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**At 489,
Oxford Street**

**A SPECIAL DISPLAY
OF AUSTIN SEVENS**

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Over 20 different Sevens to
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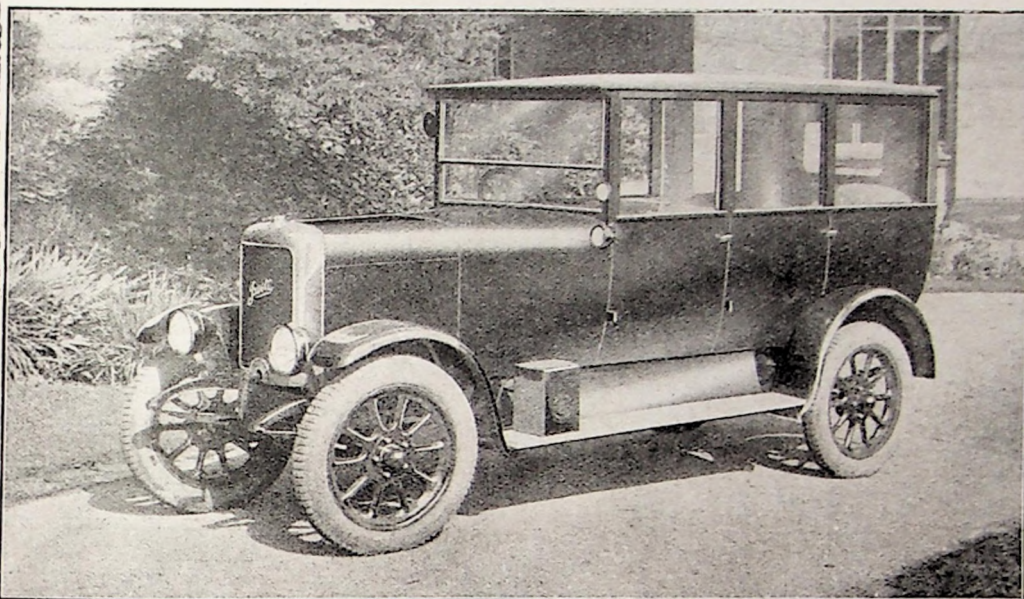
NORMAND
GARAGE LTD.

92,
Gloucester
Road, S.W.7.

NEAR MARBLE ARCH.
489, OXFORD STREET, W.1.
OPEN UNTIL 6 p.m. ON SATURDAYS.

7 and 8,
Fairmeadow,
Maidstone.

Of course you can



REMEMBRANCE



WEAR A POPPY

Mr. Ernest V. Mallett, 27, Fair Street, Tower Bridge, London, averages between 49 and 50 miles to a gallon of petrol. His car is a Jowett Saloon.

Mr. G. H. Hirst, Post Office, Luddenden, has done 31,000 miles on a Jowett full four on one set of Dunlops, and states three of the tyres are good for thousands yet.

REMEMBRANCE



WEAR A POPPY

We advertise the oil consumption as 1,500 miles per gallon. Mr. W. Duncan, 4, Cedar Avenue, Belfast, tells us we are too modest. He writes: "I had been rather doubtful about buying a car owing to the cost of running, but my fears have vanished."

Of course you can afford to motor if your car is the pioneer light car, the Jowett. The cheapest to buy, the cheapest to run.

"The little engine with the big pull."

Short two, £134. Long two, £142. Chummy, £142. Full four, £145. Sports, £145. Coupé, £168. Saloon, £170.

Dunlop Tyres and Stewart Speedometers standard.

JOWETT CARS LTD., IDLE, BRADFORD

Giant Energy



C.A.V. BATTERIES

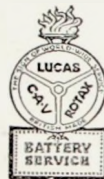
A touch of the starter switch releases tremendous starting current from a C.A.V. Battery, which will awaken to life the most sticky engine as though by giant energy.

Such performance is the well merited achievement of unceasing efforts for improvement in battery manufacture, extending over a period of 26 years.

Super refinement in design and construction of every single part provides wide margins of electrical efficiency and mechanical strength, ensuring reliable, vigorous and trouble-free service to every owner of a C.A.V. Battery.

There is a C.A.V. Battery for your car which will fit—and a Service Agent near you who will supply it—let us send you his address.

Every C.A.V. Battery Owner is entitled to our world-wide FREE BATTERY SERVICE.



C.A.V. Vandervell & Co. Ltd.
ACTON, LONDON, W 3

SALES AND SERVICE DEPOTS AT
Belfast, Birmingham, Bristol, Coventry,
Dublin, Glasgow, Leeds, Manchester, and
Newcastle-on-Tyne.

Battery Service Agents in every important centre throughout the country.

ELEPHANT SERVICE

Always insist on ELEPHANT replacements.

PARTS IN STOCK FOR

A.C. AUTOCRAT, CALTHORPE, CALCOTT,
CASTLE 3, ENFIELD, ERIC CAMPBELL,
HAMMOND, HORSTMAN, LAGONDA,
MARSEAL, MERCURY, METEORITE,
SINGER, STELLITE, SWIFT, WARREN-
LAMBERT, DUPLEX, LITTLE GREG,
etc., etc.

WE ARE ACTUAL MANUFACTURERS.

BELSIZE-BRADSHAW SERVICE

Sole Makers of all parts for these cars. Send for Instruction and Improvement Book 2/6

DEEMSTER SERVICE

All parts for all models with improvements at lower prices than Deemster official prices.

WORM WHEEL SERVICE

All makes from stock in special Phosphor-Bronze. Special Worm Wheels made in three days.

Gear Cutters, Machinists, Founders & Engineers.

Elephant Motors Ltd.

ELEPHANT HOUSE,

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'Phon.—Hop 7076-7-8.

'Grams—"Multimart, Sedist. London."



IT MAY BE TO-DAY
IT MAY BE TO-MORROW

Where will you be
when it happens?
Be safe and pack

FLUXITE

it simplifies soldering

FLUXITE SOLDERING
SET - - Complete 7/6

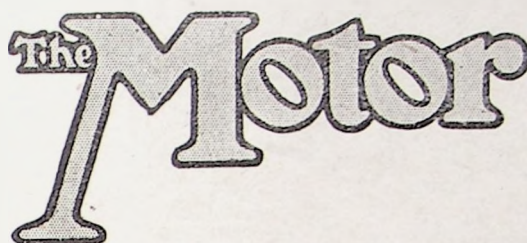
All Hardware and Ironmongery Stores
sell FLUXITE in tins, price 8d., 1/4 and
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Tools and Case Hardening. Ask for
leaflets on improved methods.

FLUXITE LTD.

(Dept. 40, Rotherhithe, S.E.6)

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

Features of this Week's Issue



TUESDAY, NOVEMBER 8th.

FULLY ILLUSTRATED REPORT OF THE SCOTTISH MOTOR SHOW.

Several Interesting "Sixes" Shown for the First Time.

SKID-PREVENTION EFFORTS.

Road Fund Report Describes Experimental Tests of Concrete Surfaces.

SERVO STEERING AND OTHER INVENTIONS.

Two New Steering Gears and a Novel Valve Gear.

GREAT BRITAIN AND MOTOR RACING.

Donation of £500 Towards a National Fund from Mr. T. B. Andre.

ITALY'S WONDERFUL MOTOR ROADS.

Speed and Safety on the Super-Highways of the World.

AMATEUR FITTING-OUT.

Gossip on Gadgets and How to Install Them.

AN AUTOMATIC CHASSIS LUBRICATION SYSTEM.

Constant Supply of Oil by Wick Feed.

A 750 c.c. EIGHT-CYLINDER TWO-STROKE ENGINE.

Novel French Design with Integral Supercharger.

THE HUMFREY-SANDBERG FREE-WHEEL CLUTCH.

Promising Device which Renders Gear-Changing Foolproof.

ROAD TESTS SHOWING PRINCIPAL CHARACTERISTICS.

The 6-Cylinder Alvis Alvisia Saloon and The Singer Senior Fabric Saloon.

GRAND PRIX d'EUROPE FOR BROOKLANDS.

NEXT WEEK!

Some Features of the November 15th issue.

MOTOR TEAM RACING TACTICS AND THE PUBLIC—Subtleties in Certain Contests Which are Resented by Spectators. HOW A GRADIENT METRE WORKS. A WORD TO BEGINNERS —The Wisdom of Leaving Well Alone and the Danger of Needless Tinkering.



PUBLISHED TUESDAYS 4d.

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

WHY SHOULD ?



Because
A GOOD CAR IS
WORTHY OF A GOOD OIL

Filtrate Works, Leeds.

IN THE "BIG-LIGHT"

The new
1928 "BIG LIGHT" 10/24 h.p. Weymann Saloon.
Four-cylinder, four-door, four-wheel brakes (Tax £9). Finished dark grey or dark red, real Weymann body. Every modern refinement in equipment.

40 m.p.g. petrol 1,500 m.p.g. oil.
1,500 miles per set of tyres.
Complete freedom from mechanical troubles.

No-expense" bodywork.

as shown

The manufacturers of MATHIS cars have never sacrificed Comfort at the altar of Economy — which fact is convincingly evident in the 1928 "BIG LIGHT" models.

HOWEVER fastidious of your comfort you may be, you cannot justly find anything but enthusiastic praise for the MATHIS 10/24 Weymann Saloon. The passengers in the back seat are treated with the same consideration as the driver — the same roomy seat and velvety springs, and the same easy leg room.

And the body is *REAL* Weymann — not the fabric imitation that marks the obviously cheap cars of the moment. Write or phone for a trial run.

25, Basil Street, Knightsbridge,
London, S.W.1
(near Harrods).

Phone : Sloane 6118/9. Grams : Aumarshano, Knights London.

Glasgow Agents: D. McNeil, Ltd., 144, Buchanan Street.

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

When you come to The Service Co. you get the advantages of:—



WEAR A
FLANDERS POPPY

1. **SELECTION.** Our Agencies for 1928 include: — ALSTIN, CITROEN, CLYNO, JOWETT, PEUGEOT, ROVER, SINGER, STANDARD, SWIFT—all famous makes. We have latest models of these (and other makes) in stock, both new and second-hand for you to choose from.
2. **EXTENDED PAYMENTS.** Only a fifth of the total cost down secures immediate delivery. The remainder may be extended over periods of 12, 18, or 24 months. This is broadly speaking; as we finance our own scheme, terms can be arranged to suit your convenience.
3. **PART EXCHANGE.** The highest possible allowance is made for your old car in part exchange. This could stand as deposit and the balance can be arranged in suitable monthly payments.
4. **NO DEPOSIT.** This scheme applies to new cars only. The total cost is divided into 12 equal monthly instalments and delivery is given on the payment of the first.
5. **"ALL-IN."** Such items as Insurance, Tax, Accessories, and even motor clothing can be added to the cost of the car and included in our extended payment scheme, making it a "One Account" transaction that *must* save you much time and bother.
6. **SERVICE.** It is our name and constitutes our aim. Really helpful service before and after sale, with the little matters given as much attention as the "Big-uns."

Come to The Service Co—
the House that made the
roads of England...Busy.

Established as long as the Industry.

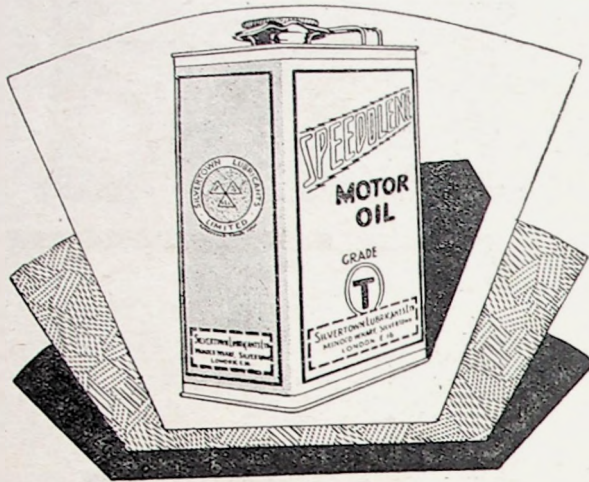
The Service Co. Ltd.
(LONDON)

Telegrams:
"Admittedly
London."

273-274, HIGH HOLBORN, LONDON, W.C.1.

FREE. Send to-day for a copy of our novel catalogue "The Diary of a Car Tester." It gives full details of 1928 models.
Post Free.

Telephone:
Holborn
0564-5-6.



Nothing we can say is so effective as the opinions of motoring journalists who have tried "Speedolene" and given their unbiased opinions.

SPEEDOLENE

THE OIL OF OILS

"The engine is remarkably free when starting from cold, and so soon as the induction manifold is warm enough to give good carburation the engine pulls practically as well as when it is warm. The advantage that Speedolene gives when a car is used a good deal for short runs in the winter will readily be understood, and this we proved by several tests on various gradients."

The Light Car & Cyclecar, Feb. 18th, 1927.

Special series of brochures and full particulars on request.

Silvertown Lubricants Limited, Minoco Wharf London, E.16

Not a heater only, but a lamp with "101" uses, absolutely safe in all.

Start with a swing on the frostiest morning

Cold causes no concern to motorists who use the

PROTECTOR PATENT SAFETY LAMP

Approved by the leading Insurance Companies and used by H.M. Government.

Placed in the bonnet of your car overnight, it will circulate warm air around the engine, keeping the oil from solidifying, and ensuring an easier start-up in the morning.

In addition, it will prevent a freeze-up, cracked cylinders and jackets, and eliminate all necessity to drain the radiator. A simple and absolutely efficient alternative to an expensive heating and lighting installation in the garage.

And the "Protector" is the only lamp of its kind which is absolutely safe in use. You cannot have a fire or explosion with a "Protector."

Other uses of the "Protector."

An ideal emergency lamp on the roads at night, for the strongest gale cannot blow it out. As a night light in the kitchen or bedroom it is unequalled for its compact size from its use.

For night inspection in Mill, Factory, or anywhere containing combustible, volatile or gaseous materials and atmosphere.

GET A "PROTECTOR" NOW. You need it this winter.

The "Protector" burns petrol, 20 hours, one filling, costing less than 4d. Gives 1 C.P. light (adequate for inspection purpose), is clean, free from smell. Turned in solid brass, British made, weighs 5 lbs., measures 10" x 3 1/2".

Sold by Garages and the sole makers.

Carriage Paid in U.K.

PROTECTOR LAMP & LIGHTING Co., Ltd., ECCLES, MANCHESTER.

20/-

Place lamp in bonnet overnight and ensure easier starting in the morning.

LONDON MORGAN SERVICE DEPOT ANNOUNCE NEW 1928 PRICES

Aero, O.H.V., J.A.P. Model	£132
Super Aero O.H.V., J.A.P. Model	£145
Aero Model	£119
Air-cooled Family Model	£102
Water-cooled Family Model	£112
Air-cooled de Luxe Model	£100
Water-cooled de Luxe Model	£110
Standard Model	£85

Self Starter, £8 extra. Geared Steering, £2 extra.

DEFERRED TERMS. TRADE SUPPLIED.

Write for Catalogue.

HOMAC'S
MOTOR AGENTS

Phone: Clarendon 2408.

Send for Lists.

243/7, LOWER CLAPTON ROAD.

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

The All-British **Standard**

The "Falmouth" Fabric Saloon, illustrated below, has the "Stanlite" opening head. In bad weather it is a snug and draught-proof closed car. In good weather you can fold the roof back and enjoy the scenery, sun and fresh air.



**of the roomiest,
lowest-priced, most
economical and
distinctive small
cars you can buy.**

***Seats 4 "Six-Footers" comfortably
45-48 m.p.h. 40***

The "FALMOUTH"
Fabric Saloon
(Illustrated)

£215

"SELBY" 4-seater
or

"COLESHILL"
2-seater

£190

"Standard" Cars are Cellulose
finished in red, blue or fawn.
Dunlop Tyres.

Write for full particulars:

The Standard Motor Co.
Ltd. - - - Coventry.
London Showrooms:
49, Pall Mall, S.W.1.

Agent everywhere.

and no part of radiator left exposed.
Compare the perfect fit of the

MIDLAND Radiator Muff

which is shaped to fit to each individual type of car and needs no adaption; fitted in a few seconds. It is a sound engineering job scientifically made by Motor Experts to maintain utmost thermal efficiency.

It is definitely waterproof and weather-proof—will not crack or get out of shape and lasts practically for ever.

Write for free illustrated Folder.

MIDLAND GEAR CASE Co., Ltd.,
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Birmingham.

Note the Prices.

Austin 7	10/-	Peugeot	11/-
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Rover 10/25	11/-	Jowett	12 6
Singer 8	11/-	Citroen 7	12 6

WARNING!

Every skid or side slip is a warning to fit M'Kinnon—the chains which hold their own under the worst possible conditions
The most reliable and most convenient to use. Also the cheapest.

Easy on
Easy off!!

CHAINS

SINGLE AND TWIN PNEUMATICS.
SINGLE AND TWIN SOLIDS.
BALLOONS.

SCOTTISH SHOW, STAND No. 176

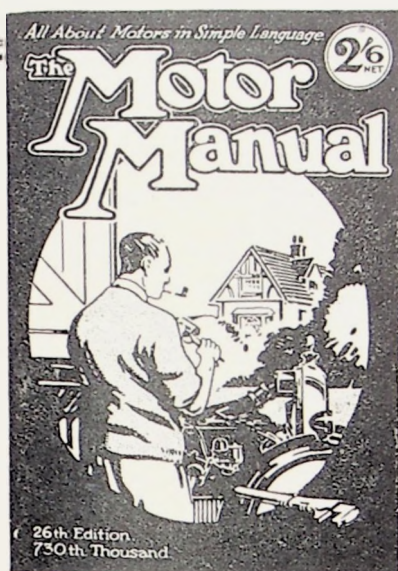
Sole Concessionaires for Great Britain and Ireland.

ACCESSORIES (EDINBURGH) LTD.
48, Essex St., Strand, W.C.2 4, Queensferry St. Lane, 169 & 111, Cowgate,
LONDON. EDINBURGH. DUNDEE.

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

Can you answer these questions

about the Motor Car?



"The Motor Manual"

omits no item of information likely to be of interest or service to the motor vehicle user. A detailed diagram illustrating a typical modern chassis is included as frontispiece. The volume deals fully and clearly with engine types, construction and operation, valves, etc.—carburation, cooling and silencing—transmission system, from clutch to final drive—braking systems—ignition, starting, lighting—bodywork and equipment, wheels, tyres, accessories—choosing, housing and maintaining a car—repairs and renewals—touring—legal matters, etc., etc. It also gives at length much practical motoring data and information, including an extensive glossary of motoring technical terms.

How does the differential work?

What's inside the gearbox?

What is the 'working cycle' of operations in a cylinder?

What is the principle of the timing gear?

Of what does electrical equipment consist?

Why does an engine 'knock'?

How does a two-stroke engine work?

What is the operation of a sleeve-valve engine?

THESE are a few of the hundreds of matters fully dealt with in the twenty-sixth edition of "The Motor Manual." In its 206 well-illustrated pages it contains more practical, understandable information about motors and motoring than does any other single book. A glance at the list alongside will reveal its comprehensive scope.

You get twice the pleasure from motoring, and save money too, if you thoroughly understand your car. Let "The Motor Manual" tell you what you want to know!

The Motor Manual

PRICE 2/6 NET

From all Bookstalls and Booksellers, or direct from the Publishers 2/10 post free.

Temple Press Ltd., 5-15, Rosebery Avenue, London, E.C.1
Wholesale Agents: E. J. Larby, Ltd., 30, Paternoster Row, E.C.4.

SAVE YOUR BATTERIES!

WHAT is more annoying

than after having spent a pleasant evening, either at a dinner or dance, to come to drive home and find you have no lights, your battery having run down while your car has been parked?

This simple little Parking Set, as illustrated, will dispel all these troubles. It consists of Two Lamps which burn paraffin oil. One clips on to the side of the windscreen frame (either side), and the other clips on to rear number plate. These lamps will burn for about 30 hours continuously. There is also a container for carrying spare paraffin for refilling lamps. The whole set is packed in a Metal Box, which can be fixed to running board or carried in Tool Box. Price complete, carriage paid . . .

Brackets for attaching to Saloon Cars can be supplied separately.

ORDER NOW DIRECT FROM THE MOTORING SPECIALISTS

GAMAGES

HOLBORN,

LONDON, E.C. 1.

And at 107, CHEAPSIDE, LONDON, E.C.2.

25/-



THE NEW PARKING LAMP SET.

THE DESMO HYDRAULIC JACK

The strong man of the Desmo family. It will lift 2 Tons easily and smoothly and only costs

35/-

Undoubtedly the finest value ever offered in Hydraulic Jacks.

DESMO FOG LIGHT

A boon to all motorists, as its amber rays can be focused direct on to the kerb and will pierce any fog or mist. Fits to the dumb iron or any convenient place on your car.

PRICE 27/6

Complete with switch and flex.

DESMO LTD., STAFFORD STREET BIRMINGHAM.

'Phone: Cen. 6547 (4 lines, Private Branch Ex.)
'Grams: "Desmo, Birmingham."

Scottish Depot: Oswald Chambers, Oswald St., Glasgow, O.I.
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8 WEEKS FREE MOTORING!

