

The Light Car and Cyclecar

Founded 1912

The only Small Car Journal

3rd

Vol XXIX No 751
Friday April 29 1927
*Registered at the GPO
as a Newspaper*



BYLAND ABBEY, YORKS.

A favourite rendezvous of Yorkshire motorists, standing at the foot of the Hambleton Hills, equally noted for their scenery as their stiff gradients. The arch through which the car is passing is part of the original abbey through which the road has been constructed.



Test your tyres every Friday

Calibrated in 1 lb. units—10 to 42 lbs. Made with ball foot—easy to use on any type of wheel. Price 6/10.

GUESSING at your air pressure causes doubt and worry, and soon proves costly. Balloon tyres that need 30 or 35 lbs. of air should never be run with less.

Test your tyres every Friday with a Schrader Gauge. Friday is the best day because most tyres work hardest over the week-end.

The Schrader Gauge has been

standard for years. It is sturdy, dependable, inexpensive, easy to carry and to use with any type of wheel.

Own a Schrader Gauge and keep your mind free from tyre-worry by using it every Friday.

Schrader products are sold by more than 100,000 dealers throughout the world.

*A. Schrader's Son, Inc.
Offices and Main Distribution Stores:
26-29, New Street, Westminster, S.W.1.*

BE SURE IT'S A SCHRADER: LOOK FOR THE NAME
(Regd. Trade Mark)

PLEASE REFER TO "THE LIGHT CAR AND CYCLECAR" IN YOUR LETTERS TO ADVERTISERS.

The
11.4 h.p. CITROËN

a Car for real Service!

“The longer a Citroën is run
and the harder it is driven,
the better it becomes.”

OWNERS' OPINION.



BUY THAT CAR THE SERVICE WAY AND CUT OUT ALL FUSS AND WORRY.

Get that car from The Service Company of High Holborn, where everything humanly possible is done to make the transaction simple in every way and to save you any trouble, whether you buy for Cash, Deferred Payments or Part Exchange.

We have a magnificent selection of 1927 models in stock, including

**AUSTIN. CITROEN. CLYNO. JOWETT.
PEUGEOT. ROVER. SINGER. SWIFT.**

Call and view them and "talk them over" with our expert salesmen demonstrators, whose advice is unbiased. You can, of course, try out any make. There is no obligation to purchase, but should you decide, you will find that the Service Co. offers the best terms and advantages.

DEFERRED PAYMENTS.

Any car can be supplied for the payment of one-fifth down and the balance in 12, 18 or 24 months.

PART EXCHANGE.

Most generous price allowance on your old car. The balance in easy payments if desired.

SERVICE.

Real help both before and after sale.

Also in stock a variety of overhauled, used, and demonstration cars, any of which can be supplied on extended payments.

"Service—Our
Name and Aim."

**The Service
Company Ltd.**
(LONDON)

Telephone :
Holborn 0666
(3 lines).

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

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

The best advice has always been — "Leave the mag alone"

THERE is one thing on your car that you can rely on to do its job as well as the job can be done and that you never need to bother about. It is the magneto. Its job is to provide the sparks that keep the engine firing.

Since the days when the invention of the magneto all but abolished the troublesome coil and battery method, the magneto has been steadily improved and to-day demands less attention than any other part of the car.

That is because the magneto is entirely self-contained and independent in getting its energy from its magnet and being therefore practically everlasting, while every other ignition system relies on batteries that are needing constant attention. The extra tax on the battery involved by such ignition makes for battery trouble and the slightest flaw in the circuit or leak in the cells will render the car useless.

Only in countries with numberless special "service stations" can such a system operate.

British motorists prefer a manufacturer to put the "service" into a car before it is sold rather than leave them to pay for it afterwards themselves.

To their credit the makers of 95% of British cars have refused to "skimp" the cost in this matter and they continue to use magneto ignition.

Its principle has been tested by time. Its details are continually being perfected by the thousands of skilled workers who have built up the British Magneto industry.

BRITISH MAGNETOS

THE SAFEST
MAGNETOS

BUY A BRITISH CAR WITH A BRITISH MAGNETO.

ignition

1. Magneto Ignition is the only independent self-contained system of ignition.

2. Magneto Ignition is the only system not affected by accumulator trouble, nor involving elaborate service facilities. And it is fool-proof.

