salmson), T. R. Berry (Salmson), C. Ford (Rover), W. E. Castello (Palladium), W. E. Kendrick (Frazer-Nash), R. A. Clark (A.B.C.), H. H. Keogh (Riley) and J. Hobbs (Riley).

From White Sheet one pursues one of the most unpleasant roads in England. London-Exeter competitors know it, presumably, only at this time of year,

when for several years past it has been covered with several inches of water blown into the semblance of a miniature Bay of Biscay by a gale of wind sweeping across the very exposed countryside. This year, as there was no rain or wind, it could not keep up its reputation, but, even so, managed to be swathed in a deep, clinging Scotch mist which made rapid progress rather difficult and passengers in open cars somewhat moist.

Back to Main Roads.

Once at Dorchester, 16 miles farther on, conditions improved, however, and the long, undulating, tempting main road to Salisbury was joined. A secret check has been placed from time immemorial along this section and, sure enough, it reposed at the bend of the road at Woodyates just where everyone expected it and on the identical spot which it occupied last year. The number of gold medals lost through being too early or too late at this point must have been very small indeed!

At Salisbury, 10 miles farther on, a halt of an hour was allowed for lunch. It came at a peculiar time of day for the last car competitor, who was not due to arrive there until well after five o'clock! His appetite was good, however, for breakfast had been taken at about nine o'clock. The long gap between meals had been eased, however, by coffee and sandwiches kindly supplied by Mr. W. G. Churchill, who had transformed his garage at Dorchester into a temporary canteen.

The Last Stage.

From Salisbury the run home to Staines is always very depressing and miserable. The passengers sleep peacefully and the driver nods over the wheel, seeing strange shapes on the dark, deserted road ahead and trying unavailingly to keep his passenger sufficiently awake to make sure that schedule time is maintained. This, all drivers believe, is the passenger's job, but there are not many passengers who will tackle it, even if they are wakeful enough to do so, on that last long stretch which concludes the 337-mile journey.

Last week we published a complete list of the entrants and we give below the non-starters and those who failed to finish. In an early issue we shall give the full list of awards.

Non-finishers.

- 247 J. I. Goddard (Morgan).
- 248 V. J. Hartley (Acro-Morgan).
- 249 D. S. C. Macaskie (Morgan-J.A.P.).
- 250 B. B. P. Russell (Morgan-J.A.P.).
- 252 S. Jellen (9.5 h.p. Salmson).
- 275 J. V. Hay (8.7 h.p. G.N.).
- 282 F. C. Everett (9 h.p. Rover).
- 287 C. M. C. Turner (8 h.p. Gwynne).
- 297 S. C. T. Littlewood (10 h.p. Swift).
- 298 P. H. Shaw (8.5 h.p. Renault).
- 306 A. T. Clark (4.9 h.p. Nomad).
- 313 O. Clark (8 h.p. Sénéchal).
- 342 H. S. Stevens (12 h.p. Lea-Francis).
- 373 J. S. Wilson (11.9 h.p. Morris-Cowley).

Non-starters.

- 288 A. J. Berry (9.5 h.p. Salmson).
- 291 L. Martineau (10 h.p. Salmson, Grand Prix).
- 305 F. C. Formilli (4.9 h.p. Nomad).
- 310 R. B. Waters (10 h.p. Salmson).
- 321 G. W. Olive (10 h.p. E.H.P.).
- 329 J. T. W. Russell (11.9 h.p. Lagonda).
- 339 G. P. Stevens (12 h.p. Lea-Francis).
- 351 I. D. Spooner (13.9 h.p. Vauxhall).
- 352 R. C. Webster (14 h.p. Sunbeam).
- 356 S. Walker (15.9 h.p. Bentley).
- 362 J. B. Bainbridge (48.4 h.p. Rolls-Royce).

* Indicates travelling marshal.

GOOD FOR THE ACCESSORY TRADE.



The aftermath of Christmas ; or where there's a will there's a way!



OUR READERS' OPINIONS

We take no responsibility for the opinions expressed by readers. Correspondents may use a nom de plume, but every communication must be accompanied by the writer's full name and address. Letters for the next issue should reach us by Monday morning and should be addressed to the Editor, "The Light Car and Cyclecar," 7-15, Rosebery Avenue, London, E.C.1. We reserve the right to make any alterations or deletions which we deem necessary.

DO WE WANT SPECIAL MOTOR ROADS? The Question of Cost—Opinions Equally Divided.

A Profitable Venture.

Whether or not we require special motor roads is a question upon which I do not feel qualified to adjudicate, but I certainly think that as a profit-making venture the scheme has much to commend it. I am convinced that a business man desirous of

The Public Might Subscribe. making a quick journey in his own car from, say, London to Birmingham, would cheerfully pay a toll fee of 5s. owing to the enormous convenience which would result. The time of the journey compared with that taken under ordinary conditions would probably be halved and the driver would not suffer from any of those terrors which modern main-road travel nearly always entails.

I would like to see special motor roads radiating from London to such places as Brighton, Exeter, Cardiff, Manchester and Liverpool, Glasgow, Cambridge and Southend. There would, or could, be "stations" en route and the layout should follow that adopted by railway companies at main-line stopping places. Loops would be formed on each side of the road so that road traffic stopping at any one of these stations would automatically be cleared off the main line and thus allow "through" traffic to proceed with unabated speed. The road should also be wide enough to accommodate slow and fast traffic; slow traffic—which would not attain speeds very much higher than 40 m.p.h.—keeping well to the left and allowing 75-mile-an-hourers plenty of room in the middle.

Cyclors.