THE £50 CAR HAS ARRIVED!!

GENUINE SALE OF CARS

Taken in part exchange for New Ones.

25 CARS at £50 EACH AND UNDER

MOST OF THEM CARRYING OUR WELL-KNOWN WRITTEN GUARANTEE.

30 CARS from £55 to £100 EACH

ALL CARRYING OUR WELL-KNOWN WRITTEN GUARANTEE.

Full Price Paid will be allowed on any of these cars if you purchase from us a new car within two months.

Best Exchange and Deferred Terms in London.

Special Agents for Austin, Standard, and Wolseley Cars.

YOU NEVER TAKE A RISK WHEN YOU BUY A CAR FROM

The Light Car Co.

404, 410-414, EUSTON ROAD, LONDON, N.W.1.

'Phones—Museum 3081 and 2122 (3 lines).

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**4 DOOR... 4 WHEEL BRAKES
FULL FOUR SEATER**

45 M.P.G. TAX £9 OVER 45 M.P.H.

In the 9/15, low prices are never confused with cheapness. It is thoroughly sound in every detail of construction and design. The price appeals, but it is price combined with roominess which clinches the purchase. No motorist desires "cramped" economy. Seating comfort and leg room is essential and this the 9/15 provides in ample measure. Visit our Showrooms and inspect the various 9/15 models or see them at the Scottish Motor Show on the following stands: Stand 84, by R. Y. Dickson, 144, Castle Street, Glasgow. Stand 57, by H. & D. Cleland, Belford Bridge, Edinburgh. Stand 76, by John Croall & Sons, Ltd., MODELS FROM **£169** 310a, St. Vincent Street, Glasgow.

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ALSO THE 12.5 H.P. 6 CYL. MONASIX

Designed with an unusually low centre of gravity and a 4ft. 3 1/2 in. track, it is safe and comfortable on all roads and at all speeds. Particularly will it be prized for its lively accelerating and thrilling speed of over 55 m.p.h. combined with a 35 m.p.g. petrol economy.

Prices: 4/5 seater four door Tourer £279. De Luxe four door Weymann type on metal panelled saloon £299. 4/5 seater fixed head all-weather £324. Folding head coupe with double dickey £324.

RENAULT LTD., Head Office and Works: 14, SEAGRAVE ROAD, WEST BROMPTON, S.W.6.

Showrooms: 21, Pall Mall, S.W.1

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All the latest commercial motor vehicles and accessories will be described and illustrated in

THE COMMERCIAL MOTOR

SPECIAL SHOW NUMBERS

2nd

Nov. 15th.

Containing tables of abridged specifications of the whole range of chassis and vehicles on the British market.

Actual sale more than three times that of any similar journal.

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Nov. 22nd.

Containing a fully illustrated report of the Motor Transport Exhibition at Olympia, London.

Price 3d. Of all bookstalls and newsagents.
Offices - 5-15, Rosebery Avenue, London, E.C.1.

SPECIAL SPORTS

AUSTIN 7, £165

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

ALL MAKES SUPPLIED FOR CASH, EXCHANGE, OR UPON OUR VERY EASY PAYMENT TERMS.

The following cars give both excellent and economical service:
AUSTINS .. £135 to £275 | CLYNCS .. £160 to £250
SIAGER .. £148-10 to £350 | F.I.A.T. .. £195 to £250

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

This Week's Snips supplied on 7 Days' Trial.

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ROVER, 9 h.p. 2-seater .. £99 | AUSTIN 7, 1925 .. £79

H. TAYLOR & Co., Ltd.,
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Telephone: Kensington 8558/9 and 5540. Telegrams: "Dynametro, Southkens."
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The KI-GASS PETROL MIST INJECTOR

Easily
Fitted.

FOR EASY
STARTING

Revolutionises
Starting.

PRICE

Infalible in the depth of winter for vaporising the petrol irrespective of temperature.

ABOLISHES TROUBLESOME METHODS OF STARTING.

ECONOMISES THE ELECTRICAL POWER OF THE BATTERY.

Standard Fitting on Bentley, Petter, Star, Sunbeam, Trojan, Fiat and Minerva Cars.

ROTHERHAM & SONS, LTD.
COVENTRY

'Phone: 4154.

'Grams: "Rotherham, Coventry."

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.

FIFTY MODELS

Services

GIVE WORLD SERVICE

DESPATCH RIDER.

AIR WRIST.

Complete with Strap. Three - quarter plate movement. Specially balanced for arduous wear. Vibration and shock proof. Visible **scapement**. Dust and damp proof. 12 or 24 hour dial. The watch tested by Handley, Simpson and **oods in T.T.** races. Guaranteed. Luminous 12 hour dial, 17/6.



SERVICES WATCHES

are in two ranges covering fifty models. "Sports" and "Presentation." Amongst them you will find the watch for your purpose or for your gift to any valued friend. **USE THE COUPON.**

WORLD SERVICE! A big boast! Yet that is the aim of **SERVICES** Watches. To provide models that will operate with perfect efficiency under every condition of modern life and every climatic variation. And it has been accomplished! The "Indian" and "Indian Army," impervious to heat and cold and dust in use by the Services in India. The "Navigator" and "Naval"—mist and fog and damp proof, with the Merchant Marine and Naval Services in every Ocean. The "Airman" and "Air Wrist"—delicately yet strongly balanced against the peculiar vibration of the air. The "Continental"—a splendid example of beautifully constructed Dress Watch, in use at home and abroad.

The "Despatch Rider," worn and tested by world-famous riders of motorcycles and described as the most completely vibration and shock-proof watch yet sold. The "Army," "Scout," "Ensign," "Race Timer" and "Medico" are others made for special and unusual wear.

And no watch too expensive for its occasion!

Complete with strap. Three - quarter plate movement. An exceptionally reliable watch for hard and vigorous wear. Will give splendid results on any wrist and is not affected by abnormal conditions. A shape that is attractive and well liked. 12 hour dial only. **Guaranteed.** Luminous dial 22/6.



FREE

*me Car
Presentation*

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

FIT

DELCO-REMY COIL IGNITION MAGNETO REPLACEMENT UNIT

Better Spark — Instant Start.

Delco-Remy coil ignition is famous the world over, and for many years owners of magneto-equipped cars have been asking for a replacement set to convert their cars to coil ignition. These sets have hitherto been available only for certain makes of cars, for others it has been a case of special construction and adjustment

The NEW Delco-Remy Magneto Replacement Unit is now available, designed in such a way as enables it to be fitted easily and quickly to most four and six cylinder cars, at a less cost than that of a new magneto.

Delco-Remy Coil Ignition means

Easier starting.

Better acceleration.

Increased range of advance and retard.

The end of ignition troubles.

You will get a generally improved performance from your car and will realise that coil ignition is the only system suited to the modern high speed engine.

Specifications DO Count.

PRICES:
Delco-Remy Coil Ignition
Magneto Replacement
Unit from **£5:11:6**
according to make of car.

DELCO-REMY & HYATT, LTD.,
111, Grosvenor Rd., London, S.W.1.

FREE

Write for folder and descriptive booklet:
Messrs. Delco-Remy & Hyatt, Ltd.,
111, Grosvenor Road, S.W.1.

**Ready to Erect
GARAGES**
In Wood or
Asbestos from
10 GNS.

Every
Garage is
built to last
a lifetime.

Strong, sturdy
buildings, that
will give complete
satisfaction. All
fittings supplied
—no additional
expense what-
ever.

What you Get.

Gliding-out-of-way
Doors that move at a
child's push, occupy no
room and obviate bioged
door weakness. Garages
guaranteed against fire for
twelve months. Free Plans
for submitting to Council.
Sizes for all popular makes
of cars. Deferred terms
arranged. Quick deliver-
ies. Garages can be
inspected at Works.

Send Thornbers your enquiry.
Let them know just what you want.
A advice and free literature gladly sent.

THORNBERS
for EVERYTHING IN WOOD

Specialists in Portable Buildings of all kinds.

**YOU CAN
ERECT IT IN
ONE AFTERNOON**

Merely bolt section
to section. Every
section standard
in size and
interchangeable.
All sections
complete —
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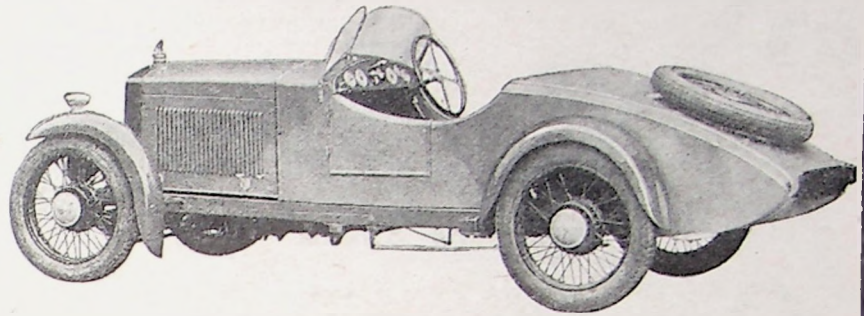
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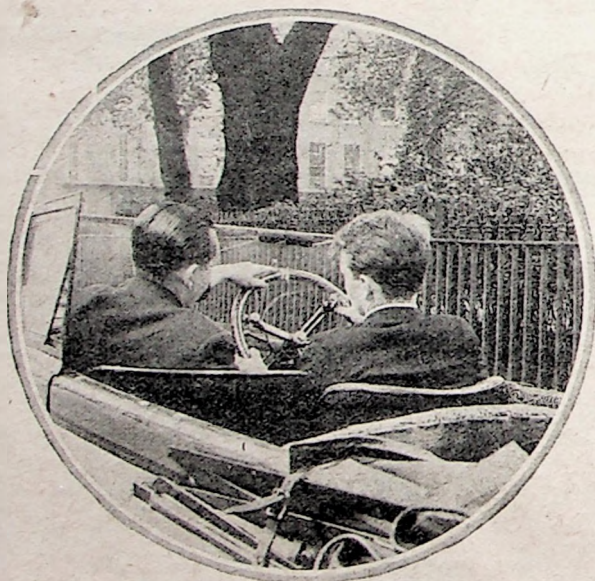
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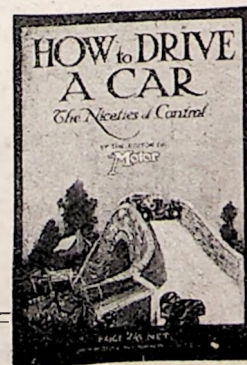
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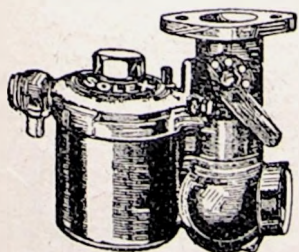
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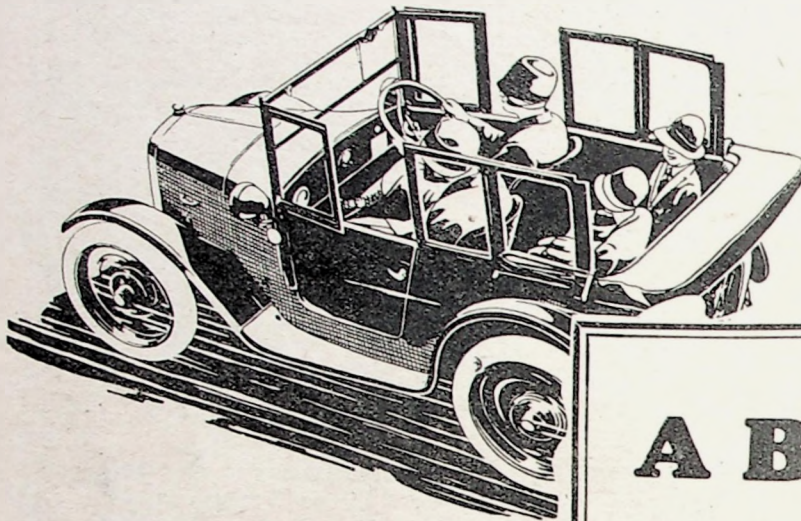
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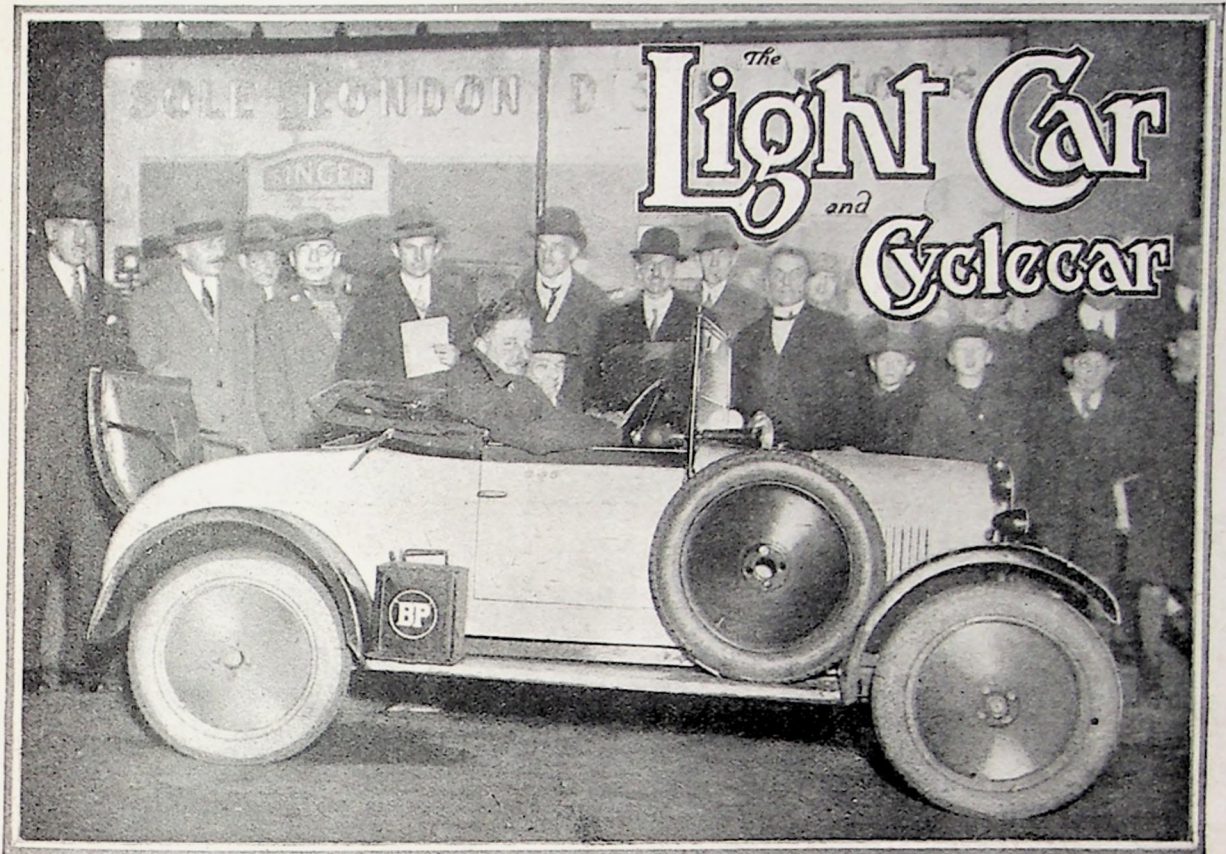
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**LONDON TO EDINBURGH
AND BACK IN ONE
WEEK-END.**

Two enthusiastic owner-drivers took this Singer Junior from London to Edinburgh and back—a distance of approximately 800 miles—without sleep and with only brief stops for meals. They received a warm welcome in Great Portland Street upon their return on Monday last.

NOTES, NEWS & GOSSIP *of the* WEEK

ON OTHER PAGES

On the Tapis ..	732
All-weather Cars that Appeal ..	733
50 m.p.h. from 175 c.c. ..	734
Possibilities of Six-cylinder Engines ..	736
The Home of Guy Fawkes ..	739
A Brooklands Bijou Meeting ..	740
Rich Mixture ..	742
The "Ruined City" of Suffolk ..	746
Cyclecar Comments ..	747
Wayside Market Crosses ..	748
Sanford Cyclecars for 1928 ..	750
Our Readers' Opinions ..	752

LIGHTING-UP TIMES (Rear Lamps) for Saturday, November 12th.

London ..	4.44	Edinburgh ..	4.39
Newcastle ..	4.36	Liverpool ..	4.49
Birmingham ..	4.48	Bristol ..	4.54
Moon—Last Quarter, November 16th.			

The Inter-'Varsity Trial.

The Inter-'Varsity reliability trial for the *Motor Cycling Cup*—one of the most interesting of the year—takes place on Saturday, November 19th. Full details of the trial will be given in our next issue.

By-passing the By-pass.

Fearing congestion on the new Kingston by-pass, many motorists are using the old road through Kingston in the hope that it will be less crowded!

Our Midland Office.

As from to-morrow, Saturday, November 12th, the address of our Birmingham office will be 61-65, New Street. Telephone, Midland 4117 (three lines).

This Week.

The point of view held by a car owner respecting motorcycles forms the subject of an informative article in this issue, the views expressed having been formed during a visit to the recent Cycle and Motor Cycle Show at Olympia. "Possibilities of Six-cylinder Engines" is the title of an expert analysis of the claims of the "six" and the "four." The first instalment appears this week, and the article will be concluded in our next issue. Our centre pages are devoted to wayside market crosses—always a subject of keen interest to tourists.

No. 779. VOL. XXX.

"Tally-ho!"

The controversy centring in the correct attitude which motorists should adopt towards hunting is continued this week and interesting sidelights are thrown on the subject. A detailed analysis of the cost of running a modern light car is given by another reader.

Next Week.

As we have already announced, our test run reports of 1928 light cars will appear in a new and, we think, very attractive form. Several pages will be devoted to each article and, in addition to our experiences with the car on the road, we shall give a brief history of the manufacturers, a glimpse of their factory methods, and useful information concerning maintenance jobs. Thus, in one article, to which reference can easily be made, the whole field will be covered, and the articles will, we hope, be equally interesting whether the reader owns the particular make described or not. The first car to be dealt with will be the 10-25 h.p. Rover Paris saloon; the article will probably appear in our next issue.

Portsmouth Approaches.

Now that Copnor Road and Milton Road have been resurfaced, motorists entering Portsmouth are advised to do so by these routes, leaving the London Road at "The Coach and Horses." In this way approximately three miles of tram lines will be avoided.

Prince to Open New Bridge.

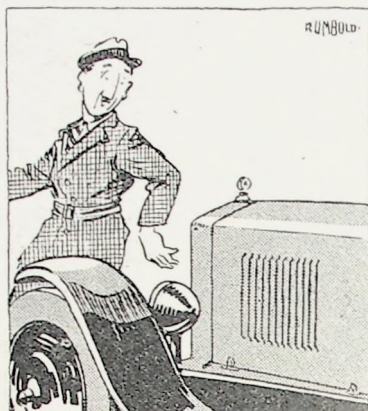
H.R.H. the Prince of Wales has consented to open the new concrete bridge and approach road at Gunthorpe on November 17th. Traffic congestion in Nottingham will be relieved by this new highway, for a direct route will be provided to the North from Leicester and to the South from Newark and Doncaster.

J.C.C. Annual Dinner.

The annual dinner and dance of the J.C.C. is to be held on Friday, December 9th, in the Grand Hall of the Connaught Rooms. The Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O., will preside, and it is anticipated that many notable people will be present. The dinner will commence at 7.15 p.m., and at the conclusion of the formal proceedings there will be dancing until 1 a.m. The T. B. André Challenge Cup for the 200-Mile Race will be presented to the winner—Captain Malcolm Campbell.

International Racing in 1928.

The Calendrier Sportif International for 1928 has recently been issued by the R.A.C. In this list is included every car race in the world receiving international recognition, and it is arranged in advance to prevent clashing of dates. The fixtures allotted to Great Britain are the three open race meetings at Brooklands on Easter Monday, Whit-Monday and August Bank Holiday, and the Grand Prix, which is fixed for September 22nd. The Junior Car Club did not apply for an international date this year; the 200-Mile Race does not therefore appear in the calendar, and the J.C.C. has arranged a date for this event without reference to Continental fixtures.



WEEKLY WISDOM.

Him that walketh like unto a jay seeks trouble, but bring it not upon him lest thine own trouble afterwards be greater than his.

A New Zealand Tax.

The Prime Minister of New Zealand has a scheme in hand for collecting £750,000 from the petrol tax for road improvement. The tax would average £4 per car.

New Orpington Road.

An arterial road four miles in length, connecting the village of Orpington to a point on the Sevenoaks Road at Pol Hill, has recently been opened. Eventually this road will be lengthened to connect up with the Sidcup by-pass, so forming a connection between the London-Hastings and London-Folkestone roads.

New York Traffic Congestion.

The operating manager of the London Underground Railway system, Mr. J. P. Thomas, has just returned from America after an investigation of transport problems there. He says that traffic congestion is very much greater in New York than in any European city, the chief trouble in New York being, according to his view, that there are twice as many taxicabs as are necessary.

The Kaiser's Privilege.