3. Magneto Ignition requires no electrical knowledge on the part of car owners.

4. Magneto Ignition is used on over 95% of the cars sold in Great Britain.

5. The world's record is held by a car which depends on Magneto Ignition.

6. The high quality of British Magnetos has taught motorists to expect ignition perfection. If through the use of inferior substitutes they experience ignition trouble it is the car maker's reputation which suffers.

7. The use of substitute ignition systems, most of which are of foreign origin, affects a vital British industry and the welfare of thousands of skilled British workers.



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

How EVERLASTIC Inner Tubes pay for themselves

Patent No.

WHAT do they cost? That is the question asked by every motorist who learns how Everlastics prevent 95 punctures in 100 and make blow-outs practically unknown. Their initial cost is, of course, higher than old-fashioned thin inner tubes, but in use they are far more economical. By the saving on outer covers alone they more than pay for themselves. In addition you have balloon tyre comfort without balloon tyre cost. Strain on the chassis is reduced. Everlastics rarely require re-inflating. To the motorist who appreciates real economy Everlastics are indispensable. Examine Everlastics yourself—it is worth while. Send for sample section and new reduced price list.

1 Everlastics permit lower inflation pressure. Instead of bouncing over obstacles, causing tyre-destruction, wheel spin, shocks are absorbed and tyre life lengthened.

2 Made of the finest rubber with a patented tough black rubber insertion. Everlastics prevent 95 punctures in 100. Outer covers can be run to destruction.

3 The low limit of extensibility of the black rubber insertion, combined with thicker walls, make blow-outs improbable.

4 Because Everlastics can be run at lower pressures than ordinary thin tubes chassis strain is reduced and riding comfort increased.

RUBBER WORKS Section C, Slough

AND

NAME

ADDRESS

TAKING THE "S" OUT OF "SOIL"



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

To learn why, send a p.c. for the book "The Car" (or, if you're a motor-cyclist, "The Motor Cycle.") Both are free and post free from Price's, the Oil People (Dept. EE3), London, S.W.11.

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

MOTORINE

very special oil

Price's Patent Candle Company Limited, London, S.W. 11

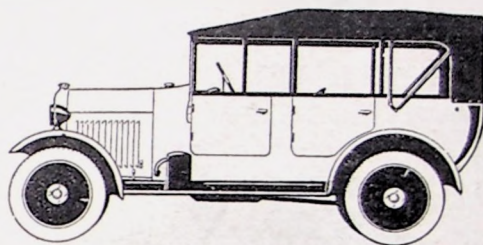
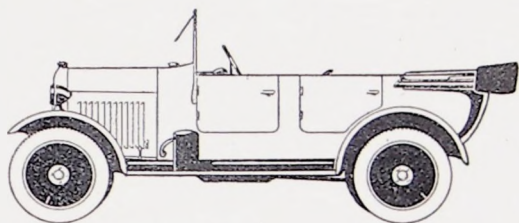
PRICE'S

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

THE OPEN ROAD AND THE OPEN CAR WHITELEYS

open up the way to purchase

Every day brings the season nearer when a run in an open car through England's glorious countryside is a joyful and exhilarating experience and the straight road ahead an inspiration and a temptation! Yet our climate is fickle, and the prudent owner will make sure that his car is equipped with adequate protection against the sudden shower or continuous rain, as are all the cars shown below.



The SINGER "JUNIOR," open and closed.

SINGER, 8 h.p.,
"Junior," 4-seater **£148-10**

or £29:14:0 cash deposit and

12 monthly payments of	..	£10 7 11
or 18 monthly payments of	..	£7 1 11
or 24 monthly payments of	..	£5 8 11

SINGER, 10/26 h.p., "Senior"
4-seater .. **£220**

or £44 cash deposit and

12 monthly payments of	..	£15 8 0
or 18 monthly payments of	..	£10 10 3
or 24 monthly payments of	..	£8 1 4

SINGER, 10/26 h.p. Saloon **£260**

or £52 cash deposit and

12 monthly payments of	..	£18 4 0
or 18 monthly payments of	..	£12 8 5
or 24 monthly payments of	..	£9 10 8