Prohibitive Cost of Construction and—

I see from last week's issue of *The Light Car and Cyclecar* that the subject of building special motor roads has been brought forward. As one who, for business purposes, covers a large mileage each year in a light car, I think the answer to the question "Do We Want Special Motor Roads?" is—very emphatically—No!

—Heavy Tolls.

To begin with, the cost of building these would be enormous, whilst, in addition, there is the cost of maintaining them to be considered. If the scheme is to be put in the hands of a private company it would mean that those desiring to use the roads would have to pay tolls, and these, of necessity, would be so heavy that the convenience of using the roads would not be worth the fee charged. There is another point in connection with privately owned roads, and that is: tolls bring with them toll-keepers, who have to be paid for their time. Thus the cost is still further increased.

If, on the other hand, the roads were to be built by the State it would mean that motor taxation would have to be increased to obtain the necessary money or else other road repair and reconstruction work would have to be neglected. I think that all your readers will agree that neither of these possibilities is very attractive—distinctly the reverse, in fact.

n36

Personally I do not think there is any real need for special highways at the present time. The only real congestion, other than in towns, is at week-ends, and this does not affect the average business man (for whom, presumably, the roads would be constructed) to any appreciable extent. Pleasure motorists, on the other hand, would not want to take advantage of these roads, other than to enjoy an occasional "blind."

No, I think it would be very much better to spend any money which is available on improving our existing highways.

E.L.G.

Yes—From the Business Point of View.

I was very interested in the report of Mr. Rees Jeffreys concerning motor roads in last week's issue, and I say most emphatically that business men in this country—I speak as one of them—do want special motor roads; they would, in fact, be the "best thing ever." I would like to know what has happened to the suggestion which was put forward some time back concerning the construction of at least one such road in this country? Presumably it is still on the tapis but is held up, like a good many other things, by the almost insuperable difficulties which a scheme like that always brings in its train.

I.L.C.

Fast Roads Not Needed.

Your short article on the report of Mr. Rees Jeffreys, in the issue of December 24th, was headed "Do We Want Special Motor Roads?" To that question, as an ordinary motorist, I would like to answer, very forcibly—"No, we do not." If our present roads were to be kept in that state of repair which our contributions to the Road Fund entitle us to expect they would be amply good enough for all but speed maniacs. A dead smooth, level and wide road running in a perfectly straight line from town to town, and free from speed traps or other "dangers," sounds very attractive, but how would it work out in practice?

In the first place, its monotony would be appalling and the ease of driving along it would "spoil" any driver, because gear changing and other demands upon driving skill would never be needed. Secondly, the incentive to speeding would be so great that ordinary cars, never intended for such a purpose, would be driven always "flat out" by novices with no mechanical perception. This would ruin the cars, give a bad and quite undeserved name to the makers and cost the owners a small fortune in repairs.

For these reasons alone I think the building of special motor roads should be postponed until the design of cars and the mentality of those who drive them have undergone a change for the better.

ELIAS TOSER.

OUR READERS' OPINIONS (contd.).

Three-speed Gearboxes Upheld.

In reference to the letters signed "Lea F." and "H. E. Linscombe," referring to me in your issue of the 24th. I should like to point out that I am always anxious to have experience of up-to-date motorcars, and I have driven a number of cars fitted with four speeds, but I am afraid I must still remain faithful to my idea that a car that can give the necessary acceleration on one gear is all the public wants.

The Hon. V. A. Bruce Replies.

From my experience in trials abroad and at home I have never found that the three-speed gearbox has had any disadvantages, and I am still living for the day—as I said in my last letter—when the ideal car will be the one that has no gearbox at all. Surely this is what everybody really wants?

I am sure it would be very interesting if one of the cars referred to by your correspondent could start with me in my trip from John o' Groat's to Monte Carlo and then through Italy, Sicily and Northern Africa. This is the sort of test which I think is useful, for it tells one a good deal.

VICTOR A. BRUCE.

Three or Four-speed Gearboxes?

The controversy regarding the merits of three and four-speed gearboxes has proved interesting. In the first place, the Hon. V. A. Bruce set out the advantages of three speeds and disadvantages of four speeds. Your correspondent, "Lea F." is not satisfied with a normal argument, but proceeds to attack not only the car which the Hon. V. A. Bruce drives but also Bruce himself—a poor sort of argument.

For my part, I consider that, while four speeds are desirable on some cars—notably racers—three should be ample for a really good light car. But what is a light car? The medium-weight chassis and body of yesterday with the hot-stuff 14-litre engine of to-day is termed a light car; in my opinion it is not. There are few really light cars, and the A.C. is one of them. The former type of vehicle needs four speeds, but the power-weight ratio of a light car should be such that no more than three forward speeds are required.

True Light Cars.

What does "Lea F." mean by a high-efficiency 14-litre engine? One which develops enormous power with an equal amount of noise and a petrol consumption of 15 m.p.g. or a quiet and economical A.C. engine somewhat slower but quite fast enough? A.C. Cars, Ltd., only claim that an A.C. costs less to run per mile than any other car of equal road performance and carrying capacity. After all, economy is the virtue of a light car.

As for the gearbox-cum-back axle, I often wonder why this is not universal in the small-car world; it is light, compact and convenient. Again, an A.C. with quarter-elliptic springs is quite as comfortable as, and in many cases more so than, most so-called light cars.

I suggest that "Lea F." and H. E. Linscombe interview an A.C. owner and learn what comfort the quarter-elliptic springs can provide, how really efficient and reliable is the side-valve engine, and how convenient and reliable is the gearbox-cum-back axle. Some A.C. owners do not touch the clutch and the cars suffer in no way after thousands of miles. I do not own an A.C., but when I buy a car of my ideals it will be a car with a pedigree—a car for a connoisseur; it will be an A.C. Usual disclaimer.