The centre arch of the famous Brandenburger Tor, between the Unter den Linden and the Tiergarten—formerly used only by the Kaiser—has been opened to all traffic. Since the establishment of the republic the gate has remained unused because no convenient way could be found of using the odd middle one of the five arches. An increase in west-bound traffic is the reason for the innovation.

FOR THE
NEXT WAR?

A Jowett specially constructed to carry a range-finder and a Lewis gun. (Right) Negotiating a stiff gradient, and (above) the car being transported by the gun crew of eight men, who carried it easily.

A War-like Jowett.

Viscount Lascelles, after a recent visit to Jowett Cars., Ltd., Idle, Bradford, witnessed a demonstration of a Jowett car which has been specially designed for the transport of a Lewis gun and range-finder over rough ground in Army manoeuvres. The demonstration was given on the ground adjoining the works, and almost every conceivable difficulty to the normal progress of the car was arranged. The sturdy Jowett, with its crew of four mechanics, successfully negotiated steep gradients, ditches thick with mud and stones, and tracks which sucked down the wheels almost to their axles, while Col. A. J. Hunter, D.S.O., M.C., handled the Lewis gun mounted at the rear. Later it was shown how easily the car could be carried by means of bars placed under the chassis members.

Our Front Cover.

The car which figures in our front-cover photograph is a Newton-Ceirano four-seater.

Danger!

The Epping road between the Wake Arms and Epping town is "up" in several places for extensive resurfacing and kerbing. By day traffic on the sections is controlled adequately by constables, but at night there appears to be no control working; furthermore, the red warning lights are very badly placed and careful driving is necessary if the various obstructions and variations in road level are to be safely avoided.

No Charge.

Despite the petition made by certain authorities, the Kingston Council has refused to make a charge to motorists who park their cars in the market-place, in front of and around the Town Hall.

Tyre Origin.

A report on the question as to whether imported rubber tyres and tubes should be required to bear an indication of their country of origin will shortly be made by the Standing Committee appointed by the Board of Trade. The report will shortly be obtainable from the Stationery Office.

Great West Road Control?

On Saturday last the police were making accurate measurements at the western (Staines) end of the Great West Road, London. *Verb. sap.*

Milan-Vienna Trial.

An international competition under the name of the Coupe des Alpes is to be held next year from August 12th to 17th. The route and regulations are not yet finally decided, but it is certain that it will start at Milan and finish at Vienna.

THE NEW KELVIN HALL.

(Left) A glimpse of the interior. Note the large floor area and the ventilating appliances on the central stanchions. (Above) A new photo of the main frontage.

A New Alloy.

A well-known French metallurgist has recently been experimenting with a new alloy known as Alpac, a combination of aluminium and silica. A light car frame has been cast in a single piece of the new alloy and weighs 354 lb.

Superchargers for All.

Supercharging, one of the direct developments of racing, is being so seriously considered for ordinary touring purposes that one concern, the British Anzani Engineering Co., Ltd., is prepared to fit a Cozette supercharger to any make of car. The Cozette is practically dead silent, and its fitting does not entail very radical alterations to the power unit. The British Anzani Engineering Co., Ltd., have recently moved to new premises at London Road, Kingston-on-Thames.

Commercial Motor Exhibition.

The International Motor Transport Exhibition will be held at Olympia from November 17th to 26th, and will include 106 exhibits of vehicles and bodywork, 223 exhibits of accessories and components and 36 garage equipment exhibits. The Exhibition will be open every day from 10 a.m. to 9 p.m., the price of admission being 2s. on any day from Thursday, November 17th, to Friday, November 25th, except November 19th. On that day and November 26th the charge is 1s.

Michelin Tyre Price Reduction.

A 15 per cent. reduction in the prices of all Michelin car tyres, as from November 7th, is announced by Michelin Tyre Co., Ltd. Tyres for heavy vehicles are subject to a reduction of 5 per cent.

Civil Service Motoring Association Dinner.

Over 162 members and friends were present at the annual dinner and prize distribution of the Civil Service Motoring Association held at the Holborn Restaurant on Friday, November 4th. J. R. Brooke, Esq., C.B., the president of the Association, being in the chair. Prof. A. M. Low proposed the toast of "The Association" in a speech which was a delightful blend of the humorous and serious, in which he recalled his early experience with a steam motorcycle, the chief feature of which was the boiler—placed immediately underneath the saddle. His deft references to the complications caused by this method of design aroused roars of laughter.

Among those present were Major H. O. D. Segrave and Flight-Lieut. S. N. Webster, this being the first occasion on which these two celebrities have been brought together in public. The dinner was followed by an excellent entertainment provided by the Roosters' Concert Party and Miss Rita Barnaby; in addition, a film of motoring and motorcycle interest was shown.

Austin's Big Mileage.

The Austin Motor Co., Ltd., ask us to point out that in their advertisement on the back cover of last week's issue a mileage of 27,000 in 13 weeks was mentioned. This should have read 13 months.

Rubber from Petroleum.

Russian chemists at Leningrad are experimenting with a new method of producing artificial rubber from petroleum waste, and it seems likely that the process will shortly be placed on a commercial scale.



WEAR A
FLANDERS POPPY

THERE is one reason, seldom fully appreciated, why competitions in this country are falling into decay. We all know that the withdrawal of trade entries was a big blow, but it was not clearly evident why amateurs did not jump into the breach and take advantage of a position which they had so often said they desired. They found, however, that the majority of the clubs they were willing to support were affiliated to the R.A.C. and that they were called upon to pay full subscription despite the fact that they wished to become members only for competition reasons.

Already one or two local clubs have come to an arrangement with the R.A.C. whereby affiliated and non-affiliated membership is offered, the latter, of course, benefiting the member by a reduction in subscription equal to the capitation fee, and it seems likely that other prominent clubs—the J.C.C., for instance—will follow suit. After all, a man resents paying for “get-you-home schemes,” and so on, twice over; but, if in addition to his “home” club, he could join half-a-dozen clubs as a “competition member” and at a purely nominal fee, there would be a big increase in competition entries.

At last the claims of exponents of pure concrete as a road surface are to be put to the test in a part of the world where literally millions of motorists can judge them for themselves. We refer, of course, to the Kingston by-pass. With the coming rigours of an English winter and the carrying of a large volume of traffic to face, every opportunity will be provided for the concrete surface of the by-pass to prove its worth. Much depends on the behaviour of the road during the next six months. If it comes up to expectation—and we think it will—it will probably mark the beginning of a new era in concrete roads.

Scotsmen are showing keen appreciation of the 1928 light cars which are on view at Kelvin Hall

—the exhibition closes to-morrow, by the way—and the result of the Show will be reflected in much more useful orders than have hitherto been received by English makers. The sports-type saloons, and the little “sevens” and “nines,” like the Austin and Triumph, Standard and Clyno, have in particular impressed knowledgeable Scottish motorists.

British inventions, it is good to note, continue more than to hold their own in the markets of the world. The Leveroll sliding seat, for instance, is gaining steadily in popularity in America and orders are being received from all quarters of the globe. This ingenious idea makes all the difference, in the case of some cars, between comfort and discomfort in the ordinary use of the vehicle, and might well be a standard fitting.

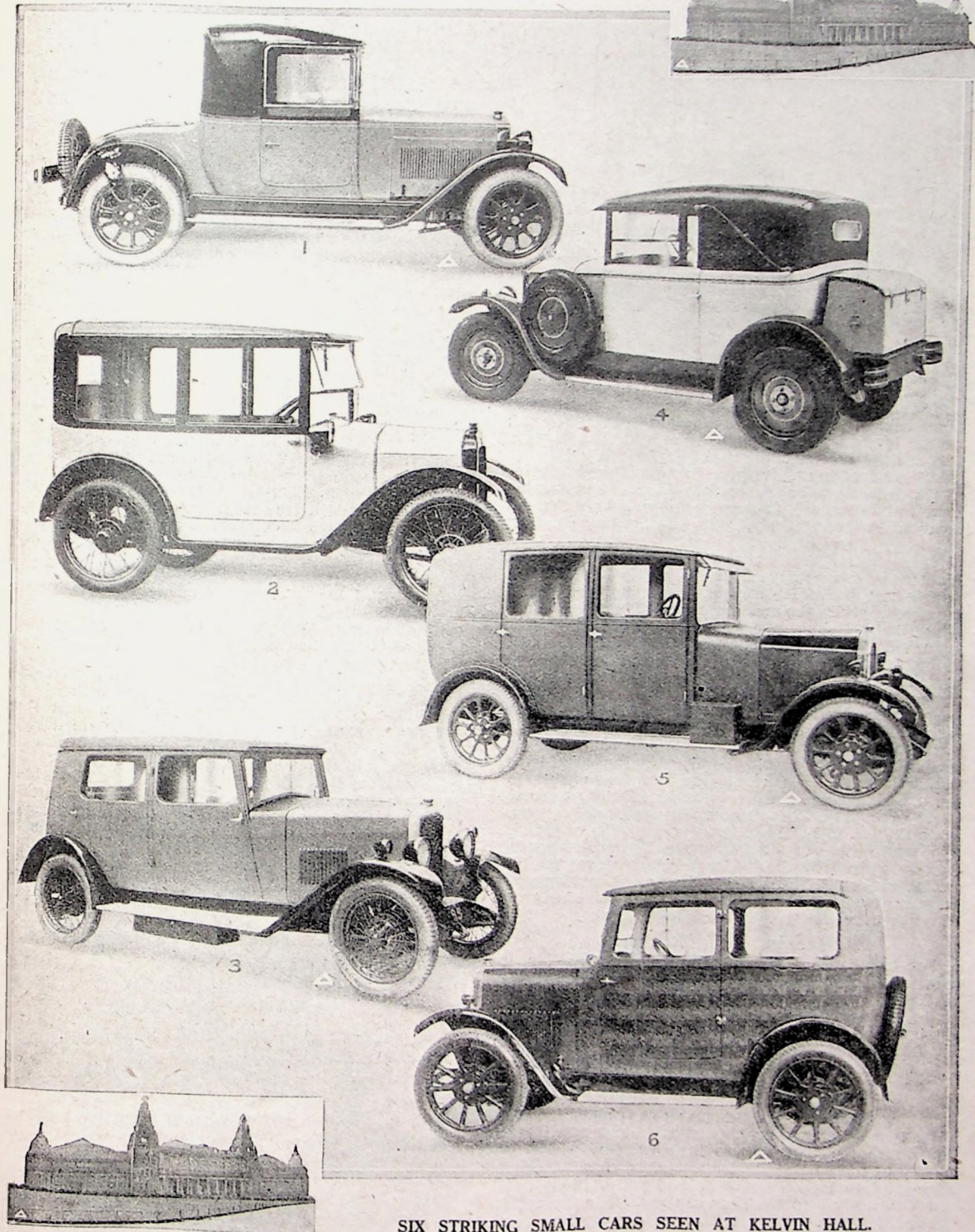
The, at the moment, somewhat problematical position of six-cylinder light cars—there are a mere handful on the market at present—is causing considerable interest and readers are referred to an illuminating article on the subject which appears in this issue. In addition to the list of six-cylinder light cars given in the article to which we refer, there may be another in the comparatively near future. It will emanate—if it materializes—from a very well-known factory, but it may be kept “hush-hush” until the next Motor Show. Anyway, recent developments show that English light car makers are regarding the “six” very favourably, and they are a pretty shrewd lot!

The idea of road racing in private grounds in this country is engaging the attention of sporting enthusiasts, and already there are rumours that a Grand Prix run under real road conditions will take place next year. This is good news and the sooner the whole thing is fixed up the better, so as to give intending entrants time to get ready. It is a long and tedious job preparing, say, a team of three cars for a race of this sort.

It is probable that the Alexandra Palace will see the first of the series—as we announced some weeks ago—in which case it is doubtful whether the course will warrant the entry of pukka Grand

Prix-type cars; but it will be an excellent beginning and will, we hope, reveal the value of such tests in a new light. Public-road racing is still a long way off!

ALL-WEATHER CARS FOR SCOTSMEN.



SIX STRIKING SMALL CARS SEEN AT KELVIN HALL.

(1) A coupe in 9 h.p. form, the £225 Fiat. (2) A 7 h.p. saloon, the £150 Austin. (3) The 9 h.p. Riley as a £285 sports saloon. (4) The 7 h.p. Peugeot with very attractive body. (5) A handsome fabric saloon, the £285 9-20 h.p. Humber. (6) An 8 h.p. saloon, the £187 10s. Triumph.

THE motorcar industry has always held very much aloof from the motorcycle trade, and has, indeed, considered that it produces much more advanced and much more efficient engines, but a tour of Olympia last week, when the Motor Cycle Show was in progress, rather implied that it might be argued that in some respects the reverse is the case.

The present-day motorcycle, in spite of the low price at which it has to be sold and the limits of space which have to be observed, possesses an engine which, on the score of sheer efficiency, is in advance, capacity for capacity, of car engines.

There were, for example, at Olympia 175 c.c. machines, costing only about £28, ready for the road, which had two-stroke engines developing 6 b.h.p. and capable of giving the machine a speed of some 45 m.p.h. These baby engines are, of course, of the two-stroke type. In a high-efficiency form they have cast-iron cylinder barrels, twin-exhaust ports and a detachable aluminium cylinder-head and will give a machine 50 m.p.h.

In the next class there are 250 c.c. side-valve four-stroke engines giving 8 b.h.p., and thereafter in order come 250 c.c. o.h.v. units developing 10 b.h.p., 350 c.c. s.v. and o.h.v. types giving 10 b.h.p. and up to 20 b.h.p. respectively and 500 c.c. singles giving in s.v. form 16 b.h.p. and 25 b.h.p. in o.h.v. form. In addition, of course, there are twin-cylinder motorcycle engines of all sizes from 250 c.c. to 1,000 c.c., some being of the two-stroke type and others of the four-stroke V-type. Amazing power is given by the larger V-twin engines; the 996 J.A.P. air-cooled o.h.v. unit as supplied in its sports form to a number of motorcycle manufacturers develops over 45 b.h.p.

Craze for High Efficiency.

For some reason which it is difficult to explain, in view of the fact that motorcycles are taxed at the rate of 30s. per annum for machines weighing under 200 lb. and £3 per annum for all others, motorcyclists have a distinct preference for small high-speed high-efficiency engines rather than bigger units not specially tuned and working always well within their capabilities.

The popularity of all kinds of motorcycle sport is doubtless the reason for this concentration upon small highly efficient engines, and it has produced a very large number of extremely good small high-speed units. For touring purposes these little engines, which are mostly of the single-cylinder type, have a compression ratio of 6 to 1 or thereabouts and pull a top gear of approximately 5 to 1. They can rev. up to five or six thousand r.p.m. and yet possess a fair degree of flexibility.

Overhead valves continue to gain favour in motorcycle practice, and in several cases they are operated by an overhead camshaft driven either by bevel gearing or a roller chain.

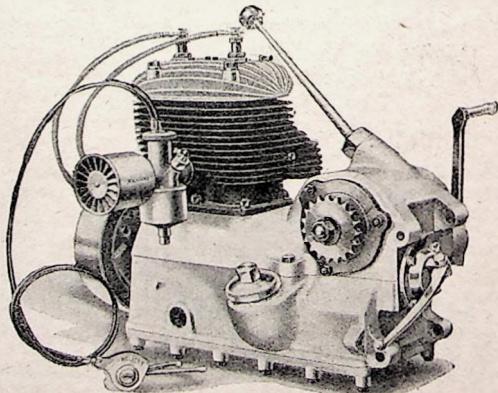
In motorcycle practice it is common to-day for even 350 c.c. single-cylinder engines to be provided with two exhaust ports each of 1½-in. internal diameter, but the belief is widely held that the object is more to give a symmetrical appearance and efficient silencing than to improve the performance. Single inlet ports are the rule on present-day motorcycles, and the impression was gained at Olympia last week that if greater attention were paid to induction problems and less to getting away the exhaust gases more efficient engines might result.

It is noteworthy amongst the 1928 motorcycle engines that there are very few indeed which have a lubricating system which the average car designer would regard as anything but amazingly crude. Designers of motorcycle engines still believe that the correct way to lubricate them is merely to feed oil, at a rate controlled by the rider, into the crankcase and to hope that he will be clever enough always to ensure that the feed rate is adequate without being wasteful.

Air-cooled "Fours."

An advance has been made, however, of recent years in that the oil is fed into the crankcase by a pump driven from the engine, an auxiliary hand pump being provided in many cases. Lubrication systems embodying arrangements whereby all the oil carried on the machine is kept perpetually in circulation are confined largely to four-cylinder machines, of which there were three examples at Olympia; two of them come from America and are of the in-line type, the third being a recent British production of the twin-V pattern employing a four-throw two-bearing crankshaft.

This engine is considered in the motorcycle world as representing the most advanced design, and many believe it to foreshadow the four-cylinder motorcycle of the future. But, as with the eight-cylinder twin-four and 12-cylinder twin-six car and aero engines which have made their appearance from time to time,

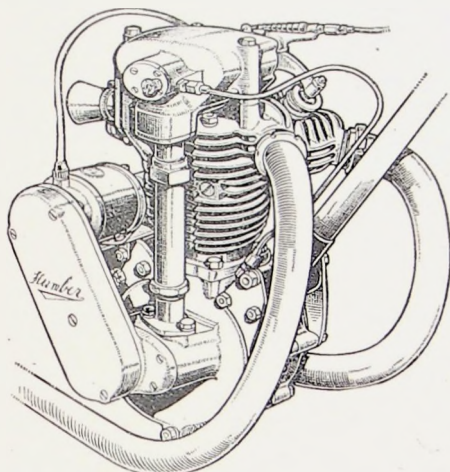


The Villiers 350 c.c. two-cylinder engine-gearbox unit which is now in production. The design is extremely compact.

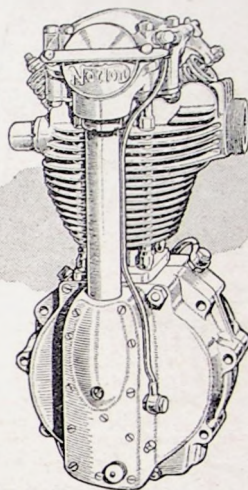
accessibility and induction and exhaust layouts are problems which entail many sleepless nights for the designer.

Another type of engine to which motorcycle enthusiasts look as being likely to provide them with sweet running comparable to that of a car engine is the side-by-side twin two-stroke. At Olympia last week four such engines were to be seen, one—the ever-popular

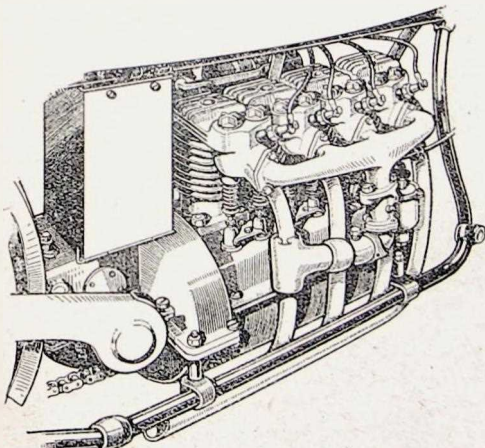
There is a slowly growing tendency for motorcycle engines and gearboxes to be built together as a unit, but British designers are not so progressive in this respect as are those of France, Belgium, Italy and Germany. In consequence nearly every British motorcycle has a two-stage chain drive which, to an eye trained to car practice, looks very clumsy and unsatisfactory in every way.



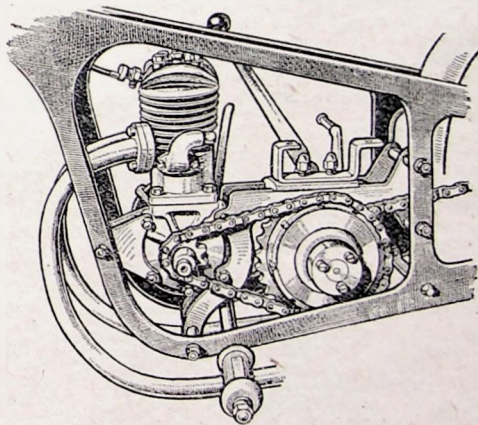
A 350 c.c. Humber overhead-camshaft two-port sports engine. It was one of the most advanced designs at the Motor Cycle Show.



Winner of the Senior T.T. and countless road races, this 500 c.c. Norton engine is in production for the 1928 season.



A four-cylinder motorcycle engine which has stood the test of time—the 1,301 c.c. Henderson, as used extensively by the American speed cops.



A 175 c.c. Villiers engine mounted in the only pressed-steel frame at the Motor Cycle Show. This workmanlike design was very well received.

Scott—being water-cooled and the other three air-cooled. The Trojan type of two-stroke engine employing pairs of cylinders with common combustion heads does not find favour amongst motorcycle designers, in spite of the advantages which it affords.

Motorcycles continue to employ chain transmission to the exclusion of any other type. The belt is now a thing of the past and shaft drive is employed in only one machine—a German make which was not exhibited at Olympia.

Questions of motorcycle frame, steering and suspension design are of little interest to car folk. It may be noted, however, that friction dampers are extensively employed both for damping the action of the front forks and for eliminating steering wobble. Rear springing for motorcycles makes no headway and at Olympia was the monopoly of a single exhibitor.