OTHER CARS

CLYNO, 11 h.p., 4-seater **£172-10**

CLYNO, 11 h.p., 4-door
saloon .. **£199-10**

FIAT, 9 h.p., 2-3-seater .. **£195**

FIAT, 9 h.p., 4-seater .. **£200**

JOWETT, 7 h.p., long 2-seater **£150**

LEA-FRANCIS, 10 h.p., 2-seater,
3-speed .. **£210**

GET THIS BOOK FREE

Our Booklet, "BUY-
ING A CAR,"
should be in your
hands before you
make your purchase,
and, if you should
be considering your
first car, this booklet
will be additionally
helpful. It contains
brief particulars of
over 700 cars, much
general information,
a sketch of a modern
chassis with the
names of all working
parts given, etc., and
it will be gladly sent,
post free, on request.

RENAULT, 9 h.p. Torpedo, 4-seater .. **£155**

or £31 cash deposit, and

12 monthly payments of	..	£10 17 0
or 18 monthly payments of	..	£7 8 1
or 24 monthly payments of	..	£5 13 8

ROVER, 9/20 h.p., semi-
sports, 4-seater .. **£260**

or £52 cash deposit and

12 monthly payments of	..	£18 4 0
or 18 monthly payments of	..	£12 8 5
or 24 monthly payments of	..	£9 10 8

CLYNO, 11 h.p., 2-seater.. **£160**

or £32 cash deposit and

12 monthly payments of	..	£11 4 0
or 18 monthly payments of	..	£7 12 11
or 24 monthly payments of	..	£5 17 4

OFFERED INCLUDE:

RENAULT, 9/15 h.p., metal
panelled saloon .. **£207**

RENAULT, 9/15 h.p., torpedo
de luxe .. **£179**

ROVER, 9/20 h.p., 4-seater .. **£225**

TROJAN, 10 h.p., Utility 4-seater **£125**

WOLSELEY, 11/22 h.p., 2-seater **£215**

WOLSELEY, 11/22 h.p., 4-seater **£250**

Any Car supplied on similar terms to the Morris examples shown above.

WRITE FOR SECOND-HAND CAR LIST.

WM. WHITELEY LTD. (Phone: Park 1234), QUEENS ROAD, LONDON, W.2.

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

"They Say

"WHO SAY"? Did you ask?

Why, hundreds of your fellow car-owners who have fitted the



and are experiencing
MARVELLOUS RESULTS

They say from their own actual experience that the B & B Carburetter is different — and has made a big difference to the running of their cars.

Let us prove this to you
by means of our

Special 30 Days' Trial
Offer under our "money-
back" guarantee.

State the make
of your car
and take ad-
vantage of our
offer NOW.

Prices from
£3 - 10 - 0

BROWN & BARLOW LTD.,
Carburettor Works, Witton, Birmingham.

London Service Agents: Dartford Eng. & Carriage
Co., Ltd., 23/24, Hythe Road, Willesden, N.W.10.

Come to Colmore!

Earliest Possible Delivery
of the Popular

SINGER
Junior"

£148:10:0

Annual Tax only £8. Consumption 45 m.p.g.
Speed 5-50 m.p.h. Fitted with 3 Doors. Adjust-
able Front Seats. Carries 4 adults in comfort
The running cost of a "7" with the comfort and
road performance of a "10."

and
IMMEDIATE
Delivery of the Sporty

MORGAN
"Aero Model"

£
127



The smartest of the Morgan range of three-
wheeled cars. Fitted with an O.H.V. Anzani
Water-cooled Engine. Front Wheel Brakes are
now standard, and 4 in. Balloon Tyres are
optional without extra charge. Fully equipped.

**Exchanges and
Easy Terms.**

We have excellent facilities for the disposal of Second-hand machines and can make you a far better allowance than any obtainable elsewhere. The Balance can be paid over a convenient period. Get in touch with us.

**OFFICIAL SERVICE
AGENTS —**

31, COLMORE ROW
(adjoining Grand Hotel).
BIRMINGHAM.

24, PARADISE STREET, LIVERPOOL.
209, DEANS GATE .. MANCHESTER.
62, HIGH STREET ... LEICESTER.
250, STAFFORD STREET, WALSALL.

We will reward

the owner of the Jowett mentioned in the letter below, if he will send his name and address.

Birmingham.

20th April, 1927.