L. B. JOHN.

Value of Racing Not Sufficiently Appreciated.

I read with great interest the recent article by Mr. Parry-Thomas and, of course, quite agree with him that in high circles the value that racing publicity gives to a motor manufacturing country is not sufficiently

Official Recognition Needed. I have always been a believer in public competition, but the

fact that it is not backed up by good words from those in high positions makes it have less effect on buyers than it really should do; manufacturers, therefore, are not able to race as much as they would like to do, because racing successes do not bring in their train a sufficient increase in business.

I do not, however, agree with Mr. Thomas that our successes in aeronautics are due to a national feeling of responsibility towards the aeroplane. Personally, I think the aeroplane is being sadly neglected in this country and the development of aeronautics is nothing like it should be. It may be treated somewhat better than motorcar development, but nothing like well enough for the real safety of this country.

S. F. EDGE.

Advertisements That Appeal.

The Art of Advertising.

This subject has, perhaps, been most usefully raised at the present moment. Since the introduction of the really light car, with an almost bewildering number of types and grades, the education of the motoring and car-buying public has been rapid. Pictorial display and snappy slogans may be good publicity, but the prospective car buyer is looking more and more for reasoned arguments in advertising.

Reasoned Arguments.

A splendid example of good advertising—good because it carries a tone of reasoned conviction with no overstatement or straining for effect—is that series for which the Rolls-Royce and Argyll Companies have been responsible. This kind of advertising explains in clear, reasoned arguments capacity in terms of road performance, and is much more helpful to the perplexed prospective owner than sensational announcements of track and "stunt" performances.

Let us hear more what the car has been built to do week in and week out.

J. G. MUNRO.

Competition Results Valuable.

The suggestion of "Floreat" that sectional drawings should be used in advertisements of motorcars presupposes a standard of mechanical education of the general public which is more flattering than true. I do

Sectional Drawings Useless. not suppose that one in twenty of the average users of cars can read a true sectional drawing, as there are so many

instances of draughtsman's licence and arbitrary conventions which need to be understood if a working drawing is to be read correctly. The alternative is, of course, to make perspective sketches, examples of which are found in many of the semi-technical papers; but these are expensive to produce and only appeal to a small proportion of the buying public.

I am of the opinion that races, trials and R.A.C. certificates of performance are far more interesting to the potential buyer than details of the car's construction, which do not interest him so long as the car gives him cheap and safe motoring.

H. W. PITT.

**OVER STAINES BRIDGE.**

A striking photograph which shows the path traced out by competitors' headlamps as they crossed Staines Bridge in the "Exeter."

OUR READERS' OPINIONS (contd.).

The Case for Disabled Drivers.

As a subscriber to *The Light Car and Cyclecar* since its inception, may I through the medium of your columns make an appeal at this critical time for the disabled driver?

I am one myself, having lost my left arm through wounds, and have been driving continuously since 1918 without an accident of any kind. There must be

many others in similar circumstances to whom motoring gives the keenest possible enjoyment and interest, and to be deprived of the right to drive would be the greatest blow of all. Will not somebody take up our case and see that we get a fair hearing before it is too late? Whatever the trend of future legislation we are at least entitled to a driving test.

FRED ASHLEY.

Are Detachable Wheels Worth While?

I read the recent article, "The Case for the Three-wheeler," by V. A. Cation with interest, being an owner of a well-known make of this class of car. I have also read the letter by "Morganatic" and have noted his remarks with reference to the rear wheel. While an easily detachable wheel would be very convenient at times,

Puncture-proof Tyres.

I am rather doubtful if the extra expense incurred in the manufacture would be really worth while in the long run.

I have driven my family model several thousand miles and so far (touch wood) have had no trouble with punctures in the back tyre. I admit that I have Jackson's Impervo in the inner tube, but I have not yet found anything likely to cause a puncture in the cover when making the usual inspection. When I can afford it I shall, I think, fit all wheels with Everlastic tubes, which I consider would be a better proposition for the manufacturers to take up than easily detachable wheels. The Everlastic tube is, I understand, practically puncture and burst-proof.

T.B.

What is the Best Radiator Position?

In your issue of December 24th "G.E.H." asks how many light cars with the conventional belt-driven fan and radiator in front of the engine could stand a two-hour climb on low gear in tropical heat? We cannot give him the information he desires, but we should like to point out that during the recent Gray-Jowett Expedition across Africa, from Lagos to Massawa, there were whole days during which the cars were wholly on second and bottom, there being a period of 14 days at a stretch when top gear was never used.

In spite of this, in a run of 1,600 miles the two cars received one pint of water each to replace loss by evaporation.

A Strenuous Feat.

Solid Tyres and Bad Roads

Bad Roads and Rear Lights.

As a mere cyclist, my opinion on a matter concerning motor vehicles may appear, to say the least, a trifle gratuitous, but I venture to join this correspondence (I can hardly call it a controversy as nobody has attempted to justify solid tyres) and give what I know is the opinion of hundreds of cyclists—that all vehicles should use pneumatic tyres. We all know the damage that solids do, and as bicycles are not equipped with shock absorbers or cantilever springs, cyclists appreciate a good road. It seems to me that a tax rebate is the only sure method of making pneumatics become universally adopted, and such a measure should be instituted immediately.

One point affects cyclists and motorists jointly, and that is rear lights. Motorists are continually grumbling at us cyclists for not using rear lights. If some of the roads were better we might. As it is, a cyclist wending his weary way homeward at night bumps into a pot-hole and out goes his back light, but he cycles on quite oblivious (not having eyes in the back of his head) until he comes across a policeman, and then, if rear lights were made compulsory, it would mean 7s. 6d. fine and 5s. costs. If pneumatics were used on heavy vehicles the roads would be better and then we might light a back lamp, to the satisfaction of everybody concerned.