Motorcycle brakes to-day closely follow car standards, the internal-expanding type being almost universal, whilst a brake on the front wheel is the rule.

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EXPLAINED.

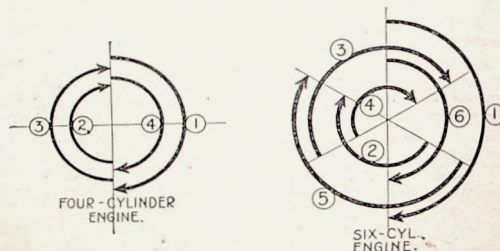
A 20-60 h.p. 2,762 c.c. 6-cylinder Vauxhall engine in part section. The arrangement of the various components can be clearly seen.

FOR the past three years each recurring Olympia Show has been notable for the number of new six-cylinder chassis exhibited, most of them having engines of from 2-litres to 3-litres capacity. So marked has been this increase in the number of "sixes," that the proportion of cars now available on the British market with six-cylinder engines is 42 per cent., as compared with 30 per cent. at the Show of 1924, and this ground has been gained almost entirely at the expense of the four-cylinder type of car.

These being the facts of the case, it is only natural that light car owners should wonder whether a similar development is to be expected in cars falling within the 1½-litre limit, and whether the advantages of the "six" are equally prominent for power units of small total capacity. It is with the aim of answering these questions that this article has been written, but before discussing them it is necessary briefly to survey the principal points of difference which exist between a "four" and a "six," and the special advantages of the latter type which account for its remarkable increase in popularity.

The features of a good six-cylinder engine which are most noticeable to a driver who has been used to handling four-cylinder cars are the smoothness with which it develops its power, the flexibility of its performance, and the fact that it does not make its presence felt by vibration at any speed throughout its working range. The smooth torque and flexibility of

the "six" obviously result from the larger number of cylinders employed as compared with a "four," because the greater the number of working strokes which can be crowded into one revolution of the crankshaft, the smoother will be the turning effect of the flywheel.



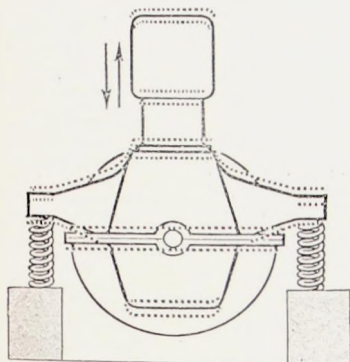
The semi circular arrows in these diagrams represent the firing strokes of a "four" and a "six" respectively. It will be seen that they overlap in the "six," but not in the "four."

To use an analogy which explains this matter, we may liken a two-cylinder engine to a man driving a pedal cycle by thrusts on the pedals with alternate feet; these thrusts corresponding to the two explosions given by a two-cylinder engine in every working cycle. A four-cylinder engine of the same capacity gives an effect similar to a tandem cycle with two riders of smaller stature; the individual impulses are not so heavy as in the former case, but there are more of them, so that a smoother effect is obtained. To find a similar analogy for the "six," the reader must imagine a super-cycle ridden, say, by three children, the impulses imparted by the pedals being smaller still, but the aggregate power being the same. The analogy must not be carried too far, because, in the cycles, the pedals are all in phase, whereas in the engines the cranks are spaced out to give a proper distribution to the impulses.

The driving force applied to the rear wheels of these cycles is the same in each case, but it becomes more even as the number of riders increases, although each impulse may be smaller. (See explanation in text.)

THE CYCLE ANALOGY.

The smooth output of the six-cylinder type of engine permits the car to be driven at lower speeds on top gear without transmission snatch, and results in a lighter load being imposed upon the gearbox and final drive. Consequently, these parts can be made smaller and lighter than the corresponding components of a four-cylinder car, other things being equal, or, alternatively, a six-cylinder engine with a power output as



A single-cylinder engine, if mounted on springs, would vibrate up and down when running owing to the unbalanced forces.

much as 15 per cent. greater can successfully be built into an existing chassis in place of a four-cylinder engine.

We now come to the vibrationless running of a six-cylinder engine, which is a very important point, demanding a clear explanation. The essence of the matter is that in reciprocating engines the pistons constitute a disturbing element, because in the course of each stroke they have to be accelerated from rest to a high speed and must then be slowed again to a standstill. It may seem absurd that when an engine is turning over at a very high speed the pistons should actually come to a standstill twice in every crankshaft revolution, but that they must do so is proved by the fact that their direction of motion is reversed.

Now, to accelerate or retard any rapidly moving weight, such as the piston of an engine, demands the application of considerable force, this force being actually proportional to the weight and to the square of the speed; consequently, although an aluminium piston in a small-bore engine is a very light unit, it has to run at such a high speed that the forces required to start it and to stop it may be very considerable.

Opposed Forces.

In a single-cylinder engine the piston must be pulled downwards by the connecting rod to start it on its stroke, and this implies the presence of an equal and opposite force tending to pull the crankshaft upwards; towards the end of the stroke the piston, which is trying to carry on at unabated speed, must be retarded by the connecting rod, and this results in a downward thrust on the crankshaft.

Both pull and thrust are conveyed to the main bearings, so that if this single-cylinder engine were mounted on springs it would vibrate up and down in opposition to the movement of the piston. In the case of an engine with fixed supports this up and down movement is no longer possible, but the tendency is still there and is liable to produce vibrations at certain speeds.

If we apply this reasoning to a four-cylinder engine it would at first appear that the forces set up by the pistons should cancel one another, for the reason that the pistons are paired and moved in opposition. Unfortunately, however, the motion of a piston coupled by a connecting-rod to a crankshaft turning at a uniform speed is not a simple harmonic; in actual fact, the piston attains its maximum speed before reaching the half-stroke position, from which it follows that its acceleration at the beginning of the stroke is more violent than its retardation towards the completion of the

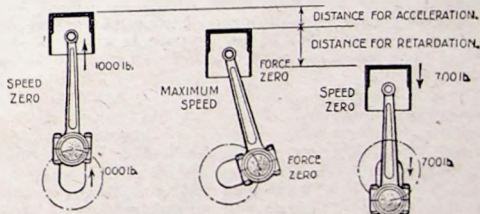
stroke. Thus, in an engine of average dimensions running at maximum speed, it may require a force of 1,000 lb. to start a piston moving downwards, whereas the force involved in stopping it at the bottom dead centre may amount to only 700 lb.

Consequently, in a four-cylinder engine the pull exerted by the two pistons which are at top dead centre will be 2,000 lb., to counterbalance which there is only a downward push of 1,400 lb. exerted by the other pair of pistons. There is, therefore, a resultant force of 600 lb. tending to cause vibration. This applies at each of the dead centres and, when the pistons are all at half-stroke, investigation shows that an out-of-balance force of equal amount but reversed direction is in action. As a result, the engine tries to vibrate up and down at a rate equal to twice the crankshaft speed.

Overlapping Strokes.

In a six-cylinder engine the crankshaft is arranged in the manner shown by one of the sketches overleaf, from which it will be seen that, numbering the cranks from 1 to 6 in sequence, the following cranks are paired:—1 and 6, 2 and 5, 3 and 4. These pairs are set at an angle of 120 degrees to one another, an arrangement which gives three equally spaced and overlapping firing strokes per revolution, the firing order being 1, 5, 3, 6, 2, 4. Equally important, however, is the fact that, with this disposition of the cranks, the forces set up by the movement of the pistons are in almost perfect balance; that is to say, they cancel one another completely for all practical purposes. Hence the disturbing forces tending to produce vibration in a four-cylinder engine are not present when six cylinders are employed.

In passing, it may be worth mentioning that, as ordinarily constructed, the balance of a straight-eight engine is no better than that of the six-cylinder type, while in certain forms the balance of the straight-eight is actually worse than that of the six. While on the subject of vibration it is also worth mentioning a trouble which has been a great source of worry to designers of six-cylinder engines, namely, the tendency of



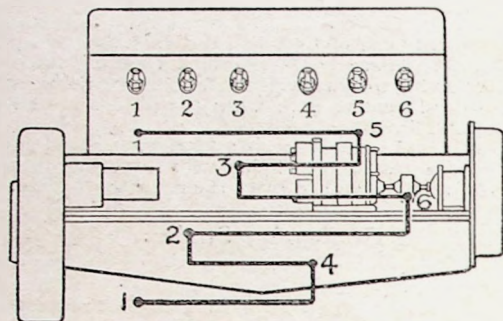
These diagrams show the forces set up by the acceleration and retardation of a piston. The speeds stated are those of the piston at various instants.

the crankshaft to wind and then spring back under the intermittent loads on the crankpins produced by the explosions. This becomes evident at certain speeds in some engines in the form of rough running, and that it is primarily due to the spring of the lengthy loaded crankshaft can be proved by driving the engine at the same critical speed with an electric motor, when it is found that the roughness disappears.

Special torsional vibration dampers are usually fitted to the crankshafts of large engines to meet this trouble, but modern six-cylinder units of 2 litres to 2½ litres capacity do not seem to require this adjunct, as the crankshaft is of more reasonable length and can be made stiff enough to put the vibrational period at a speed beyond the running range of the engine. Consequently, it may be inferred that in engines of still smaller capacity this trouble is not likely to be experienced.

Another point is the number of crankshaft bearings employed, and while a large number has the advantage

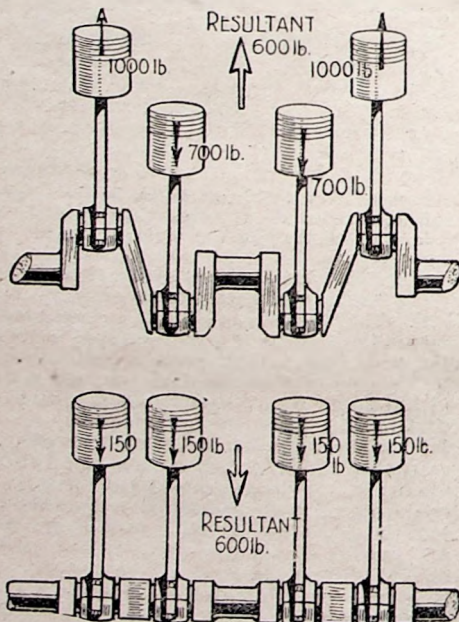
of reducing the unsupported length of the shaft to a minimum, it causes an undesirable increase in the length of the engine. Seven, four, or three bearings can be used, the number of crank throws between each adjacent pair then being one, two and three respectively. In some cases a different number of bearings



The firing order of a six-cylinder engine can easily be followed by reference to this diagram.

is specified in the description of an engine, such as five or eight, but this simply means that one of the bearings is divided into two parts to accommodate a thrust collar or a gearwheel. Thus, in the A.C. the rearmost bearing is divided, one half being placed at each side of the drive to the overhead camshaft. It would seem that four bearings suffice for any six-cylinder engine of less than 2½ litres capacity, while three-bearing designs may well become used for 1½-litre "sixes." In many ways, however, the four-bearing design is preferable.

While the drive to the camshaft and auxiliaries is often arranged at the front end of the engine, as in four-cylinder units, many manufacturers favour the placing of this drive at the rear end in the case of a "six." This is due to an appreciation of the fact that the whip of the crankshaft is apt to cause speed fluctuations at the front end—resulting in some timing gear noise and wear—which are not present at the rear end. Here it seems opportune to mention that in the case of a six-cylinder engine the orthodox two-spark type of magneto must be run at one-and-a-half times crank-



These diagrams of a four-cylinder crankshaft in two positions show clearly the inertia forces which are set up at half stroke and at the dead centres.

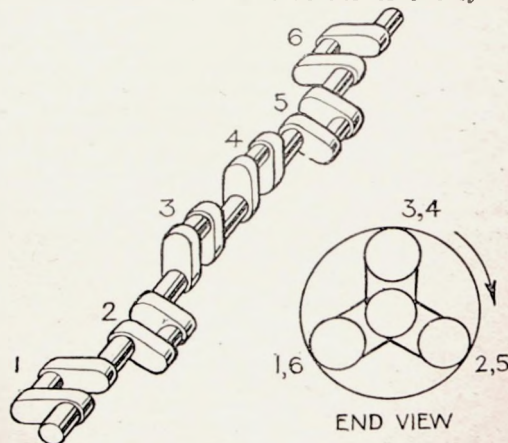
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shaft speed—a 50 per cent. higher rate of rotation than that required in a four-cylinder engine. Partly for this reason many of the new six-cylinder cars are fitted with coil-and-battery ignition.

A difficulty which every designer of a six-cylinder engine has to overcome, whatever the capacity of the cylinders may be, is the equable distribution of the mixture, and readers would obtain a good idea of just how serious this difficulty is were they able to examine the dozens of experimental discarded inlet manifolds which are to be found on the scrap-heap of any factory which has undertaken the production of a new "six." It is not only a matter of delivering the same weight of mixture to each cylinder, but it is equally important that the quality of the mixture should be the same in each case.

We use the term "mixture" advisedly, because no ordinary carburetter is capable of producing a gas; it simply charges the air with a mist of finely divided petrol particles. These particles are carried along in suspension at a high velocity, and any eddy which disturbs the even flow of the mixture is likely to cause rich and weak patches which affect the quality of the charge eventually received by the various cylinders.

If the manifold is such that one or two cylinders



The cranks in a six-cylinder engine are arranged in pairs at an angle of 120 degrees. Even power impulses are thus assured.

receive a mixture weaker than that delivered to the rest, then the carburetter must be given a rich setting to prevent these cylinders from missing, and as a result considerable petrol is wasted. This factor probably has a more potent effect upon petrol consumption than matters of friction and thermal efficiency, to which the fact that a "six" consumes more petrol than a four is often attributed.

This brings us to the fact that, for a given total capacity, the use of six cylinders in place of four results in a considerable reduction in bore and stroke, and the effects of this reduction are far reaching. To begin with, other things being equal, the Treasury tax is higher on a six-cylinder engine, because it is calculated on a formula which takes into account solely the number of cylinders and the square of the bore.

Of course, it is possible to reduce this tax by increasing the stroke and reducing the bore still further, but designers cannot do much in this direction as, from many points of view, it is desirable to keep the stroke-bore ratio as low as possible. Two of the new six-cylinder light cars show very clearly the effect of stroke-bore ratio upon taxation, these being the Donnet and the Renault. The Donnet has a bore and stroke of 63 mm. and 70 mm., a capacity of 1,309 c.c., and a rating of 14.9 h.p., whereas for the Renault the same particulars are as follow: 58 mm. and 93 mm., 1,474 c.c., and 12.5 h.p.

(To be concluded.)

The Home of Guy Fawkes

November 5th is always a popular date and was celebrated as enthusiastically as ever this year. In this article many interesting facts of Guy Fawkes' home are given, together with some details of his life.



- Scotton Old Hall -

JUST off the main road from Harrogate to Ripon lies the village of Scotton, which has very interesting associations at this time of the year; it was once the home of Guy Fawkes, the central figure in the Gunpowder Plot and of a number of other plotters who set themselves the task of blowing up the Houses of Parliament and whose defeat is celebrated in the time-honoured manner after 320 years.

Ripley, which lies on the Harrogate-Ripon road, some three miles from the former, was the home of Sir William Ingilby, whose two nephews, Thomas Winter and Robert Winter, were concerned in the plotting. If we leave Ripley by the Knaresborough road, cross the level crossing at Nidd Bridge station, and follow the road to the left where the signpost points to Scotton, we find the home of Fawkes a couple of fields away from the village.

A Subterranean Passage.

Half-way down the village, its garden adjoining the little graveyard, is Scotton Manor House, where Thomas Percy, a leading conspirator, resided. Percy came of the same family as the Earl of Northumberland, whose name is written boldly in North Country history. From Scotton Manor to Scotton Old Hall, the home of Guy Fawkes, a subterranean passage ran and some traces of this were found near the Manor during a recent renovation.

Guy Fawkes was a native of York, and a pleasant half-day could be spent in running over the roads between the places associated with this notable character. It is said that he was born in a cottage behind what is now 24, Petergate. He was certainly baptized in St. Michael le Belfry Church against the south-west tower of York Minster, and the baptismal entry of Guy or Guido Fawkes is entered in the parish register for

April 16th, 1570. Fawkes came from a family with close associations with the Protestant faith, although he died in supporting the Catholic religion. His grandfather, William Fawkes, was registrar to the Exchequer Court of York diocese, and Guy was the only son of Edward Fawkes, a notary of Church Courts and advocate of the Consistory Court of the Archbishop.

Fawkes' Early Life.

At his father's death Guy was barely nine years of age, and some time afterwards his mother married Dionis Bainbridge, a member of a Catholic family, of the Old Hall, Scotton, and this was how the youth became a Catholic. He lived 11 years at Scotton, and there came into touch with several notable Papist families.

It is a pleasant run from York up the road towards Boroughbridge, across to the Great North Road from Green Hammerton and then by way of Ferrensby and Farnham to Scotton. It was Farnham Parish Church that Guy Fawkes was compelled to attend every Sunday under a penalty of £20 per month, but whether he did so or not is not known. At all events, his two sisters were married there, and the parish registers contain records of these events. His mother was living at Scotton within a year of the failure of the great conspiracy.

Fawkes' old home is a picturesque farmhouse, situated on sloping ground. It contains a good deal of old oak, and has a spacious fireplace round which we can imagine there gathered in those far-away times a company of earnest men who felt that their grievances were growing unbearable.

The Manor House has a number of interesting features. Much of the old oak panelling has, unfortunately, disappeared, but one room is panelled throughout. The older portions of the building are set round the trunk and branches of an oak tree, said to be 900 years old. Limbs of the tree take the place of the ordinary beams. The ceiling of the ground-floor room bears coloured representations of animals and some armorial bearings, and it is stated that the entrance to the subterranean passage to the Old Hall commenced near a corner of the building away from the road.

Scotton and Farnham were well away from the frequented highways in the olden days of the conspirators, and one can well imagine that old customs and habits died slowly in these quiet villages. To-day the great streams of traffic miss these places, but the district hereabouts is worth exploring.

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FARNHAM
CHURCH.

Guy Fawkes was bound to attend this church, the penalty for absence being £20 per month; whether or not he attended is not known.



A BROOKLANDS "BIJOU" MEETING.

VERY SUCCESSFUL CHARITY
EVENT CLOSES THE 1927
SEASON AT THE WEYBRIDGE
TRACK.



THE FORTUNATE FIVE.—"Close-ups" of last Saturday's winners. (1) H. W. Purdy (Thomas-Special), (2) G. E. T. Eyston (Bugatti), (3) Capt. A. G. Frazer Nash (Frazer-Nash), (4) Capt. Malcolm Campbell (Bugatti), (5) "J. Taylor" (Talbot).

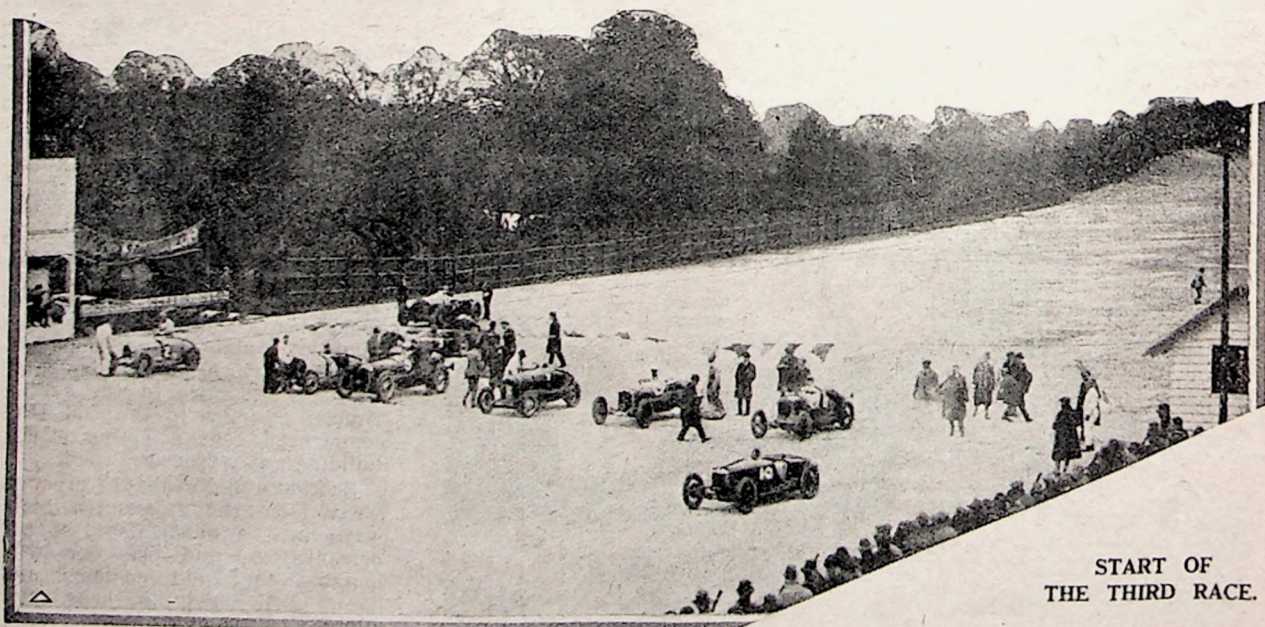
THE 1927 Brooklands season was brought to a fitting conclusion on Saturday last by a Charity Meeting, which might be described as being of the bijou order. There were only five races, and so energetic were the officials that a little after half-past three the racing was over, and there was an

adjournment to a private sanetum in the Grand Stand, where the fine array of cups were presented to the winners. The starting and finishing line was at the fork.