JOHN BASTING.

B38

tion; that is, one quart for 3,200 miles. As Mr. Gray remarked, although he boiled often, the Jowetts never did. The whole trip covered about 3,600 miles. It must be borne in mind that the Jowett has no fan, and the high efficiency of our car at home as regards high mileage to the gallon, etc., proves that the Jowett is not overcooled.

If "G.E.H." will communicate with us we shall be delighted to send him a copy of Mr. Gray's booklet, "Across Africa by Car in 60 Days." It is a well-written and well-illustrated account, which should very much interest him.

May we add that it is practically free from any suggestion of advertising.

G.H.

P.P. JOWETT CARS, LTD.



'NEATH SUNNY SKIES.

A happy snapshot of one of our readers taken on the beach at Juan-les-Pins, on the Riviera.

On the Riviera.

Just a line to wish you and your staff a very happy Christmas and "all the best" for the New Year. You may be interested to know that there is never the slightest difficulty in obtaining *The Light Car and Cyclecar* anywhere on the Riviera, for even the tiniest places stock it regularly. I enclose a snap of one of your enthusiastic readers engrossed in Mr. J. G. Parry-Thomas's excellent article, in the bright sunshine on the plage at Juan-les-Pins in the south of France.

Nice.

W. ALDINGTON.

Pneumatic Tyres for Commercial Vehicles.

May I state that I absolutely and emphatically agree with what Mr. Dunnico has to say concerning a tax rebate for pneumatic-tyred commercial vehicles of over 30 cwt.?

As he states, we are all agreed upon the benefits of pneumatics; in my opinion, there are no disadvantages at all, unless the slight chance of a puncture could be classed as such. The tough, thick tread of the modern British giant pneumatic can resist most sharp stones, etc., and as I happen to know the percentage of punctures in the tyres of a company owning a large fleet of heavy pneumatic-shod vehicles, I can assure all owners of solid-tyred lorries that the risk is infinitesimal.

The decreased petrol consumption, decreased wear and tear of the chassis, the lengthening of the periods between overhauls and—an important factor—the popularity of a pneumatic-shod char-à-bancs with the public, outweigh the puncture possibility by an overwhelming majority. As a private motorist I am naturally in favour of good roads, and it does not take a Sherlock Holmes to see how solids damage our highways and, in these days of chars-à-bancs, our by-ways. By all means reward pneumatics; the saving to everyone concerned would be immense.

W. RITCHIE.

To-morrow

.....

starts a New Year. May it prove a happy and prosperous one.

To-day

.....

let us remember what the 9/20 h.p. Rover—"The Nippy Nine"—has accomplished during the past twelve months.

**2,007
MILES ON
£5**

A fully laden four-seater model, picked haphazard from stock, covered no less than 2,007 miles on an outlay of £5, the petrol consumption averaging over 40 miles per gallon.

The third-class railway fare for four passengers for this distance would be over £50!

**EDINBURGH
to
MONTE
CARLO**

Another fully laden four-seater, also picked at random from stock, covered this 1,600-mile journey at a cost for petrol and oil of less than £4, and called for no attention other than cleaning out the carburetter.

The average speed for the 800-mile run across France was practically 30 miles an hour!

You really should read "The Book of the 9/20 h.p. Rover," free on request. Merely write your name on this page, tear it out and post to us, and you will receive full particulars of

The finest light car on the market.

ROVER

THE ROVER COMPANY LTD., 61, NEW BOND ST., W.1, & COVENTRY.

P.S.—There are 9/20 h.p. Rover models from £220 to £295.

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

❖ *Warwick Wright Says* ❖

THE facilities, for the purchase and exchange of high and medium-priced cars, which have built up the huge business of Warwick Wright Ltd., are now applicable to any make of light car.

We specialise in Lea-Francis, Riley and Singer Cars.

The easiest of Deferred Terms arranged to suit your individual pocket.

Your present Car valued free, whether you want to part with it or no.

Write now for our Booklet.

Warwick Wright, Ltd.

150 NEW BOND ST. LONDON. W.I.

(Mayfair 2904)

Start the New Year Well!

* It is not absolutely necessary to drain your sump or tank, as Wakefield CASTROL can be added, though naturally its full benefits will not be experienced until 100% CASTROL is in use. A clean sump is, however, recommended for immediate results. CASTROL "R" is accepted, and should not be mixed with any other grade.

**C. C. WAKEFIELD
& CO., LTD.**

All-English Firm,
Specialists in Motor Lubrication,
Wakefield House, Cheapside,
LONDON, E.C.2.

RESOLVE to give your car a chance to show what it can do. * Drain away the old oil and refill with the correct grade of Wakefield CASTROL, as shown on the Wakefield Chart at any Garage.

You will then realize why over 200 Motor Manufacturers recommend—

WAKEFIELD

Regd.

MOTOR OIL

OUR READERS' OPINIONS (contd.).

Police "Persecution."

I cannot help thinking that your correspondent, Mr. C. Hawkrigge, whose letter was published in last week's issue of *The Light Car and Cyclecar*, is making a mountain out of a molehill. If the constable was Mr. Hawkrigge's unable to read the number plate as the Letter Criticised, car passed he was justified in having it stopped for a more detailed examination. He accepted the evidence of a third person, although the numbers are easier to read on a stationary car than on one in motion. With regard to noise, here, again, he accepted a stationary test: probably, when labouring up the hill on an indirect gear, the car was very much noisier than when merely revved up.

Celluloid covers for licence holders are illegal, and here, instead of issuing a summons, the p.c. merely warned him to replace the celluloid. Where, then, does the "persecution" come in? C. F. WILLIAMS.

CONDENSED CORRESPONDENCE.

In the course of a long letter Mr. H. R. F. Thompson calls attention to the dangers of blind corners where the view is obstructed by trees growing on private property. "Why are not the owners compelled to cut their trees and hedges?" he asks.

P.H. (Stevenage) wishes to say a good word for H. G. Cressay and Sons, of Knebworth, Herts, who repainted his small four-seater, "making a really excellent job of it" for £6. This price included painting the disc wheels the same colour as the coachwork, but with black rims and centres. Three coats of colour were applied and two of varnish.

Writing on the subject of electric starters, Mr. J. Coop complains of the inaccessibility of the Bendix drive in the case of some modern cars. On his particular car he states that, should the small pinion stick and fail to engage with the toothed ring in the flywheel, it is impossible to put matters right without removing the electric starter completely, space not even permitting paraffin to be injected by means of an oilcan.

CLUB ITEMS AND SPORTING EVENTS.

BELSIZE BRADSHAW L.C.C.

The second general meeting of the Belsize-Bradshaw L.C.C. will be held at the Bridge House Restaurant, London Bridge, S.E.1, on Friday, January 21st, at 7.30 p.m., and members are requested to make a special point of being present.

THE WOKING WINTER NIGHT TRIAL

Having been approached by several members of clubs affiliated to the S.E. Centre of the A.C.U. to run a winter night trial in the nature of the London-Essex, the Woking and B. M.C. and C.C. has decided to call its next event the Woking night trial. It will start from the Bridge House Hotel, Staines, on Saturday, January 20th, and will finish at the same place on the following day. It will be open to members of all clubs in the S.E. Centre of the A.C.U., and the awards will be silver cups and silver and bronze medals. All communications should be addressed to the clerk of the meeting, Mr. J. E. A. Chipping, 18, High Street, Woking (Telephone 282).

ALL-LADIES' TRIAL.

The first All-Ladies' Trial, which is being organized by the Wood Green and D. M.C., is due to start from the Alexandra Palace at 10.30 a.m. on January 9th, and all entries must be in the hands of the hon. trials organizer, Mr. L. C. Olney, by January 4th. The premier award is the Mrs. Le Vack ladies' challenge shield and replica, and there are many other handsome awards to be won. Mrs. Le Vack will start the competitors, who will return about 5.30 p.m. The route, which is approximately 80 miles in length, is composed of main roads for the most part, and a slow hill-climb and a restart test on a 1-in-6 gradient will be included. There is no entrance fee, but competitors must pay 1s. 6d. to cover the affiliation fee to the A.C.U.

It is pointed out that the event is not a race, and driving at excessive speeds, or a conviction under the Motor Car Act, will involve disqualification.

THE GORDON ENGLAND SPORTS CLUB.

It will doubtless surprise, but nevertheless interest, our readers to learn that the famous body-building firm of Gordon England, Ltd., has among its directors a magician—Mr. Simpson. This is not a joke, and we do not refer in any way to the firm's magical method of fitting fully fledged grown-up bodies to baby chassis, but it is a fact that one of the chiefs is a capable conjurer. This was made clear to a representative of *The Light Car and Cyclecar* last week, when he attended the Gordon England Sports Club's Christmas social at the Star and Garter Hotel, Putney. The club has only recently been formed among the employees of the firm, but it is already in a flourishing condition, and the genuine enthusiasm of its members is a certain guarantee of future success.

The function which we attended was the club's first important one, and it must have gratified the organizers to see it so well supported. There were at least 100 members and their friends present, and among them were Mr. and Mrs. Gordon England.

A full dance programme had been arranged, and the numbers were interspersed with turns by the histrionically gifted members of the firm—including the magician.

A very successful turn was the cabaret item by the "Gordon Girls," a party of five charming and vivacious young ladies, who danced and sang in quite a professional manner a sad ballad concerning the woes of a paterfamilias. But, not content with this, they went so far as to produce "Poor Poppa" himself.

A wealth of paper hats and caps and toy balloons added to the gaiety, and when the proceedings broke up at 11.30 p.m. everyone agreed that it could not have been a more successful evening.

THE "LONDON-STRATFORD-LONDON."

This year the annual London-Stratford-on-Avon-London reliability trial is open to members of the Bucks County M.C., the Egham and D. M. and L.C.C., the London Eagle M.C. and the Watford A.C. The 190-mile run starts from Stanmore on January 16th, and will be confined chiefly to main roads, but Tunnel Slide and Watworks Hill, together with some miles of secondary roads, are included in the outward journey. The awards are the Shakespeare cup, silver cups, and the usual silver and bronze medals. The organizing club, the City of London M.A., has adopted the scaled watch system of timekeeping in order to avoid any possibility of unfairness to the competitors.

The entry fee for this event is 5s., and forms may be obtained from Mr. N. E. Hollis, 14, Blenheim Gardens, Crickwood, N.W.

FORTHCOMING EVENTS.

- December 31.
Bucks County M.C. Dance.
- January 9.
Wood Green and D. M.C. All-Ladies' Trial.
- January 13.
Woodford and D. M.C. Annual Dinner and Dance.
- January 14.
Essex M.C. Annual Dinner and Dance.
Sutton Coldfield and N. Birmingham A.C. Annual Dinner and Dance.
- January 15.
Catford M.C. Annual Dinner.
- January 16.
City of London M.A. London-Stratford-London Trial.
- January 21.
J.C.C. Yorks Centre. Annual Dinner and Dance at Leeds.
- January 28-29.
Belsize-Bradshaw L.C.C. Annual General Meeting.
- January 28-29.
Cardiff M.C. and C.C. Cardiff-Leicester-Cardiff 24-Hour Trial.
- January 29.
Woking and D. M.C. and C.C. Winter Trial Starts.
- February 1.
J.C.C. Yorks Centre. Annual General Meeting.
- February 19.
J.C.C. Yorks Centre. Hatted and Masked Event.