The meeting had been organized in aid of the Weybridge Cottage Hospital and Earl Haig's British Legion

Appeal Fund, the entry fees, amounting to £104, going to the former, what profits that accrued from the meeting being handed over to the latter.

The donors of the various cups were Autocars, Ltd., the Dunlop Rubber Co., Ltd., the Robin Hood Engineering Works, Ltd., C. C. Wakefield and Co.,



START OF
THE THIRD RACE.

The Lightning Long Handicap (8½ miles) was won by Capt. A. G. F. Nash. He is waiting to be sent off in pursuit of his "next-door neighbour," Duller (Riley), who is just accelerating away and is seen on the right. Duller was second, with Campbell (Bugatti, second from left) a close third.

Ltd., Mrs. Malcolm Campbell, Mrs. George Duller, Mrs. G. E. T. Eyston, Mrs. Gayford, Mrs. E. R. C. Scholefield, Mrs. W. Scott, Mrs. R. Warde, Flt.-Lieut. E. R. C. Scholefield and Messrs. J. D. Barclay, G. E. Tottey and H. Wright, whilst one of the finest cups of all for the fastest lap speed attained during the meeting was presented by Capt. Woolf Barnato. This was won by J. R. Cobb.

A little before 2 p.m. the starters for the 100 m.p.h. Short Handicap (two laps) lined up at the fork with Scott (Bugatti), George Duller (Riley) and Oats (O.M.) on the limit line with 37 seconds start over G. E. T. Eyston (Bugatti), scratch. The remaining starters were J. R. Cobb (Vauxhall), M. Campbell (Bugatti), Staniland

outstripped Duller and Scott, although the former was pressing him hard.

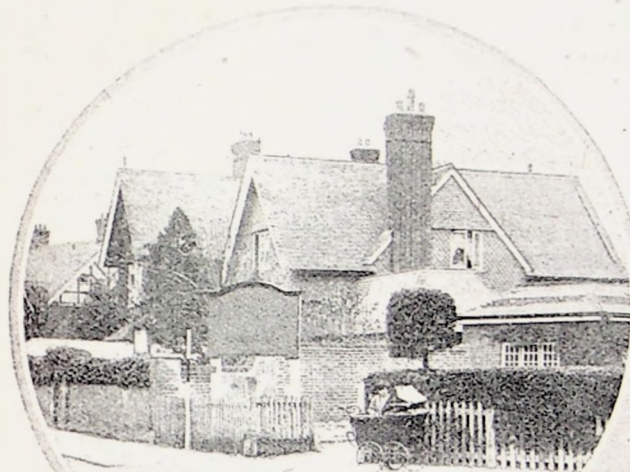
It was not until Eyston shot out from behind the Members' Hill on the concluding lap that the spectators jumped to the idea that he might have a chance. Down the railway straight his progress was, metaphorically speaking, meteoric, for he was some 20 miles an hour faster than the bunch of back-markers which was travelling at anything between 95 m.p.h. and 105 m.p.h.—a comparison which will give the reader some idea of the way Eyston flashed through the field. When, viewed from the Fork Grand-stand, his car was obscured by the Vickers Sheds, Nash and Duller were already half-way round the banking; and when Eyston once more shot into view he was only ten feet or so from the edge of the saucer, and streaking round in one glorious rush.

Seldom was a race more in doubt-for, travelling with incredible swiftness, Eyston had practically overhauled the

to Taylor's Talbot, and again provided a thrilling spectacle, for Taylor started from scratch and worked his way right through the field. Benjafield's Salmson was 100 yards behind as the winner crossed the line, with Thompson's H.N.T., driven by Stedall, 50 yards to the rear. Winner's speed 97.17 m.p.h.

In the Lightning Long Handicap (3 laps) Capt. A. Frazer Nash secured a popular victory after a very hard-fought tussle with Duller's Riley. For two complete laps Duller's wonderful little car—in which the driver sits so low that one can see only the top of his head—led Nash by about 50 yards, but on the final lap Nash "whipped up his horses" and passed Duller about three parts of the way round the Byfleet banking. Campbell managed to overhaul Dunfee's Ballot, thus gaining third place. The winner's speed was 98.04 m.p.h.

The 100 m.p.h. Long Handicap (3 laps) went to H. W. Purdy, one of the cheeriest of Brooklands amateurs, if one may so describe him after his very extensive experience. His Thomas-Special started 21 seconds in front of Eyston's Bugatti, the latter owing 5 seconds as the result of his brilliant work in the first race. Eyston was second—the rehandicapping was just too much for him—whilst Benjafield's Salmson was no more than a half length behind him. Speed 107.18 m.p.h.



(Circle) Weybridge Cottage Hospital, which benefited to the extent of £104 as the result of the meeting. (Right) Why fork meetings are popular. Admission prices are low and spectators can park their cars quite close to the starting and finishing line.

(Bugatti), Taylor (Talbot) and Capt. A. Frazer Nash (Frazer-Nash).

This race surely ranks as one of the finest that has even been seen at Brooklands, and would have given Nat Gould the subject matter for a thrilling chapter in a motoring novel had he devoted as much attention to track racing as he did to the turf.

On the fall of the flag Duller led the limit men, Scott seeming to have difficulty in getting into his stride. Taylor's 200-Mile Race Talbot showed good acceleration. When Eyston got off the mark it appeared that he was hopelessly handicapped, and at the end of one complete lap Frazer Nash's chances of success looked very rosy. He had

readers within less than a quarter of a mile of the end of the banking, but obviously could not get through safely above them. It looked as though he would have to hang back for several hundreds of vital yards; then, however, with consummate skill and daring he delivered the coupe de grace by swooping down so that he was left a clear field on the inside. It was a bold stroke, but undoubtedly gave him the race, for in a final terrific burst of acceleration he crossed the finishing line at the fork just one length ahead of Nash, hard upon whose heels came Duller. Speed 109.9 m.p.h.

The second race of the day, the 90 m.p.h. Short Handicap (two laps) went

The final race, the Lightning Short Handicap (2 laps), was as exciting as the first race of the day, and for much the same reason, for on the concluding lap Cobb, driving Scott's big Leyland-Thomas, overtook the field three parts of the way round the Byfleet banking and, so far as we could judge through no fault of the field, could not get through. As he swooped down towards the fork he essayed to pass, and so close did he go to the edge of the track that a cloud of dust was sent up by his off-side wheel. Campbell secured the victory, the Leyland being only a few yards behind; third place was gained by Dunfee's Austro-Daimler. Winner's speed 101.85 m.p.h.



When Changing Down.

I RECEIVED a letter the other day from a reader who asked whether, when changing down, it was best (a) to slip the gear lever into neutral, accelerate and then engage the lower gear, using the clutch at each movement of the gear lever, or (b) to keep the accelerator pedal partly or fully depressed during the whole of the time that the change was being made.

Questions such as this reach me fairly frequently, so it occurs to me that a useful purpose would be served by publishing the reply which I have sent to my correspondent. It read as follows:—

With an engine which is responsive to the accelerator, and with any car when changing down at lowish speeds, I believe that the best practice, when changing down from top, is to accelerate distinctly in neutral, giving the pedal what might be described as a "tap." With a sluggish engine, however, or when changing down at very high speeds, a better plan is to keep the accelerator hard down on the floorboards until the lower gear is home.

A change of this kind, however, is not a proposition in my view unless made at a road speed equivalent to the flat-out speed of the car on the gear which is about to be engaged. In addition, it calls for very accurate judgment and is not to be recommended to inexperienced drivers.

A Trojan Experience.

ALL last week I went about my business in a Trojan, and a very interesting and satisfactory experience it proved to be. The model, kindly lent me by the manufacturers, was a by no means new one, fitted with high-pressure pneumatic tyres, and for the convenience, comfort and economy which it provided one can find nothing but praise.

During the week I covered over 500 miles, a fair proportion of which was along London roads, and the petrol consumption averaged a trifle more than 38 m.p.g. The best speed of the car on the level was 36 m.p.h., and at this speed it had not the slightest objection to continuing indefinitely. As a result I found that quite reasonably high average speeds could be maintained, whilst for traffic work the amazing top-gear performance of the two-stroke engine makes the Trojan almost as nippy as a sports car.

Foolproof Gears.

ONE of the best features of the Trojan is its absolutely foolproof gear-change and the great ease with which the car can consequently be manoeuvred. You can change direct from first to reverse simply by shifting the gear lever and without touching the clutch, whilst on the very

rare occasions when one has to change from first to top or top to first the operation is absolute child's play.

By degrees I am accumulating quite an extensive experience of foolproof gear-changes, and the better I get to know them the more attractive do they become.

But this is not the only direction in which my experience with the Trojan convinced me that it makes a very powerful claim to the attention of people who want a car that is essentially designed from end to end with utility and serviceability as the principal motives. The Trojan is ridiculously easy to keep up to concert pitch; it is absolutely reliable; it can carry half-a-dozen people without being overloaded; it will, I am told, run 20,000 miles before it needs to be decarbonized, and it can be kept at work for years without anything "coming loose" or renovations being necessary.

The car which was lent to me had run thousands of miles, but every part of it was tight; there were no rattles or squeaks and everything was absolutely ship-shape.

Selfish Driving.

I HAVE just taken delivery of a 1928 model Singer Junior two-seater which is finished in a pleasing shade of light blue; this, combined with the gleaming nickel of the radiator and so forth, produces a very smart effect, but the drawback is that certain types of lorry and taxicab driver when approaching often refuse to give themselves the trouble of pulling over slightly when courtesy demands that they should.

I was puzzled about this at first, but obviously the reason is that they know I will not risk a scraped or buckled wing in an effort to make them swerve, so they hold selfishly to their course near the crown of the road. I have seldom been similarly bothered when driving an old or dirty car, and I have noticed that the gentry in question always treat those who are obviously of the same ilk with all due courtesy and respect. Luckily, these selfish drivers are few and far between.

Time and Space.

AT a recent inquest on the victim of a smash in which two cars met head on the police stated that at the particular spot the drivers would have an uninterrupted view for 200 ft. The driver of one of the cars said he saw the other only for "an instant" before the crash and put his own speed at 30 m.p.h. A passenger in the

second car said the other vehicle came on them "like a flash," and he estimated that their own car was doing just over 30 m.p.h. A juryman expressed the opinion that the evidence was unsatisfactory as the speeds must have been much higher.

These facts reveal how little the relations between speed and distance are yet understood even among motorists. Two cars travelling at 30 m.p.h. are approaching one another at 60 m.p.h.—90 ft. a second! Consequently, with "an uninterrupted view for 200 ft." drivers would have just over two seconds in which to act before the cars were level. This explains the "instant" and the "flash," and it is easy to see how the slightest inattention on the part of a driver would lead to disaster.

Our Horseless Carriages.

SOMEBODY mentioned to me the other day how appalling wrong the layout of every car really is, and it seemed as if the ghost of all the geese sent to the knacker's yard through being made superfluous by the motorcar rose up and laughed a grim "Ha ha!" For undoubtedly we owe the present position of the engine to the influence of the horsed carriage with the "power unit" in front.

I have heard it said that the engine was put forward instead of aft for the convenience of the driver in the early days when frequent "doctoring" was necessary, but one has only to look at

the way the original cars were modelled on the lines of conventional carriages to see the true reason. And so, in the course of evolution, we have arrived at the stage when the driver in extreme cases is sitting fully the length of a horse from the front of his vehicle, and the length of the frame from his seat to the dumb-irons must be almost that of a pair of shafts. Thus the wheel comes full circle!

In the Future.

ONE has no doubt that we are committed to this layout for years. The big bonnet continues to exercise a fascination among those whose bank balances are in proportion, and no one knows to what limit the craze will grow. Even the "lower orders" are catching the infection, there being a tendency to add length and height to bonnets, although the engine beneath looks like a pom housed in the kennel of a mastiff. And yet I can envisage a car in which the driver sits in front, a bow-shaped window giving an uninterrupted view of the road. Years ago the Lanchester car came very near to this ideal, and a very pleasant car indeed it was to drive. Once, in an idle moment of thought, I could foresee a time when the whole of the power unit would be mounted on a separate pair of wheels and coupled to the chassis at the back. People would then purchase the carriage part and make their own selection of propelling mechanism to suit their requirements.



ON A CLAY ROAD
IN NEW ZEALAND.

— An Austin Seven owner basking in the sunshine of summer whilst we at home shelter from November's vagaries with the hood and all the sidescreens erected.

No Hope for Novelties.

NOTIONS of this kind are entertaining to turn over in one's mind. Often one finds that the most revolutionary from present-day standards are really quite practical, and that many features of the cars we deem so perfect could be vastly improved if it were not for the hampering influence of convention.

It is deplorable, really, that so early in the life of the motorcar it has become so stereotyped and yet is so far from perfection. In which connection I am reminded of a remark made to me recently by one of the big provincial agents. "I would sooner," he said, "try to sell chopsticks for the tables of the British aristocracy than cars which deviated in any one major respect from the specification which has become internationally recognized as correct."

On Nicknames.

THE naming of cars which promised to be a vogue a year or two ago has not made much progress, chiefly, I fancy, because of owners' fears of an anti-climax. To be limping along through some mechanical trouble on a car with "Winged Witch" on the bonnet is simply inviting ridicule, and a man hung up with a car named "The Flier" must feel in a very humiliating position. All the same, there are names which offer less challenge to circumstances, such as those adopted for river craft, and in these days of mass-production the adoption of a name is thought by many to be a simple and delightful method of adding distinction to a car.

Better Changing.

HAVING an hour to spare in a busy provincial town the other day, I spent it observing the skill or otherwise of drivers in the matter of gear-changing. To my surprise I hardly heard a single

grate or a crunch. It was not that everyone was proceeding in second gear, for the centre of the town was approached by fairly straight streets, in which it was easy to drive in top, but there came a congested area where a change down was almost obligatory. Yet no one seemed to mismanage the gears.

One of the streets rose at a considerable slope, but here again use of the gear lever seemed just as dexterous. The fact made one wonder whether the bogey of the gearbox about which we are constantly hearing is not, like all bogies, a fiction rapidly allayed by experiences. Certainly crashing gears are a rarity nowadays—a fact that attests to the excellence of modern design and the intelligence of the average driver.

A Second-hand Car Show.

AFTER spending quite an enjoyable day at the Motor Cycle Show last week I called on the Newnham Motor Co., whose second-hand car showrooms at 237, Hammersmith Road, are within a few minutes' walk of Olympia. I have never seen a more comprehensive selection of second-hand cars, nor am I familiar with anyone who can offer buyers of up-to-date second-hand light cars a more extensive range of all makes and types from which to choose.

At the time of my visit there must have been about 150 cars in the showrooms, ranging in price from slightly under £100. The majority seemed to be priced at between £110 and £130, and I was told that every car sold for more than £100 has a 12 months' guarantee. Not the least attractive feature of the premises is that the cars are not crowded in higgledy-piggledy; they are neatly parked with geometrical accuracy in a big, brightly lit showroom, where one can examine them in comfort and without being chivvied by salesmen.

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Good Work.

THE Roads Department of the Ministry of Transport has acted very wisely in publishing a very comprehensive report dealing with the manner in which the twenty million pounds or so which motorists annually subscribe to the Road Fund has recently been spent. The report makes it clear that this Department is serving an extremely useful purpose. It is apparently endeavouring not only to provide roads which wear well, but roads which are safe. In striving to obtain these objects it is making important practical experiments, not the least noteworthy of which, as we have mentioned on previous occasions, is the laying of experimental stretches of highway with a view to obtaining data concerning the durability of different kinds of roadway.

So far as skidding is concerned special apparatus has been prepared to the order of the Roads Department with which it is expected that reasonably conclusive results will be obtained. The report makes it clear that the elimination of accidents due to skidding is receiving the attention of practical men, and the impression is given that material advantages will be afforded by the painstaking manner in which experiments are being conducted. A fact which is made abundantly clear by the report is that better facilities should exist for classifying and analysing road accidents of all kinds. It appears that an excellent case could be made for instructions being given to the police of the country to keep a close watch on all accidents, with the specific object of eliminating the danger spots.

The Year's Sport.

THERE still remain one or two sporting events on the 1927 calendar, but Brooklands is closed, racing-car drivers have packed their traps and, whilst the season is still fresh in our memories, we may sum up the activities of the past seven months. One of the biggest disappointments has been the failure of the Brighton track to materialize. The scheme is not abandoned, however, and developments are pending. Brooklands has been the scene of the usual B.A.R.C. and other meetings, but phenomenally wet weather has spoilt practically every event. The Essex Club struck a new note with its Six-hour Endurance

"THE LIGHT CAR AND CYCLECAR" WAS FOUNDED IN 1912 TO CATER FOR THE NEEDS OF USERS AND POTENTIAL PURCHASERS OF LIGHT CARS AND CYCLECARS, AND IT HAS CONSISTENTLY ENCOURAGED THE DEVELOPMENT OF THE ECONOMICAL MOTORING MOVEMENT FOR FIFTEEN YEARS.

NO CAR WITH AN ENGINE CAPACITY EXCEEDING 1,500 C.C. (13 LITRES) COMES WITHIN THE SCOPE OF THIS JOURNAL, THAT CAPACITY BEING GENERALLY RECOGNIZED AND ACCEPTED AS THE LIMIT FOR A LIGHT CAR ENGINE.

Race, and the Surbiton Club staged a fuel consumption race of considerable interest; for the rest we have had handicap meetings, J.C.C. events run on similar lines to last year, including, by the way, one of the best 200-Mile races ever seen, and a British Grand Prix in which foreign cars obtained most of the limelight. With the very obvious exception of the M.C.C. long-distance events road competitions have

been poorly supported; in fact, numerous events have had to be cancelled owing to insufficient entries. This has been due largely to the often prohibitive cost of joining a club for competition purposes only.

The lessons which the season's sport teaches us are fairly obvious. There has been no big "approved" light car trial such as that which, we hope, the R.A.C. will organize next year; Brooklands has been supported by the same set of drivers meeting after meeting and new blood seems scarce; competitions are threatened with extinction. What of next year? Every true sportsman hopes for better things.

Is a Welding Era Coming?

IS the time coming when motor cars will be constructed largely by unskilled labour? This, fundamentally, was a prospect opened up recently by Mr. J. S. Wardlaw-Milne, M.P., who is a firm believer in the welded sheet-metal method of car construction and who has clearly indicated that when that principle is employed jobs hitherto demanding skilled workmen can be carried out successfully by fitters' labourers.

From the point of view of our national prosperity the greater absorption of unskilled labour in car construction is all to the good; it means more work for men who, at present, find employment difficult to obtain. Apart from this it means quicker, easier and cheaper production—all of which tend to increase our hold on the markets of the world; but what of the "skilled" men and the higher wages they at present command? Is their position threatened or will it simply mean that to meet the anticipated increased demand for men, unskilled labour alone will be employed? These are some of the interesting questions which arise.



THE RUINS OF A ONCE
FAMOUS CITY STAND
JUST OFF THE BUSY YAR-
MOUTH ROAD. THERE IS
NOW HARDLY A TRACE OF
ITS FORMER GLORY.

This picturesque street is the sole
reminder of the fame that Dunwich
once enjoyed.

IF you yearn for one of the fairest and most tantalizing corners of England then fill up the tank, pump up the tyres and head for "silly Suffolk" and the Ruined City.

We have to turn back the pages of many centuries of English history to find Dunwich—for such is the ruined city—in the glory that was once its own. In those halcyon days, frigates, fair ships, men-o-war and other vessels belonged to Dunwich, making it one of the leading seaports in eastern England. An episcopal see had its centre at Dunwich; nine churches, a bishop's palace and some monasteries were once part of this delightful retreat.

The North Sea has come to crumble and tear the old place down. They do say that if you could peep beneath the "fathoms deep" you would see some strange sights. Very possibly, for a whole town is at the bottom of the sea. As it is, the beachcomber will occasionally strike weird throw-outs from Davy Jones's locker, slight traces of the former glory of the city now forgotten.

All that is now left is a score of houses, one inn, one church, a couple of shops and a few outlying farms hardly forming part of the village.

An Old Monastery.

Close to the cliff edge are the ruins of the last of the monasteries. A little farther back is the squire's mansion, set in perfect sylvan surroundings.

Perched perilously on the extreme edge of the cliff in front of the monastery is all that remains of another of the former nine churches; the best part of this has gone to join the others; one day there will be a crash and Dunwich will find that even this crusted remnant has toppled over, taking part of the cliff with it.

You can make Dunwich your own, for there are few to disturb you. At low tide one may potter along for miles on a beach where the sea is so shallow that children wade for hundreds of yards in safety. All the while the sea-martins flit to and from their nest-holes bored in the cliff face, and it is a wonder they do not knock at the wrong door, so numerous are the sea-birds' homes. Scarcely for an instant does the soft surface of the undercliff cease to patter and slither down, to form heaps of debris at the foot.