THE CARDIFF-LEICESTER TRIAL.

Entries for the Cardiff M.C. and C.C.'s first annual 24-hour trial, from Cardiff to Leicester and back, to be held on January 28th and 29th, 1927, must reach the organizing secretary, Messrs. J. J. Bond, Harvey, Bannister, Cowbridge Road, Bridgend, Glam., and Mr. K. Roberts, 51, Longpass Avenue, Cardiff, by January 21st.

ULSTER AUTOMOBILE CLUB.

A deputation consisting of Messrs. J. S. Garrett (vice-chairman), Harry Ferguson, C. A. R. Shillington, D. Ross (secretary) and R. Craigan (local manager), waited on the police committee of the Belfast Corporation on Thursday, December 16th, with reference to the question of parking accommodation and the control of traffic generally in the city. Certain places were mentioned as being suitable for car and bus parks and for one-way traffic streets. Reference was also made to the necessity, where possible, of diverting horse-drawn traffic from the centre of the city and of dealing with the question of pedestrians. Councillor R. J. Adgey, J.P., chairman of the committee, thanked the members of the deputation. He mentioned that some of the suggestions had already been approved by the police authorities, and the committee, and said the others would be carefully considered.

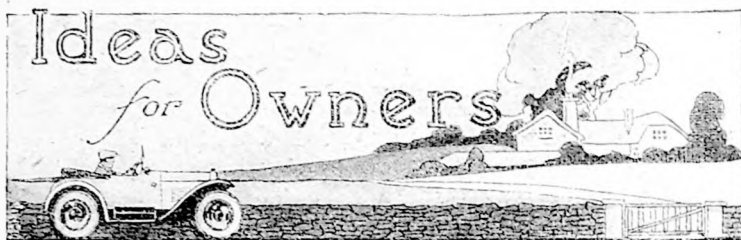
PORTSMOUTH AND DISTRICT JOWETT CAR CLUB.

The Portsmouth and District Jowett Car Club held a carnival dance, whist drive and annual presentation of prizes on December 15th at Kimbulla Cafe, Southsea. About 120 guests were present and all thoroughly enjoyed themselves. Prior to refreshments being served, Mr. T. G. Hayter, chairman of the J.C.C. South Western Centre, presented the prizes to the successful competitors in the various contests held during the year at the monthly rallies. In addition, the Mitchell reliability bowl and accompanying prizes were also awarded. The hon. secretary spoke of the growing enthusiasm of the members, also of the help given and enthusiasm shown by the women members at competitions. He hoped still more women would join in the New Year. Mr. F. Peckford, who acted as chief marshal in the reliability trial, complimented those who entered on their excellent timekeeping throughout the run, and promised a fine run next season. Mr. Hayter complimented the various winners and stated that big things in motoring in and around Portsmouth were apparent by the keenness shown by the Jowett Club members and officials. He urged them to forge ahead and add further laurels to such a good beginning. He also promised a challenge cup, which was gratefully accepted by the committee of the club. Musical honours were accorded Mr. Hayter.

Any information concerning membership, etc., will be gladly forwarded on application to the hon. secretary, Mr. L. Plattford-Doune, Balmora, 7, Aston Road, Southsea.



The imposing array of trophies offered in connection with the Cardiff M.C. and C.C.'s first annual 24-hour trial.

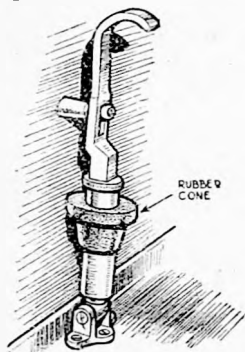


We invite readers to send us hints gained from their own experience for inclusion in this feature. Five shillings will be paid to the sender of any hint published, but we cannot undertake to return contributions not used.

Curing Bonnet Rattle.

Bonnet rattle is a source of annoyance experienced by most motorists at some time or other. There are many methods of eliminating or damping the noise, but the following is probably a new one:—

If the fasteners are of the popular spring-loaded barrel type, rubber cones, as used on the water-gauges of boilers, should be obtained and fitted to the tubes, as shown in the accompanying sketch. The cones, in various sizes, can be bought at any engineers' merchants at a small cost and they may be stretched over the top of the fastener for fitting.



Utilizing a rubber water-gauge washer to stop bonnet side plates rattling.

For Automatic Screen Wipers.

The automatic suction windscreen wipers now so commonly used have the disadvantage that their operation is dependent upon a long length of rubber tubing connecting the instrument with the carburettor intake. Sooner or later this tubing gives trouble through perishing, with the result that the wiper stops working and the carburation is upset through air leaks.

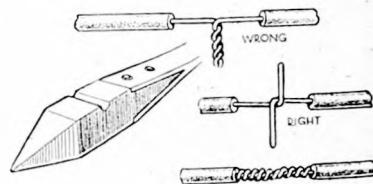
These difficulties may easily be overcome by the substitution of a length of $\frac{3}{8}$ -in. copper tubing connected at its extremities by short pieces of rubber pressure tubing. The copper piping may be bent to follow closely the windscreen lines, and it should be fixed by secure clips. This system will last indefinitely, for the pressure tube will perish only very slowly. To add a pleasing finish to the job the exposed part of the piping might be nickel-plated or tinned.

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Joining Electric Wires.