In the woods is the pets' cemetery, where are buried some wonderful "Jacks" and "Dicks"; but the greatest hero of all is Zabii, the horse

"Of matchless form, Arabia's purest breed,
Danger and death on Afric's hills he braved
When there the British Standard gaily waved.
In Abyssinia's wars he bore a part,
No danger e'er appalled his gallant heart."

A trip that should not be missed is the short run, over moderately good roads, to Minsmere, three miles to the south of Dunwich. Here, with the car left on the top of the cliffs, is the ideal spot for a picnic in absolute quietude.

When the sun has dipped until the morrow there will be found in the inn the very epitome of an old English tavern. This is a place where they look after you well and charge reasonably; there is accommodation for five or six cars.

Dunwich lies 12 miles north of Aldeburgh, where also are evidences of coastal erosion—and five miles south of Southwold, where Van Somebody, an admiral of the Dutch fleet when the Dutch had a fleet, exchanged fire with the English.

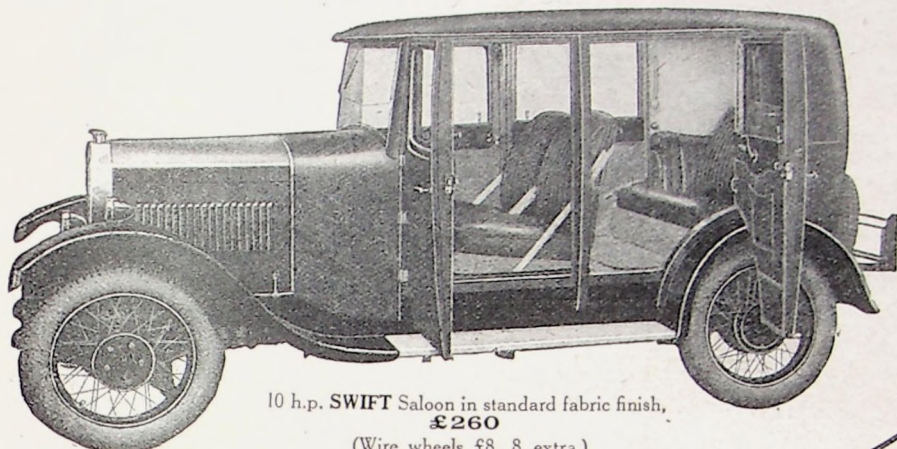
If you happen to start from London, take the main Chelmsford-Colchester-Ipswich road, through Woodbridge, Saxmundham and Yoxford, on the Yarmouth road, to Darsham, turning here sharp to the right and taking the Dunwich by-road indicated by a crude sign-post. This is the last lap, and five miles farther on, over heather-clad Suffolk country, is the ruined city.

It is the kind of place one is sorry to leave—an off-the-beaten-track spot which is instinctively marked down for revisiting next year. The village is but 99½ miles from London and is, therefore, obviously not too far out of the way for the average light car owner to tackle in the course of a short tour.

V.H.

One of the ruins at Dunwich as it appeared some years ago. Now the cliff has fallen away, taking most of the building with it. Coastal erosion is responsible.

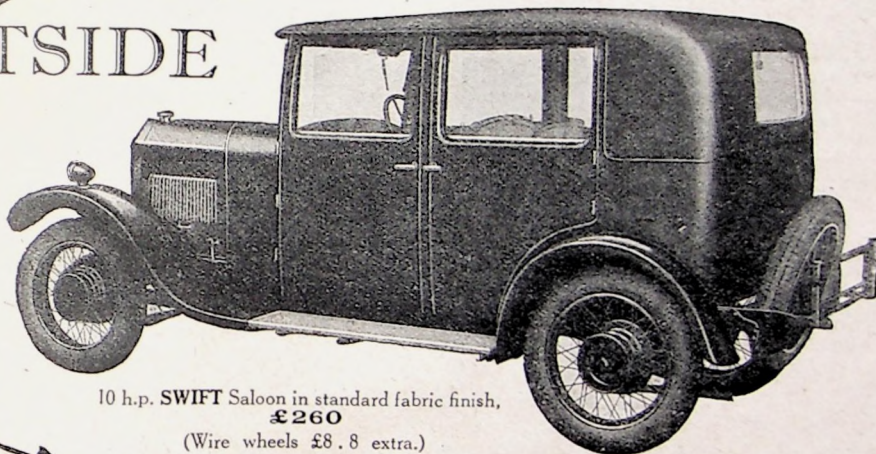
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THE HOME
BUILDER'S ART.

This three-wheeler was built by an amateur, largely from scrap parts. Machine work, body-building and hood-making were all done at home.

FROM time to time I receive very interesting descriptions of home-built cyclecars, and quite often the designs are really good. It has been left to Mr. R. W. Groves, however, to show what really can be done by a home constructor. He has built the three-wheeler which is illustrated and described on this page, and I think it will be agreed that the job appears to be thoroughly sound in every detail.

Before commencing the description it will be interesting to note that the whole layout was designed by Mr. Groves to work in parts that were on hand; these included the engine, gearbox, front axle, front hubs and four disc wheels. All castings required for the job were from patterns made by the designer and the machine work was done in a cellar with the aid of a 4-in. treadle lathe, emery wheel, vice and a good collection of small tools. The only jobs put out were screw-cutting, brazing and work that was too large to swing in the lathe.

The chassis is of pressed steel, channel braced by four tubular cross members, the rear one carrying special castings which act as spring bearers and house ball races on which the back fork is pivoted. The rear springs are quarter-elliptics splayed inwards from the full width of the chassis to the width of forks, where their ends slide on fibre pads.

The front spring bearers are bolted to the outside of the chassis frame and carry quarter-elliptic springs splayed outwards to the full width of the front axle to which they are shackled. It is obvious that carrying the springs to the ends of the axle increases the stability of

the body. Front-brake torque is taken by a return leaf above the springs. The brake drums are Ford, bolted to the back of the hub flanges and operated by a short cable and ball joints. The front brakes are the service brakes controlled by the pedal; the hand-brake operates on the rear wheel only.

Steering is by rack and pinion, and has proved very light and effective in operation. The radiator is a duplex-honeycomb type, obtained new at a very low figure. All wheels are detachable and interchangeable, the rear hub being of Mr. Groves's own design and running on Timken taper-roller bearings. One flange of the hub carries the wheel and the other the sprocket and brake drum. To detach the wheel, it is necessary only to take off the spindle nut and drop out a distance piece, then by taking off the five cap nuts the wheel comes away.

The engine is an 8 h.p. Chater-Lea water-cooled V-twin. Before being put into use the cylinders were re-ground and fitted with aluminium pistons, whilst the stroke was increased 10 mm. by fitting an eccentric crankpin, thereby bringing the capacity up to 1,100 c.c.

The drive is taken through a cone clutch and cardan shaft to a Chater-Lea three-speed and reverse gearbox, situated in about the middle of the chassis. From here the drive is carried by a short propeller shaft supported by flexible couplings to the bevel box. After hunting the market without success to obtain a suitable box it was decided to design and make one to suit the job exactly.

An aluminium case houses the two bevel wheels, each shaft of which

runs on adjustable Timken roller bearings. From the bevel box power is transmitted to the rear wheel by a 1-in. by $\frac{1}{2}$ -in. roller chain. The petrol and oil tanks were made from lead-coated iron with riveted and sweated joints. Five gallons of petrol and one gallon of oil are carried. Oil is supplied by a Showell pump, driven from the camshaft, to a dashboard sight drip lubricator, thence to the engine. Ignition is by Bosch magneto, and the carburetter is a Solex. Lucas dynamo lighting and electric horn are fitted.

The body is made entirely of three-ply on an ash framework. It has proved both light and strong, and has not yet started creaking, although it has been in service for three years. Fitted with a single-pane screen, Lucas pneumatic wiper, a hood that attaches to the top of screen and rigid side screens opening with the door, it has proved very comfortable and quite weatherproof, factors which Mr. Groves says appeal to him more than super speed.

Personally, I agree with this attitude. Super speed is very pleasant at times, but usually comfort must be sacrificed to obtain it.

All-round performance is good, but 45 m.p.h. is the highest speed obtainable. The designer thinks that this is due probably to the fact that the engine is of 1914 design, and the car is rather heavy and large for its type. This is, however, compensated for by the fact that the car stands any amount of gruelling and overdriving without showing any signs of fatigue, and does not require continual attention.

Mr. Groves mentions that his wife was responsible for the complete upholstering of the body and the covering of the hood, which incidentally proved a very tricky job.

WAYSIDE CROSSES

A FEATURE OF MANY ENGLISH MARKET TOWNS AND VILLAGES WHICH FORMS AN INTERESTING STUDY FOR ARCHEOLOGISTS AND MAKES AN EXCELLENT SUBJECT FOR AMATEUR PHOTOGRAPHERS.

(Left) The fine old sandstone market cross at Ross-on-Wye; it was built in 1670.

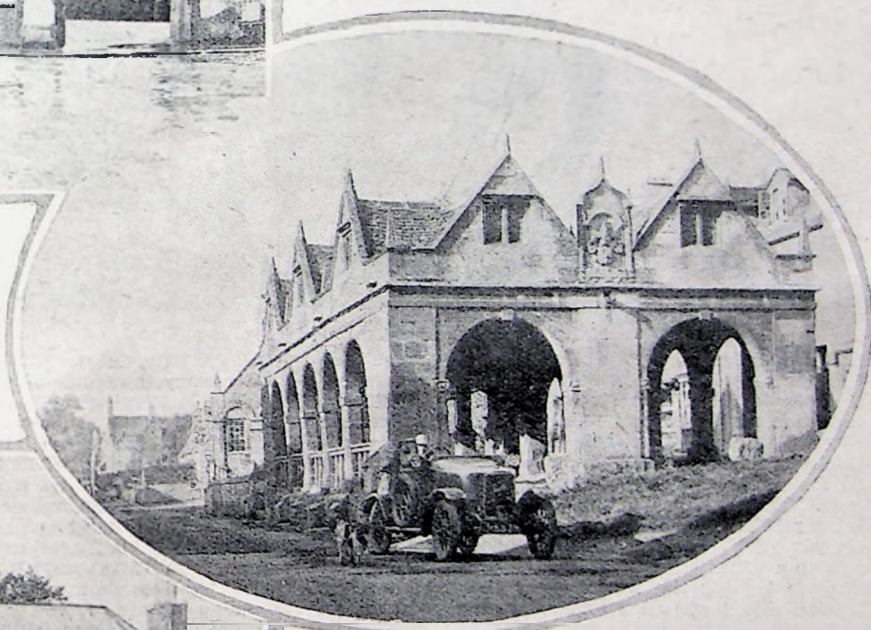
OBSERVANT tourists in rural England cannot help but notice the large number of market houses of varying character which are to be found in the villages and market towns throughout the countryside. Some of them, such as the picturesque example at Ledbury, are well known and are used to-day to protect the stallholders from inclement weather—the purpose for which they were originally built. Others have fallen into disuse owing to market halls having been erected and are now used as museums or reading rooms, as at Wymondham in Norfolk.

Many of these shelters were not erected for the sale of dairy produce as we know the market hall of to-day, but were used for the centre of the district trade, examples being the 16th century wool

Erected in 1633, the timbered market house at Ledbury (above) is considered one of the finest of its type. (Left) The typical Yorkshire market cross at Helmsley, and (right) an example to be found at Alston, Cumberland, one of the highest market towns in the country.



(Above) A modern market cross at Kirkby Lonsdale; it was presented to the town in 1905. (Right) The 16th century wool market at Chipping Campden.



market at Chipping Campden and the fine old yarn market at Dunster.

As the market was the centre of the town life, it is not unnatural that stories of the happenings in their vicinity should be attached to them. The so-called Liar's Cross at Devizes bears a plate describing how a certain market woman fell dead after calling God to witness that she had not received a payment, the money of which she held concealed in her hand.

At Ross-on-Wye is a splendid example in sandstone dated from 1670. Opposite the cross is the house of one John Kyrle, who lived about that time and, being a great benefactor to the town, was known as "The man of Ross." In order to keep his Royalist ideals before him he had F.C. enclosed in a heart carved on the market house, the meaning of which is stated to be "Faithful to Charles in heart."

Although these market houses take many forms, similar styles are often to be found some distance apart. Of stone buildings of the canopied type, Salisbury, Malmesbury and Chichester are very similar, the latter, erected in the 15th century,

being considered by many to be the finest in England. In the North of England market houses are not so common, but the stone cross with its base of steps is a feature of many of the villages. Three totally different stone examples are to be found at Alston in Cumberland (the highest market town in England), Barnard Castle and Beverley.

Probably the most recently erected cross is to be found at Kirkby Lonsdale; it follows the style of the 15th century Poultry Cross at Salisbury and was a gift to the town in 1905.

The crosses mentioned are only a few of the number to be seen up and down the country, and a study of the various types in existence will prove very interesting.

N.L.L.

SANDFORD CYCLECARS FOR 1928.

A THREE-WHEELER WITH AN 87 M.P.H. GUARANTEE
BEING MARKETING IN ENGLAND.

12 and 17 teeth, giving a reduction of approximately $3\frac{1}{2}$ to 1 from engine to rear wheel in top gear. A gigantic Renold chain is fitted, and this chain, which might well be described as of "lorry type," is a noteworthy feature of the 1928 Sandfords.

At first sight the chain may seem needlessly oversize for it is certainly capable of transmitting at least ten times more power than will ever be required of it. There are, however, many real advantages in using so big a chain. A breakage is quite unthinkable, it is absolutely silent and will run for very long periods

The Sandford three-wheeler is built on very sporting lines. Its low build can be judged from picture above, which shows Mr. Sandford standing beside a Grand Sport model.

THE Sandford three-wheeler, which first astonished French cyclecar enthusiasts by a series of racing successes in 1923, has since attained a magnificent reputation for speed and reliability on the other side of the Channel. It is one of the few very small vehicles which not only is capable of 80 m.p.h., but in addition is safe to drive at such a speed on French roads. The machine is probably the most refined cyclecar in the world and in consequence it is rather expensive, for it is built up to a standard rather than down to a price.

Before leaving the works every Sandford receives that individual attention and exhaustive road testing which one associates with certain makes of high-grade luxury car, and this accounts in no small measure for the success of the machine. The chassis is of unusually substantial construction for that of a cyclecar. The frame is built up from heavy-gauge steel tubes, put together with split lugs. Acetylene welding, so beloved by the makers of cheap French motorcycles and cyclecars, is entirely tabooed.

The engine is a 60 mm. by 95 mm. four-cylinder o.h.v. Ruby, having a special camshaft with high-lift cams. A single-plate clutch, running dry, transmits the power by means of a short, rigid shaft to a three-speed-and-reverse gearbox, which is also made by the Ruby Engine Co. to Mr. Sandford's design. Like everything else about the chassis, the gears are very substantial and the shafts are mounted in large ball bearings.

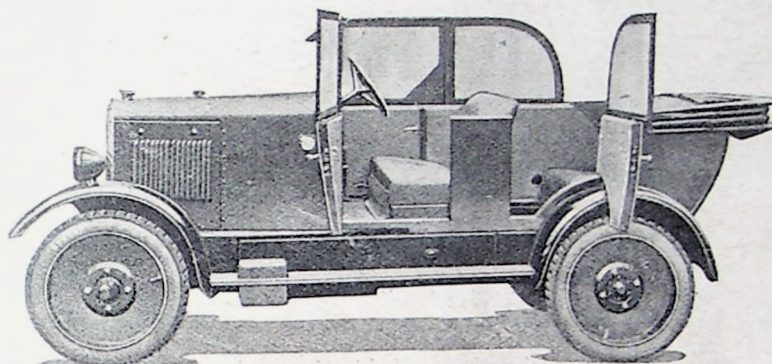
At the rear end of the gearbox a short propeller shaft carries the drive through a pair of bevels to a countershaft upon which the driving sprocket for the chain is mounted. The small bevel pinion has 12 teeth and the crown wheel 30 teeth. The chain wheels have

without adjustment. Should the chain become slack after many thousands of miles running its own weight assists in keeping it from jumping the teeth of the sprockets, as the chain runs comparatively slowly.

Like all high-grade French vehicles, the Sandford is very well sprung. Front suspension is by very substantial square-section helical springs, with smaller springs beneath the stub axles. The rear suspension is original and most efficient. Long semi-cantilever springs, with six leaves, extend from the top side members of the frame nearly to the ends of the forks, which are hinged to short tubular steel connecting rods extending upwards from the lower side members of the frame. The hinge itself forms a shock absorber of the friction-disc type.

A new feature of the 1928 Sandford is the very large rear brake drum, front and rear-wheel brakes now being identical. The rear brake is foot-operated and the front brakes are controlled by a lever which is external to the body.

An attractive feature of the Sandford is the arrangement for removing the rear wheel. The operation of wheel changing actually is easier than in the case of some four-wheeled cars. When the rear wheel has to be changed the nut on the end of the spindle is first removed and the spindle drawn out. The wheel, being bolted up to a flange on the hub, the four wheel nuts are next unscrewed with a brace and the wheel can then be rolled out backwards. Other chassis details are: Weight of chassis, $5\frac{1}{2}$ cwt.; fuel consumption claimed, 35 m.p.g.; guaranteed speed on the level, 140 k.p.h. (87 m.p.h.). This is no idle boast; every Grand Sport Sandford which leaves the works is guaranteed to do 87 m.p.h. Epicyclic steering reduc-



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

tion gear is fitted, the box being mounted at the top of the steering column. The wheelbase is about 8 ft., the track 4 ft. 6 ins. and the overall length 11 ft. 8 ins.

We had a trial run in one of the latest Grand Sport Sandfords last week from Paris to Monthéry and back by Versailles. Starting from Neuilly, the greater part of Paris had to be traversed in order to reach the Porte d'Orleans. In the congested traffic of the city top gear seemed just a trifle too high, but as the machine does up to 60 m.p.h. in second this made no difference to one's comfort in driving. From the gates of Paris to Monthéry track is a little over 14 miles. This distance was covered in exactly 20 minutes.

A STURDY THREE-WHEELER.

handle at high speeds. The steering is light but sure and gives one a pleasant feeling of confidence, especially when cornering. The brakes are exceedingly powerful but sweet in action, so that the machine may be brought to rest from all speeds without a sign of a skid. Although a three-wheeler, immunity from skidding seems to be a strong feature of the Sandford.

On the machine which we tried hand-throttle control only was fitted, but we understand that Sandfords for

Very little brazing or welding is used in assembling the Sandford chassis, nearly all the tubes being joined by clamped lugs. These two views show clearly the general construction, that on the left depicting the combined fork hinge and shock absorber and the aluminium spring gaiters. The position of the gearbox and the method of mounting the fascia board are shown above.

It is true that the road is practically straight, but to anyone familiar with its present condition an average of over 40 m.p.h. will indicate good going. Especially so as the run was made at midday and the heavy slow-moving traffic in the suburbs of Montrouge and Arcueil had to be negotiated. The return trip, via Orsay, Jouy-en-Josas and Versailles, includes some fine straightaways of good tarmac. Here it was possible to open out a bit. The car proved itself to be very fast indeed, and not merely fast but delightful to

the English market will have a foot accelerator in addition. Bodies on the English models are to be made slightly wider than the standard French type. This is being done to meet the wishes of English buyers, who insist upon a little more comfort than does the French sportsman. We found the road-holding qualities of the Sandford particularly good, even over atrocious roads. Sandford cyclecars are handled in England by R. J. Shanks and Co., Ltd., Baker Street, Weybridge, Surrey.

A TRAGEDY OF THE NIGHT.

IN the pale luminance of the street lamps the car moves slowly. The driver's very manner shows that he is endeavouring to avoid attention. His eyes are narrowed and anxious as he seeks a refuge where he can be free from those inexorable watchers.

Slinking round corners, dodging every passer-by, looking this way and that and trying always to hide, he sits back exhausted at last and peers around in despair. Already he is parched with thirst, his tongue swollen and hot. Many hours have elapsed since last he rested, since he had eaten solid food.

As he sits exhausted, he remembers with a pang the girl to whom he is engaged, and wonders why ever he left her to come upon this terrible adventure. People come and go. Some look at him, but none stop to pity his terrible plight.

How he longs to get away from those eyes that stare and stare. Some one must speak to him soon, and then what can he say? Perspiration trickles down his brow. He lets in the clutch and crawls a few yards, only to stop once more, disheartened, railing at the cruel fate that has separated him from his loved one.

Heavens! Is there no way out? People pass and look, and time wears on. Is there no way of escape—no means of avoiding their staring eyes?

Suddenly something moves in the distance—a shadow passes in front of a far-away lamp. The man in the

driver's seat cranes forward, peering through the dimly lit streets, then sits upright. He engages first gear with a crash, and the car rushes madly forward a few yards, then stops.

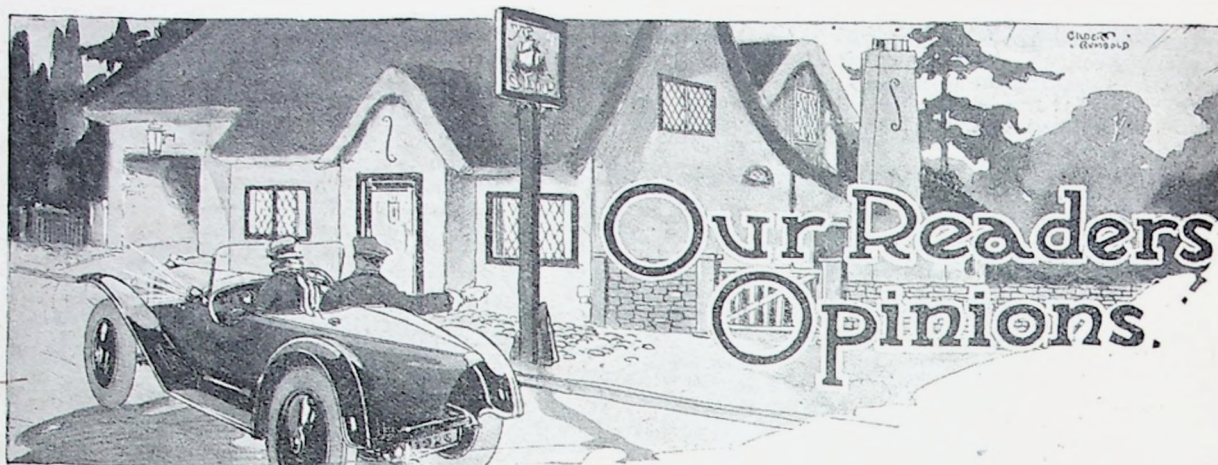
Too late! The chance has gone, and once again dark despair settles over him. He sits back brooding, a faint perspiration on his brow, but no hand is put out to help. He must get away whatever the end may be! He must quench his thirst. He must eat. He must make one last effort to win back to the girl he left behind.

Biting his lip to hold his shattered nerves in check, he lets the car move slowly, straining his eyes to see if help is near. A man in uniform stands on the kerbstone and suddenly beckons.

Making one last desperate effort he shoots forward. The car shudders as the brakes are rudely applied, and leaps back like some affrighted animal as the reverse gear is roughly engaged. The engine stops and the driver descends pale and trembling. The uniformed one touches the peak of his cap and steps forward into the light of the side lamps. In his hand he holds a notebook and pencil.

"Sorry, sir, that you have had to wait so long," he says, handing the man a ticket, "but it's always a job to find a place in the car park on a Saturday night!"

J.L.C.
B37



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

JOHN PEEL v. JOHN CITIZEN. Motorists and Fox-hunting—The Controversy Continues.

Meeting Restive Horses.

Those who object to hunting on principle are perfectly entitled to their own opinion, but they surely do no good by adopting the abusive tone of the letters published in your issue of November 4th. "A Lover of Nature" apparently has no intention of stopping his car when meeting a nervous horse. Such conduct might easily place him in a police court on a charge of dangerous driving, or worse. Has "One of the Common Motorists" ever ridden a high-spirited horse across difficult country? If not, I submit he is not entitled to proclaim that it needs no skill or pluck to do so.

LOVER OF NATURE AND COMMON MOTORIST.

Do Unto Others—

May I be permitted the opportunity of commenting on the letter from Mr. G. J. S. Segar-Owen? By all means let us do all we can to safeguard the lives of all animals, the mongrel dog as much as the foxhound.

The Lust for Blood.

I appeal to motorists not to inform a huntsman if they have seen the fox, not to open gates, not to avoid crossing the scent of the fox; in fact, not to do anything which will assist this vile and brutal business known as "one of Britain's finest sports."

Can Mr. Segar-Owen picture himself, without any means of protection, being chased by a tribe of cannibals? Surely, the position of the fox is even worse. Let us try to overcome our lust for blood and let our sport be something more worthy of our intelligence.

H. DUNCAN HOBART.

Toleration Necessary.

The batch of letters on fox-hunting which were published last week might lead one to suppose that the bulk of motorists are spoil sports. No one pretends that a fox has a chance against the hounds when caught, but he has many chances of avoiding his fate, and following the hounds on horseback requires an amount

of pluck and skill which I venture to suggest the correspondents who wrote under noms de plume may lack.

The fact that some motorists do not themselves care for fox-hunting is no reason why they should try to spoil the sport of those who ride to hounds. It would be equally logical for a motorist who despises fishing to spoil an angler's chance of success by throwing stones into the water. Your correspondents should exercise toleration and try to develop a

238

sense of proportion. I would remind them all that there is quite a number of people who dislike motorists—but they do not put nails in the road.

May I add that I am a motorist and have neither the means nor the time for fox-hunting. My recollection of Mr. Segar-Owen's letter is that it was a perfectly courteous request for fair play.

H. O. DANCKWERTS.

Motoring Fatalities Quoted.

The tender solicitude for the hunted fox expressed in the three letters in your issue of the 4th inst. comes well from followers of a sport which in England and Scotland alone

in 1926 killed 4,886 humans and injured 133,888. "Evans on the Field" says the fox has about one chance in 500. On referring to a country

newspaper, I see the doings of six hunts reported, and out of 15 foxes hunted four were killed; I know that, taking the season through, this is above the average.

I should love to put "Common Motorist" on a horse and let him try to follow hounds; he would find that he required both skill and pluck. Motorists generally are in favour of fox-hunting, or we should not see so many of them come with "the missus and the kids" in their cars to the meets and follow hounds during the day as well.

FERRARD AWAY.

The Sport Condemned.

I am indeed delighted to read the letters in last week's issue of *The Light Car and Cyclecar* in reply to Mr. Segar-Owen's remarks on fox-hunting. Does he think we run down dogs purposely? On the contrary, we use every endeavour and oftentimes take

Causing Untold Agony.

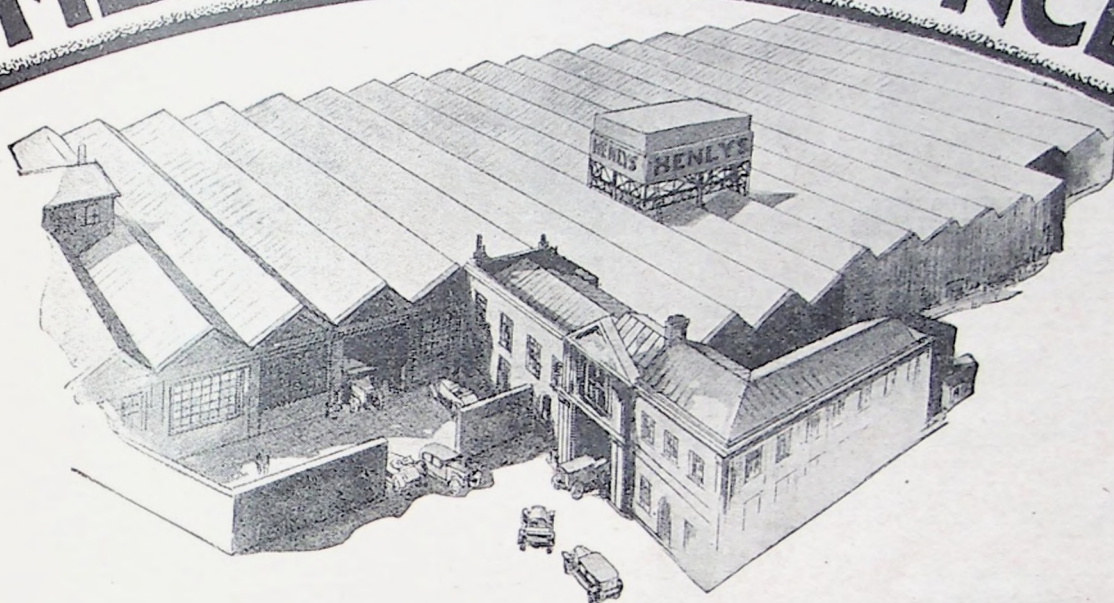
risks to avoid hurting animals—rather different from the so-called "sportsmen" on horseback who issue orders in a loud voice to all and sundry in the fond hope that we common motorists are duly impressed with their importance.

If these lordly people really believe in sport, then why not indulge in point to point chasing (not waiting to pass through gateways left open by their orders as these "sportsmen" usually do), or better still purchase a modern motorcycle and take part in some of the scrambles or the Amateur T.T.s, if they dare.

No, Mr. Segar-Owen, we will not assist you to cause untold agony to a small defenceless animal which has no means of turning the tables and scratching the priceless skins of its tormentors.

FAIR PLAY.

HENLYS ANNOUNCE



The Official Opening of their
VAST NEW SERVICE STATION
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ON MONDAY NEXT, NOV. 14th this, the biggest and best Motor Agents' Service Station in the country will be officially opened. The result of a great ideal this magnificent depot has been built to set a new standard in service to motorists.

The occasion is further a fitting crown to the Mighty New Sales Record we created last week. We are therefore particularly happy to extend to all interested a special invitation to visit our new premises on Monday. Welcome is over the door!

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 To further signalise the occasion we are offering, at these new premises, next week only, nearly 100 used cars less 10 per cent. Those of £100 and over are guaranteed. All of them can be obtained on our unique easy terms—and the utmost allowance made for your car in exchange.

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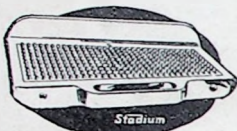
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Black good quality Up to 14 h.p. Austin "7."

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Antique . . . 25/-
Special Cushions for bucket seats 21/- Post free.

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PLUG TESTER.

Combined plug tester and pencil, can be carried like a fountain pen. 2/- post free.

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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.

OUR READERS' OPINIONS (contd.).

Small Cars with Right-hand Control.

I was pleased to read the letters from "XP5807" and "Once Motorecyclist" in your issue of November 4th, as I am in cordial agreement with these correspondents. Both right-hand control and a two-panel windscreen will be fitted on my next (and fourth) car. Some time ago I tried a car with left-hand control and felt so helpless with it that I would not on any account buy a car so fitted. In a small car there is not, as a rule, too much room in front, and with a large passenger close up to the gear lever I should imagine "hanging on top" would be much in evidence. Although conversion sets to right-hand control might be made to order, they would no doubt form a not inconsiderable "extra."

Besides the reason given by "Once Motorecyclist" in favour of two-panel windscreens it might be added that if the screen wiper stops when driving in rain, it is much safer to raise the top panel than to drive with a blurred screen.

My present car has given splendid service, but as Show week approached I thought I would try a change. Like "XP5807," my choice was so limited that I did not go to the Motor Show, although I happened to be in London during the week.

Limited
Choice.

SUSSEX.

Right-hand v. Central Control.

At one time, I, like your correspondent "XP5807," thought that right-hand control was better than central, but from experience can say that with a two-three-seater the latter is preferable. With three people in the front seats of a small car it is almost impossible to make sufficient room for the driver to reach a right-hand control, whereas a central lever is in front of the occupants and easily reached.

The Extra
Passenger
Difficulty.

I find that the width of the front seat of my Rover is 48 ins.—ample room for three—and the central gear lever is more convenient than a lever tucked away between the driver and off-side door.

R.O.W.

"La Politesse."

No, Mr. Marmin, I cannot agree that the little incident I mentioned in a recent paragraph concerning the behaviour of two parties of French motorists was in the nature of a "complete travesty of French manners."

"Focus"
Replies.

I have seen a Frenchman spit in a fellow-countryman's face on two other occasions—once at the Le Mans 24-hour Race of 1925 and again at the Boulogne Georges Boillot Cup Race this year. In neither case did the recipient (!) appear particularly to resent the insult.

FOCUS.

"Overheads" and Running Costs Compared.

Although the question of motoring expenses is a vital one to the man of moderate means, a correct detailed statement of the cost of running a light car is not easy to obtain.

A Striking
Account.

With the particular object of satisfying my own curiosity on the subject, I have therefore kept an accurate itemized account of the cost of running a popular 11 h.p. four-seater car during the 12 months ended last May. The actual detailed statement of costs is as follows:—

Total mileage, 7,000.			
Capital Charges.		£	s. d.
Interest on capital, 5 per cent. on £190	9 10 0	£	s. d.
Depreciation, 30 per cent. on £190	57 0 0		
Cost of accessories	5 16 6	72	6 6
Maintenance Costs.			
Tax	11 0 0		
Insurance	9 13 2		
A.A. entrance fee and subscription	3 10 6		
Garage, part cost, rates and taxes	8 0 0		
Driving licence	0 5 0	32	8 8
Running Costs.			
Petrol (230 gallons)	17 1 2		
Oil (11 gallons)	2 11 8		
Repairs and overhauls	6 4 11		
Hotel garage and parking fees	2 14 6	28	12 3
Total	£133 7 5		

Total cost, 46d. per mile.

Running cost, 0.98d. per mile.

Petrol cost, 12.8 per cent. of total cost.

The first controversial point in the statement of an account of this nature is that of depreciation. After making

a statistical study of the advertised selling prices of cars of various ages, I decided to lay down as capital charges 5 per cent. interest on the price of the car at the beginning of the year and to depreciate this price by 30 per cent. during the year. This gives a value to the car which is considerably above its market price at the end of the first year, but at the end of three years this difference will probably have disappeared and may even have become reversed. As I intended to keep the car for at least four years, I think this division of charges is a fair one.

I consider that all the costs have been reduced to the absolute minimum, as I have attended to washing, oiling and greasing, myself. The car has given a consistently good performance, maintaining an average petrol consumption throughout the year of over 30 m.p.g. I have been fortunate, also, in passing the entire year without a single puncture, so that tyre maintenance costs were nil. Lest this may be thought to foreshadow the early doom of the tyres and so give an unduly large increase to the tyre bill during the second year, I may add that since May a further 4,000 miles have been run with only three punctures.

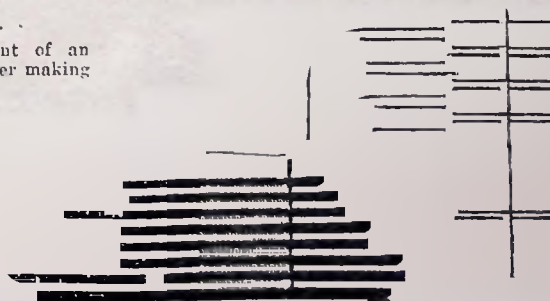
Reverting to the costs, the most striking feature is the large ratio of the cost of owning and keeping the car to the cost of running it. In actual figures it has cost £104 15s. 2d. to keep the car in the garage ready for use, and only £28 12s. 3d. to run the car a distance of 7,000 miles, or approximately 1d. per mile. The cost of the petrol is seen to represent only 12.8 per cent. of the total.

In anticipating the cost of running during the second year, it must be remembered that whilst the capital charges will be reduced, owing to the lower interest and depreciation, the running costs will be increased somewhat by tyre and general overhauls and replacements. I expect, therefore, that the overall cost during the second year will be the same as for the first year.

R.L.S.R.

NOT YET IN
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The sports car of the
future as conceived by
an artist after a weary
day at the Motor Cycle
Show.



OUR READERS' OPINIONS (contd.).

Why Trap on "Safe" Roads?

Why must we always be trapped for speeding where the road is wide and where there is not much traffic, as for example, in Regent's Park or on the new by-pass roads? We are paying for wide new roads to relieve the congestion in shopping centres and so forth, and we go out of our way quite a lot in the interests of pedestrians. Every Sunday there is a trap on the recently widened section of the North Road between Tally Ho Corner and the beginning of Whetstone. Why are not these traps placed in congested areas?

Catching the Wrong People. BITTEN.

Inlet Manifold Design.

From the excellent article published in *The Light Car and Cyclecar* dealing with induction pipe design, one fact stands out clearly—that designers are concentrating on the task of minimizing the ill effects of the rapid oscillations set up in the inlet pipe by the continuous current reversals. The suggested ways of doing this are

admirable, and are, to a great extent, the ways used in modern practice. Unfortunately, it is not commercially possible to cure this fault entirely when it is present in any manifold. It is, however, possible to construct a manifold in which these oscillations are negligible, providing that the valve ports are not grouped in pairs and that the manifold is not strictly limited in size.

The present design of induction system, with its angled bends and blanked ends is, in my opinion, absolutely wrong. In only one respect does it naturally exceed the performance of the old type, i.e., in fuel consumption. This is not due, as is generally thought, to the fact that this manifold has better distributing qualities. It is because the tortuous passages allow only a small charge of a highly turbulent mixture to be drawn into the cylinders. The quality of the mixture is fairly good in most cases (not all), but the quantity leaves much to be desired. In other words, the modern induction system acts in nearly the same way as a carburettor far too small for its engine.

Some people appear to think that the easiest way out of the difficulty is to fit a low-pressure supercharger. If this development takes place we shall see the present form of manifold disappear within six months of the beginning of the forced induction era. All motorists, however, do not want the extra complication and increased price which follow, so why not concentrate on designing a manifold which will give both quality and quantity distribution?

If some designer would devote only a week of his time to the subject, after forgetting everything he ever knew about inlet systems, he would obtain some startling results.

There are a few things that he would have to remember during this week. (1) Each cylinder requires a supply of mixture that has not been interfered with by any of the other cylinders. (2) One carburettor only should be used, whether the engine is a "four," "six," or "straight eight." (3) No "hot spots" or other unmechanical devices must be employed. (4) Each inlet valve must have a separate port—an important point.

GERALD P. DEVANEY.

A Juvenile Horatius.

I was interested in the article "With Trojan and Trailer" in your issue of October 25th, and particularly with the reference to the progress of your correspondent through Christchurch, where a road scout "stands in lordly state and, like Horatius, holds the bridge." The bridge indicated is, of course, Iford Bridge, midway between Boscombe and Christchurch. At one time during my visit to the district in August, the road scout was evidently off duty temporarily, and a small boy was doing the job and doing the job uncommonly well! I was so amused at the young man's self-possession that I got my daughter to "snap" him and I enclose a print.

Incidentally, this bridge carries an enormous amount of traffic in the holiday season, and it is most surprising to me

Iford
Bridge.



The "snap" of Iford Bridge referred to in the accompanying letter. Note the juvenile traffic controller.

that the local authorities have not before now done something to relieve the congestion. The bridge is quite a long one and is only wide enough for one vehicle at a time, the result being that there is frequently a long line of cars drawn up waiting for cars to pass in the opposite direction.

THOMAS E. CLARKE.

Parking Difficulties at Southend-on-Sea

The question of parking is a matter which every motorist studies. We have our likes and dislikes, and our ultimate destination is almost always governed, to some extent at any rate, by this question. We compare

Unauthorized Attendants. notes with each other as to the methods adopted in different towns, and so it is that certain places become extremely popular owing to the facilities offered. Now there is one place where there is splendid parking accommodation. I refer to Southend-on-Sea, where parking is allowed practically the whole way along the front. But there is one thing which spoils it all and that is the number of "touts" who step out into the road and invite you to park your car on their particular pitch. I always stay with relatives and only rarely wish to park my car, but I cannot "tootle" along the front without running the gauntlet with these wretched fellows.

That is not the point, however. These men are absolutely unauthorized and have no means, except their memory, of seeing that the rightful owner takes a car away. Apart from that, one feels that there is an air of coercion about the whole thing, and I have often wondered whether my car would be all right if I failed to leave it in the charge of one of these men or small boys, as is sometimes the case. They may be local unemployed and deserving; but I have a shrewd idea that on the busy days in the summertime some of them are only there for a day trip from London.

B42

If the local council does not wish to appoint a paid car-park attendant and make a proper charge for parking, I would recommend them to adopt the system in use at Brighton. There a properly appointed man receives you, and hands you a numbered voucher which he tears from his counterfoil book. On the voucher you will read that he is the official car-park attendant (unpaid).

I hear that local residents are complaining, and therefore hope that before next season the council will have taken some steps to put an end to this objectionable "touting" business, which gives one such a bad impression of the place.

W. E. A. NORMAN.

* * Mr. Norman forwarded a copy of the above letter to the Town Clerk of the Southend-on-Sea Council, and the following is a copy of the reply which he received.—Ed.

I duly received and thank you for your letter of the 31st ultimo, enclosing copy of a communication which you have addressed to the Editor of *The Light Car and Cyclecar*, and I will bring the same to the notice of the appropriate committee of the town council in due course. I may say, however, that the points to which you direct attention are already receiving their consideration, and although it is not possible legally to make a charge in respect of the use of a parking place on the public highway, as you seem to think, the committee have an alternative provision under consideration.

(Signed) H. J. WORWOOD, Town Clerk.

CONFIDENCE



SCOTTISH MOTOR SHOW
November 4th—12th
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11.22.H.P

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THIS 11.22 Wolseley is as fine a car as money and experience can build. It is produced in the Wolseley Works at Birmingham, which for over a quarter of a century have been renowned for high-grade cars. It is particularly easy to handle; its quick acceleration makes it ideal in traffic; it is a delight to drive on the open road. The ideal car for drivers who demand absolute safety as well as exceptional performance.

TAKE A TRIAL RUN.—To try this wonderful 11.22 h.p. Wolseley is to buy it. Write for catalogue, and permit us to arrange a trial run for you from your own home through your nearest dealer.