When it is necessary to join the ends of two electric wires the first job is to strip off about $\frac{1}{2}$ in. of the insulation from each. If multi-stranded wires are being used all the bared strands must be twisted lightly together, then each bared portion is bent to a right-angle at a point about $\frac{1}{4}$ in. from the end. The two angles are now interlocked and the bent-up end of each wire wrapped spirally around the straight portion of the other, as shown in the accompanying illustration, which depicts also the wrong way to join wires by twisting.

Except in an emergency it is advisable to solder the wires after twisting; this can be done easily and neatly by using a soldering iron in which a half-round groove has been filed. Solder is melted into the groove and then the fluxed wires are laid in and slowly rotated; in this manner the solder finds its way into the spaces between the spiral twists and a good electrical joint results. Finally, the joint is cleaned and covered with insulating tape. Single-strand wires are, of course, joined in a manner similar to that described above.



The right and wrong ways of joining wires, and a tip for simplifying soldering.

Citroen Speedometer Belt.

Citroen owners may find the following hint in connection with the speedometer drive useful:—When the belt breaks a good substitute can be made from a piece of acetylene gas tubing, $\frac{1}{2}$ in. outside diameter. A short length of leather belting (as used on sewing machines) is inserted in both ends of the rubber tubing, which are brought together, and fastened with small tacks. This is a very efficient arrangement, and it has been known to last for over 3,000 miles.



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.

M.A.L.F. (London, W.1).—As the 1922 Morgan you mention has been overhauled by a reputable firm it should give excellent and trouble-free service. The price asked is, in the circumstances, quite reasonable.

C.F. (Exeter).—The fact that your Rover Eight engine runs faster when you stand on one running board and slower when you stand on the other is not unusual. It is due to slight chassis twist causing a movement of the throttle-control rod, and is not harmful.

S.E.L. (Dovercourt).—The fact that the oil-indicator button on the fascia board does not come out is no proof that the oiling system of your 1921 G.W.K. engine has failed; but it is certainly a warning. Disconnect one of the oil pipes when the engine is running; this will prove definitely whether or not oil is circulating.

H.J. McG. (Co. Durham).—Backlash in the steering can be eradicated to a large extent by having the track-rod ends rebushed. On the latest models ball joints are used at these points and the trouble does not occur.

E.C.D. (Carnarvon).—There is no reason why you should not use an ordinary bicycle patch to mend the puncture in your pneumatic upholstery. Vulcanizing would make a better job of it, but it is not necessary.

J.C.G. (Dorchester).—In view of your inexperience we do not advise you to dismantle your magneto. In any case your trouble would appear to be nothing more serious than a sticking rocker arm, which can very easily be rectified.

C.A.C. (Felixstowe).—Double-pole ignition cannot be effected by placing another sparking-plug in the compression-tap orifice and connecting up the two plugs with a length of cable. Either a special magneto or a special plug must be used, and, of course, the latter method is the cheaper. Any of the prominent sparking-plug makers could supply a set of double-pole-type plugs (only one is necessary for each cylinder).

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*Hill Climbing
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CITROEN	1926, 11/4 h.p., English body, 4-seater, usual equipment, like new, only done 4,000 miles ..	£127-10
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Opposite OLYMPIA,
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AROUND THE TRADE.

A retail price reduction of 10 per cent. on Englebert tyres came into force on December 9th.

Readers who would care for an interesting little leaflet, entitled "Winter Motoring Hints," should apply to the publishers, Vacuum Oil Co., Ltd., Canton House, Westminster, S.W.1.

We have received from Stepney Tyres, Ltd., Stepney Works, Llanelli, a copy of their new reduced price list, No. 124, which shows reductions from 10 to 20 per cent. off all previous lists.

The Michelin Tyre recent reduction in about 20 per cent. prices was issued on

our attention to the their tyres, averaging out the new

The attractive aluminium souvenir which has been distributed by R. W. Coan, Ltd. (See paragraph below.)

the slogan near Bath, to describe the duple-joint which they use in the manufacture of their garages and motor-houses.

Ansald Motors, Ltd., 12, Brewery Road, Caledonian Road, London, N.7, inform us that Mr. Jac Pedersen has accepted the general managership of the company after an exhaustive trial of the cars and a visit to the factory at Turin.

"The Benjamin Reflector and Lighting Service Bulletin" is a bright advertising folder issued by The Benjamin Electric, Ltd., Brantwood Works, Tottenham, London, N.17, and the latest number takes the form of a seasonable greetings card.

An attractive Christmas card, issued to their shareholders by the directors of Singer and Co., Ltd., showed an aerial view of the works, which have a total covered floor space of 16 acres. No fewer than 2,500 workpeople are employed.

R. W. Coan, Ltd., Aluminium Foundries, 219, Goswell Road, E.C.1, have distributed as usual this year an acceptable little souvenir to their trade friends. It takes the form of a tastefully ornamented aluminium dish and is depicted in an accompanying illustration.

The 1927 edition of the Rexine Diary and Motorists' Log Book has been still further improved. Handsomely bound in Rexine, containing a wealth of useful information for the motorist and of a handy pocket size, it sells for 2s. 2d. post free. We understand that only a limited number are for sale.

Messrs. Harold Townend, Ltd., the well-known motorcar insurance brokers, have removed to a more commodious suite of offices at 73-76, King William Street, London, E.C. (Telephone, Royal 6122.) Their policies, full details of which can be obtained by applying to the new address given, are very attractive.

QUAINT QUERIES—No. 8.

The winner is Mrs. A. Eveleigh, 32, Sefton Park Road, Bristol. The Quaint Query was: "Why did the float chamber laugh?" and the winning answer was: "Because it was so tickled that its spirits rose and it fairly bubbled over."

FULL ASSOCIATE MEMBER'S BENEFITS OF THE R.A.C.