WOLSELEY

WOLSELEY MOTORS (1927) LTD., ADDERLEY PARK, BIRMINGHAM.

D.A.S.

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.

OUR READERS' OPINIONS (contd.).

More Space Wanted—

I am in entire agreement with your correspondent, Mr. O. Pazakerly. I think that more space in your columns should be devoted to motor sport than at the moment. As the racing calendar does not stretch over the whole year, I think that while there are any races being run they should be dealt with freely. There are obviously many thousands of individuals who are interested in motor racing, and owing to one thing or another are not able to be present at the big meetings held on the various tracks; they, therefore, look forward to accounts and photographs in the motor papers. Apart from actual track races, there are the speed trials and hill-climbs to be considered. These must be of interest to many of your readers, and there are many owners who have been assisted in the choice of their cars by the performance of similar models in competition work. I am quite certain that if only Mr. Hemmington-Spess knew more of the value of racing he would at once become a keen follower of one of the greatest of all sports.

—TIGGER.

CONDENSED CORRESPONDENCE.

"Overseas Enthusiast" (India) is very interested in steam cars, and would be glad to hear from anyone in touch with the latest developments regarding the manufacture of an English steam car. Letters addressed to "Overseas Enthusiast," c/o The Editor, will be forwarded to the appropriate quarter.

Following the insertion of a paragraph for Mr. Frederick K. May (London, S.W.19), asking for readers' experiences of the Austin Seven and Jowett, Mr. May writes expressing his gratification at the result. He received two letters from dealers the same day that his request appeared, three letters

from private owners the following morning, (Saturday), a further letter the same evening and a communication from Messrs. Jacksons, of Croydon, on the Monday morning. Mr. May was particularly pleased with the latter, for it contained no solicitation for orders, but to quote Mr. May's own words gave "in three pages of single-space typing a wealth of comparative data."

INFORMATION WANTED.

ARTEL NINE.—The opportunity to purchase or borrow a handbook dealing with the 1923 model would be welcome.—L. King, Home Farm, Fulmer, Slough.

HUMBER.—The chance to buy or borrow an instruction book for the 1924-5 8-18 h.p. model would be appreciated.—Frank W. Latham, 56, Tenyson Road, Stratford, E.15.

AUSTIN SEVEN.—The loan of or opportunity to buy an instruction book dealing with the 1924 model would be welcome.—W. A. Bousier, 82, Howard Road, Walthamstow, E.17.

PEGGEOT.—Readers' experiences of the 7-12 h.p. model, with particular regard to reliability and general performance, would be much appreciated.—James Long, 25, Elm Grove, Thorpe Bay, Essex.

CALCOTT.—Any reader who has an instruction book for the 10-15 h.p. model which he is willing to lend or sell is asked to communicate with—F. L. Heathorn, One Oak, Radlett Road, Boreham Wood, Herts.

BELSIZE-BRADSHAW.—Any owner who has an instruction book for the 1924 model which he is willing to lend or sell is asked to get in touch with Robert Blair Matchett, Culag Villa, Braeside Avenue, Rutherglen, Glasgow.

NAME AND ADDRESS.—The owner of the magneto spanners which were kindly lent to the Gwynne Special driver at the last Shelsley Walsh Meeting is requested to send his address (mentioning the make of car on which he was working) to D. J. Hamilton-Lister, St. Anthony's, Hatton, Middlesex.

CLUB ITEMS AND SPORTING EVENTS.

BARNESLEY M.C. AND C.C.

The results of the Barnesley Club's Safety First test held on October 28th were:—1, H. Hough (Austin Seven); 2, G. Stott, Junr. (Austin Twelve). The object of the trial was to test the drivers' knowledge of the rules of the road both from the legal and theoretical points of view. Points were lost for noisiness, incorrect signalling, unnecessary and excessive use of warning signals, excessive speed and lack of courtesy to other road users.

LONDON M.C.

On a recent social run to Ivinghoe and Oxford there was a turnout of 37 members. The officers of the club are very gratified to note that rapid progress has been made during the past few months, and that the club is in a very flourishing condition. The membership now runs into three figures, and a winter dis-

R.A.C. PERMITS.

The R.A.C. has issued the following closed permits:—November 15th, Southport M.C., reliability trial; November 27th, West Kent M.C., reliability trial; December 27th-28th, M.C.C., London-Exeter-London run.

FORTHCOMING EVENTS.

November 13.
Liverpool M.C. Percy Butler and Revenge Trials.
Brighton and Hove M.C. Russell and Drewitt Cups Trial.
Southport M.C. Reliability Trial.
November 19.
Inter-Varsity Reliability Trial.
November 20.
Woking and D. M.C. and C.O. Trial.
November 22.
New Cyclecar Club, First Annual Dinner at Hotel Cecil.
November 26.
Carshalton M.C. Trial.
November 27.
West Kent M.C. Reliability Trial.
December 3.
Brighton and Hove M.C. Annual Dinner.
Kent and Sussex L.C.C. Annual Dinner.

WEST KENT M.C.

The annual autumn trial to be held on November 27th is open to members of the following clubs:—Woolwich, Carshalton, Whitgift, Sunbeam, Denmark Hill, Woking, Redhill, Bexley Heath, Hurlingham and West Kent. The latest date for receiving entries at 4s. each is November 23rd, but late entries will be taken at 5s. each. The fee for teams of three will be 3s. extra. The course is over a 35-mile circuit and is to be covered twice; it will include a stop-and-restart test. The start will be from the White Hart Hotel, Brasted, Kent. Full particulars may be obtained from the hon. secretary, Mr. F. Wilson Smith, 32, Hammeton Road, Bromley, Kent.

CAMBRIDGE UNIVERSITY A.C. SPEED TRIALS.

A very fair light car entry was received for the Cambridge University Automobile Club's speed trials at Hatley on Saturday. The course, a straight of 600 yards, was kindly lent by E. Ridgill, Esq. The 1,100 c.c. sports and racing car class included an exceptionally fast cup model Austin and also another similar car, which caused much amusement by an oxygen cylinder feeding the gas into the air intake of the carburettor. Unfortunately, it caught fire half-way down the course.

As usual, the 1,500 c.c. sports and racing class was won by a Frazer-Nash.

The light car touring car class was won by a two-seater Bugatti, which, incidentally, was considerably faster than the winner of the unlimited touring car class.

R. Plunket Greene gave a demonstration in his Frazer-Nash in full touring trim, and after an excellent run clocked fastest light car time. Two interesting cars were a sleeve-valve Vaverley built for a past 200-Mile Race but now burdened with a four-seater body, and the other an attractive-looking home-built car locally known as a "Bentbeam." Two Riley Nine Weymann saloons were somewhat disappointing.

It is interesting to note that, apart from the touring Bugatti, every light car entry was of British make.

The results were as follow:—

1,100 Sports and Racing Class.—1, H. J. Raymond (Cup Austin), 30.6 secs.; 2, E. H. McIlwraith (Austin Special), 31 secs.; 3, W. F. W. Potter (Cup Austin), 32.1 secs. 1,500 Sports and Racing Class.—1, P. A. Normann (Frazer-Nash), 27.5 secs.; 2, R. F. Ransome (Frazer-Nash), 27.85 secs.; 3, C. W. R. Arnott (Alvis), 28 secs. 1,500 c.c. Touring Class.—1, W. A. Rowell (Bugatti), 30.2 secs.; 2, M. S. Green (Austin-Martin), 31 secs.; 3, F. J. S. Ellis (Austin), 32.9 secs.



Flt.-Lieut. Webster (on left), of Schneider Cup fame, and Major H. O. D. Segrave (second from right) were the principal guests at the Civil Service M.A.'s annual dinner.

ture list is being arranged and will consist of runs not exceeding 40 miles on the outward journey. A number of social events have been arranged and should prove very attractive. For general information concerning the club's activities application should be made to the hon. secretary, Mr. F. W. C. Lawrence, 23, Primrose Hill Road, Hampstead, N.W.3.

CIVIL SERVICE M.A.

A social run to Crooksbury Common will be held on November 20th. A picnic lunch will be arranged in a sheltered spot and tea will be served at the Abinger Hatch Hotel. The start will be from the "Angel," on the Portsmouth Road at Thames Ditton, at 11 a.m., and the route will be through Guildford along the Hog's Back to Puttenham Common, Crooksbury Common, Bramley, Shere, Ewhurst, Pitch Hill, to Abinger.

The first dance will be held at St. Ermin's Hotel, Westminster, on Wednesday, December 7th. Tickets will cost 5s. each, including refreshments, and the band will be the Cuban Blues, which proved so popular with members last year. The hon. secretary will be pleased to supply tickets. Lectures on Continental touring have been very ably given every winter by Mr. Brennan; this winter's lecture will be held on December 14th and will be exceptionally interesting, in view of the fact that the subject is the Continental tour undertaken by the C.S.M.A.



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.

Preventing Damage to Coachwork.

On some cars leather straps are fitted to the doors to limit their travel, preventing them from opening too far and fouling the spare wheel, battery case or reserve petrol container. It should be remembered that, after some time, these straps stretch and may not limit suffi-



Straps limiting the opening of a door stretch in use and may require shortening after a time.

ciently the opening of the door. It is advisable, therefore, occasionally to unscrew the strap fixings and to shorten them by $\frac{1}{2}$ in. or so, thereby taking up stretch which may have occurred.

Shielding Magneto.

Wet weather and heavy rains are not likely to interfere with the ignition arrangements of modern cars, for magnetos nowadays are usually well protected. On some older cars, however, it may be advisable to improvise a shield for the magneto to prevent the rain driving through the radiator on to the contact-breaker or distributor.

In most cases this presents no great difficulty: a small shield of sheet iron may be bent at right-angles and clamped underneath the magneto fixing, so that the shielding part is vertical and covering the business end of the magneto. It is also a good plan to smear vaseline or thick grease over the edges of the contact-breaker and distributor covers. This will positively prevent moisture from creeping inside and causing ignition trouble.

Not too much vaseline should be used,

however, or it may penetrate into the casing and cause trouble at the contact points.

A Car Washing Hint.

It is not always easy, when washing down a car, to prevent water from splashing through the radiator and bonnet louvres and drenching the magneto or carburetter.

A very simple way of preventing this, however, is to place the radiator cosy in position before turning on the water supply. If the cosy is of the type which covers the whole of the radiator and bonnet, it will form an effective water seal. Water may then be liberally hosed on to the bodywork without fear of interfering with the carburetter or ignition arrangements. The cosy can afterwards be dried and the bonnet washed with a more gentle force of water.

Cleaning Aluminium.

Many motorists are apt to be prejudiced against polished aluminium bodywork simply because they believe that

much laborious cleaning and polishing is necessary to keep the surface of the metal presentable. This is not the case.

The secret—if it can so be called—of keeping aluminium bodywork clean is to use metal polish of good quality; almost any metal polish is suitable and it should be very sparingly applied. It is also advisable in wet weather to remove rain spots with a chamois leather immediately on reaching the garage, for if the spots are allowed to remain they may in time cause dark stains on the surface of the metal which can be removed only after much hard polishing.

Illuminating the Rear Seats.

Some form of illumination for passengers in the rear seats of chummy or full four-seater cars is frequently a convenience. Some motorists arrange for a light—in the case of open cars—by fixing a fascia board lamp or small saloon interior lamp to one of the hood sticks, connecting up by flex leads to the switchboard. This method has the disadvantage, however, of throwing a certain amount of light on to the inside of the windscreen.

A better place for the rear-seat lamp is at the back of the front-seat squab. There is usually some woodwork supporting the squab to which the lamp may be screwed, wiring being brought forward to the instrument board.

If it is considered really necessary to have a lamp attached to one of the hood sticks, or to the roof in the case of a saloon, it should be placed so that no appreciable light is cast forward. Dash lamps using bulbs of the festoon type are quite suitable.



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.

L.A. (Tunbridge Wells).—Packing material for the water pump of your 10 h.p. Talbot should be obtained from the makers of the car.

R.H. (London, W.11).—As your car is such an old one we think you would be ill-advised to spend the large sum mentioned on engine overhaul, as it is likely that on re-sale your car would fetch only £20 to £25, and you will clearly see that the cost of the overhaul would be out of all proportion.

J.W. (Nottingham).—Improper adjustment of the lock stops on the steering box of your Clyno would cause a front tyre to come in contact with chassis parts at full lock in one direction. The nut stops on the box should be screwed inwards until a satisfactory steering lock is obtained without the tyres fouling the front part of the chassis frame.

R.T. (Hull).—You will find the engine number of your 7 h.p. Peugeot stamped on top of the cylinder casting in front near the valve caps.

F.W. (Derby).—Many grease-guns are provided with ball valves which prevent the discharge of the lubricant unless the nozzle is connected to the greasing nipple.

R.M. (Nottingham).—The fact that the tappets of your engine can be rotated by hand and turn slightly when the engine is running does not indicate a fault. Each tappet is arranged to be free to turn through part of a revolution each time it rises: a new part of the working face of the tappet head is thus brought into contact with the cam. This ensures a long working life.

C.T. (Taunton).—Unduly small jets or carburetter choke, or the throttle not opening fully, might cause the poor all-out speed mentioned. As you have carefully checked the ignition timing, we assume there is no possibility of the ignition being too far retarded, which fault might have been responsible. Other possible factors are a choked silencer, preventing free egress of the exhaust gases, and partial stoppage of the fuel supply.

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H.P.

B47

AROUND THE TRADE.

We are informed that the Brooks patent super-sparker and magneto tester has been awarded a diploma of merit at the International Exhibition of Inventions held at the Central Hall, Westminster.

Lea and Francis, Ltd., believe that a catalogue should be a work of art, and the latest effort dealing with the 1928 models more than upholds their traditions. Readers who would like copies should apply to the company at Lower Ford Street, Coventry.

We have received from the Ever Ready Co. (Great Britain), Ltd., a catalogue describing their new season's goods. Ever Ready starting and lighting batteries (12-volt) are now priced at £5 17s. 6d. complete, whilst the 6-volt batteries are now £3 10s.

From J. B. Brooks and Co., Ltd., Birmingham, we have received leaflets giving 1928 prices for radiator cosies, motor trunks and so on. The radiator cosies are now made in patterns to suit practically all makes of car, some interesting examples being the 12 h.p. Lea-Francis type at 18s., the 10 h.p. Rover size also at 18s., and the 12 h.p. Fiat cosies at 20s.

H. Taylor and Co., Ltd., 49-53, Sussex Place, South Kensington, S.W.7, announce that they have been compelled to take new premises in Queen's Road, Peckham, on account of the steady growth of their business on the south side of the Thames. The new showrooms will remain open until 8 p.m. every evening, except Thursday, and until 9 p.m. on Saturdays, and they will display a large range of new and second-hand cars and accessories.

We learn that the actual super-sports Morgan which created so much interest at the Cycle and Motor Cycle Show is on view at the premises of H. Beart and Co., Ltd., 102, London Road, Kingston-on-Thames, in company with a large number of other Morgan models.

We learn that Mr. Howard, of Howard's Garage, West Byfleet, Surrey, has been appointed sole distributor for the county of Surrey of the two-seater semi-sports Avon body designed for fitting to Austin Seven chassis. The retail price is £53, and Mr. Howard invites further inquiries.

Austin owners will be interested in the announcement made by Sterns, Ltd., 46, Royal London House, Finsbury Square, London, E.C.2, to the effect that all Austin cars are run in on Sternal WW motor oil, and that every car sent out is filled up with this oil. Furthermore, Sternal is recommended by the Austin Motor Co.

Fort Dunlop informs us that E. C. Fernihough, who broke four records at Brooklands in his 494 c.c. Morgan, and R. R. Jackson, who broke three records in a similar machine, were both running on Dunlop tyres. It is also interesting to note that G. E. T. Eyston's 1½-litre Bugatti, which won *The Light Car and Cyclecar Challenge Cup* at Brooklands recently, was equipped with Dunlop tyres.

A leaflet describing Hambling's three-speed gearbox for Morgans has been issued by Messrs. F. H. Hambling and Co., Cambridge Mews, West, Kilburn, N.W.6. Notable points about this gearbox are that it is easily fitted—no cutting of the frame or bevel box being required—only one chain is necessary and the gears are totally enclosed. It is made in three sets of ratios, standard, close and racing, and the price, ready for fitting into a machine, is £12. It is interesting to note that Mr. D. S. C. Macenskie's air-cooled Morgan, which gained a gold medal in the recent M.C.C. high-speed trial, is fitted with a Hambling three-speed gearbox.

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Write, 'phone or call and inspect our stock of 100 small cars under £100—you will not be pestered to buy. Get our quotation for your present machine. Full details of our excellent credit terms. Whatever your proposition let us help you—it costs you nothing. Here are a few typical examples—every car fully guaranteed and open to A.A. or R.A.C. examination.

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AMILCAR, 1925, grand sports, Hartfords, countless extras, exceptionally fast... £89
 AUSTIN 7, 1925, special sports 2-str., many extras, exceptionally fast... £89
 A.C., 1921/2, coupe, starter, remarkably smart, sound... £58
 A.C., 1923/4, Royal 2-str., fullest equipment, perfect chassis. Choice of two... £79
 CALCOTT, 1924, 10/4, 2-str., de Luxe starter, remarkably well kept throughout... £68
 CITROEN 7, 1925, 2-str., balloons excellent, all extras. Choice of two... £59
 CITROEN 7, 1925/6, cloverleaf 3-str., tip top throughout, fullest equipment... £69
 FIAT, 1921/2, 10/15, de Luxe 2-seater, excellent upholstery, paint and hood... £48
 JOWETT, 1925, "7", de Luxe 2-str., sunk dickey, very small mileage, as new throughout... £69

PEUGEOT, 1926 "7", cabriolet, starter, balloons, imitation fabric body, small mileage... £69
 ROVER 8, 1923/4, 2-str., clock, speedo, starter, specially tuned engine, very economical... £39
 ROVER 9, 1926, super 2-str., starter, balloons, full standard equipment, excellent chassis... £99
 RENAULT, 1925, cloverleaf 3-str., 8/3, F.W.B., rigid equipment, perfect throughout. Choice of two... £88
 RENAULT, 1924, 8/3, de Luxe 2-str., excellent tyres, many extras, remarkably well kept... £69
 SINGER, 1924, de Luxe 2-str., 10/26, rigid equipment, speedo, clock, starter, perfect throughout. Choice of two... £68
 SINGER, 1923, 10/26 as above... £49
 SALMSON, 1922/3, English 2-str., starter... £49

STANDARD, 1924, 11/4 Conley 2-str., small mileage full standard equipment. Choice of four... £65
 SALMSON, 1925, English body de Luxe 2-str., small mileage, perfect throughout... £68
 SALMSON, 1926 model super sports, special streamline body, starter, flared wings, exceptionally fast... £85
 WOLSELEY, 1923/4, 11/22, 2-str., remarkably well kept... £55

FOUR-SEATERS.

ALBERT, 1924, de Luxe 4-str., countless extras and equipment... £58
 A.C. 1924/5, Royal 4-str., small mileage, rigid equipment... £85
 BELSIZE - BRADSHAW, 1922/3, de Luxe 4-str., starter, excellent condition... £38
 JOWETT, 1925, long 4-str., fullest equipment, as new throughout... £89

HUMBER, 8/18, 1923/4, de Luxe chummy, fullest equipment, 2 spare wheels... £88
 RHODE, 1924, "10" de Luxe 4-str., starter, 4 door body, fullest equipment... £65
 RHODE 9, 1923/4, light 4-str., countless extras, new condition throughout... £55
 ROVER, 1924/5, 9/20, de Luxe 4-str., balloons, clock, speedo, perfect throughout... £89
 ROVER, 1924, 9/20, 4-str., starter, full equipment... £59
 RILEY, 1924, 10/4 de Luxe, 4-str., 4-door, fullest equipment, small mileage... £95
 STANDARD, 1925, Kenilworth, 4-str., small mileage, remarkably well kept. Choice of two... £88
 SALMSON, 9/5, 1926, 4-str., F.W.B., original equipment... £88
 SINGER, 1925, 10/26, 4-str., 4 door body, many extras... £95
 TALBOT, 1923/4, 10/23, 4-str., remarkably well kept... £85

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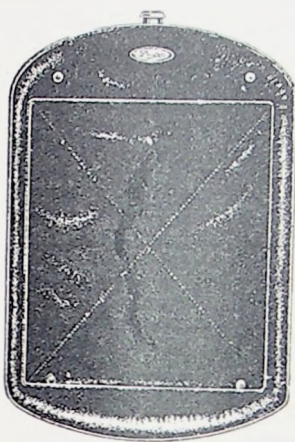
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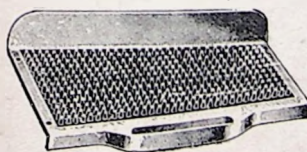
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Pratts



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Engineers have remarked upon the excellent
workmanship and design of the Mosaire.

Yours faithfully, T.N.

AUSTIN 7. Reading.
I shall have no hesitation in recommending
the Mosaire, and several of my friends who are
Engineers have remarked upon the excellent
workmanship and design of the Mosaire.

I find it quite satisfactory.

Yours truly, T.G.W.

FIAT 9. Bournemouth.
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