FOR OWNERS OF
CARS UP TO 1100 c.c.
FOR

£1 : 1 : 0 p.a.

From 1st January, 1927.

Hitherto the annual subscription for Associate Membership of the R.A.C. has been two guineas for all car owners. From 1st January, 1927, the R.A.C. has decided to offer the full benefits of Associate Membership to the owners of cars with an engine capacity of 1100 c.c., or under, at the reduced subscription of One Guinea per annum, without entrance fee. The R.A.C. Road Service is the most comprehensive offered; it is also the cheapest.

..... Cut out, fill in in Block letters and post to

The Secretary,
ROYAL AUTOMOBILE CLUB,
87, PALL MALL, LONDON, S.W.1.

I would like to become an Associate Member. Please send me
illustrated booklet and full particulars free of charge.

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Definite allowance per return for your present car or machine on receipt of full particulars. Delivery and collection, £5 10 0 extra. Anywhere in England, Scotland or Wales.

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From one-tenth of the purchase price down, your present machine as deposit, balance to suit yourself. Our R.P. Folder will tell you more—GET IT.

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and inspect our stock. If you are not satisfied, no matter how long you wait, we will not worry you.

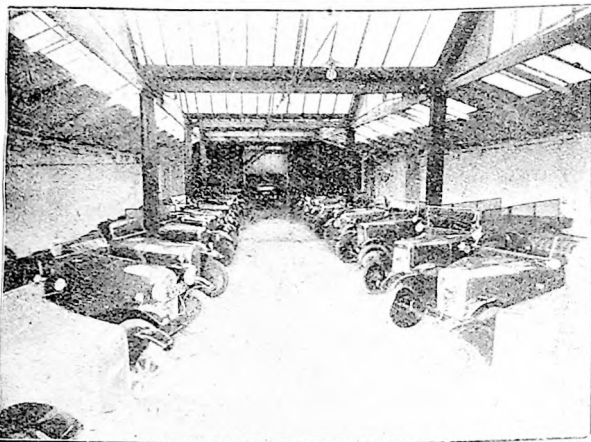
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are conspicuously marked with their year and price.

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Standard - £89

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is now being fitted with a scientific Automatic Attachment which synchronizes with the Carburettor and only admits extra air over certain fixed speeds without any attention whatever from the driver. Remarkable results have been obtained from tests tried under normal conditions, and special facilities will be granted to satisfied users of the Mosaire to fit the Automatic Attachment, which can be fixed to the existing device in a few minutes.

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Hand operated, with Easy Starter ... 32/6

Automatic ... 32/6

Combined Automatic and Easy Starter ... 42/6

Automatic for existing Device ... 10/-

The Mosaire Explosivises the Petrol and gives more power with less fuel consumption, and is a supercharger in a simple form.

Send for our 54-page Booklet giving full particulars and the Opinions of Owner-Drivers on various makes of cars under all sorts of conditions.

ALDAM & CO.
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To choose either the Morgan Runabout or Singer Junior for 1927 is to ensure really successful Motoring—safe, reliable, comfortable and economical motoring!

New MORGAN Models.

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A triumph of SINGER values. Roomy body carrying 4 adults in perfect comfort. 3 doors. Adjustable front seats. Comprehensive equipment. Wonderful value at £148-10-0. Tax £8.

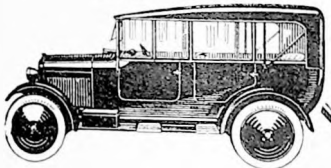
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With the wonderful value E-cylinder Saloon and the Junior: full Four-seater.

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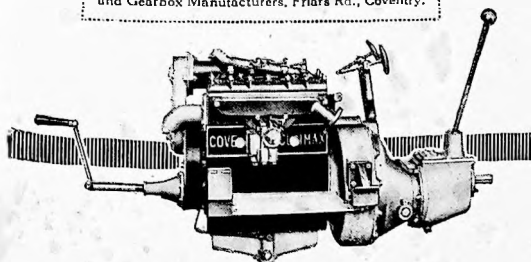
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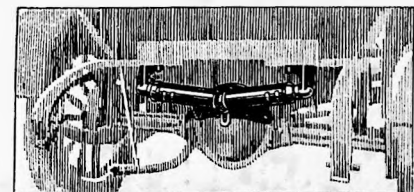
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The CARDINE Spring Suspension MODERATOR reduces the number of oscillations of the rear leaf springs from about 120 per minute to about 70 per minute, and it does this irrespective of the number of passengers or the condition of the road or the speed. The enclosed helical springs of the Cardine Moderator so control the operation of the car springs that a uniform rhythm of movement is obtained—no sudden jolt or jar—just a gentle smoothness of riding with a complete "flattening out" of road unevenness. It greatly improves the road-holding properties of the car, the cornering stability, and annihilates all tendency for the back wheels to "dither."

With Cardine Moderators fitted you can ride with luxurious comfort alone. What a boon to be able to ride as comfortably alone as when a full complement of passengers is up! Let us send you our leaflet.

Gentlemen,—Permit me to express my appreciation of your Suspension Moderators which you recently fitted to my Morris-Cowley Car. Since having same fitted I have not to slacken speed over pot holes or ridges, the motor keeping the road beautifully. The ladies praise the comfort it gives them in the back seats and join with me in thanking you for this additional boon to motoring.

Believe me,
Yours respectfully (signed) J. LEWIS.



Equipment made up of 3 distinctive parts only—helical springs, their casings, and the bearing spheres. EASILY FITTED.

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Complete sets available now for Clyno and Austin Seven cars. If your car is not mentioned here, send us details of make, year, type of body and chassis number, and we will give you a delivery date.

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