Dear Sirs,

*I thought I would just drop you a line and tell you this. On Monday when I was motoring round Gloucestershire and Worcestershire I pulled up at the top of Fish Hill, and much to my surprise, there was a Jowett car at the top of this hill, which I should think is one of the steepest hills in the country, and there were **eleven up**.*

I do not know whether this is a testimonial to the goodness of the car or otherwise, but it rather tickled my fancy, and I thought I would just drop you a line and tell you.

Yours faithfully,

S.J.

Although *slightly* overloaded, what striking evidence of the unbounded confidence every Jowett owner has in his car! "Any road with any load" is evidently our friend's motto. It is certain that Jowetts with their superior design and materials are daily doing work which would be a task for many cars of double the price. Make your choice a Jowett.

Five models. Prices from £139

"The little engine with the big pull."

Dunlop Balloons and Stewart Speedometers standard.

JOWETT CARS LTD., IDLE, BRADFORD

Salmson Performances

10/20
SKIFF,
70 m.p.h.,
£175

100 miles per hour average in the rain

Smashing victories were won at the reopening of the Montlhery track on March 18th, when Salmsons were 1st, 2nd and 3rd in all three races.

16 other new models from £165 to £410 in stock, as well as some shop-soiled cars at reduced prices.

10/20
3-SEATER SPORTS
65 m.p.h.,
£215

10/20
GRAND PRIX SPECIAL
85 m.p.h.,
£315

West End Agents:
HAYWARD
Automobiles Ltd.

Kingsbury House, King Street,
St. James's Street, S.W.1.

Telegrams: "Alwethbodi, Piccy, London."
Telephones: Regent 6302, 3250.

10/20
WEYMANN SALOON,
60 m.p.h.,
£275

Speak louder than words!



Issued by "The Motor."

2/6
NET

Obtainable from all principal Book-stalls and Booksellers, or direct from the Publishers 2/9 post free.

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

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

For the Owner - Driver and Amateur Mechanic.

AN entirely new book dealing exhaustively with the most modern methods of motor vehicle repair. The work is written throughout in non-technical language and practically every necessary tool and operation is shown in illustration.

WELL ON THE ROAD TO SUMMER PLEASURE IN A LIGHT CAR FROM HOMAC'S

A light car for light and brighter Summer days from Homac's, backed with Homac's genuine service that guarantees trouble-free motoring. Homac's specialized knowledge and advice is impartial—free—and yours for the asking. Investigate this now and let Homac's put you on the road to real motoring pleasure.

MORGAN PRICES REDUCED

STANDARD Model -	£89
DE LUXE, air-cooled -	£110
FAMILY, air-cooled -	£111
DE LUXE, water-cooled -	£120
FAMILY, water-cooled -	£121
AERO, water-cooled -	£127
AERO, 10/40 h.p., Racing -	£140
SELF-STARTER 210 extra	

HOMAC'S
MOTOR AGENTS

243/7, LOWER CLAPTON ROAD,
Works: 46, LONDON RD., CLAPTON, E.S.
Phone: Chisold 2408.

CITROËN & ROVER—
DEFERRED TERMS ARRANGED
WRITE FOR CATALOGUE.
REPAIRS & OVERHAULS
BY MORGAN EXPERTS.
FULL STOCK OF GENUINE MORGAN
SPARES. TRADE SUPPLIED.

E VALVE" CAR

Swift and Safe

Like everything else about the car, the servo operated four-wheel brakes on the 11/25 h.p. Imperia are a distinct improvement on previous practice. Their immense power, instantly applied, is absolutely smooth. No harshness, no shuddering or squealing. They are progressive; the arresting action becomes rapidly greater without any increase of pressure on the pedal. The servo mechanism makes these brakes so sensitive and easy to operate that a lady driver can get as quick a pull-up as any man.

*The "Imp" chats to
The Cautious Motorist.*

"When some sixteen year old John on a Lizzie comes swinging out of a side turning — when Paterfamilias suddenly decides to assert his right to the crown of the road—when the sportive motorcyclist 'cuts in,' you'll be glad of those Imperia brakes that save the situation—but never throw the car off its

course—even in the gummiest grease.

**IMPERIA MOTORS Ltd.,
CORDWALLS WORKS,
MAIDENHEAD.**

Imperia Distributors: Connaught Motor & Carriage Co., Ltd., 34-36, Davice St., Berkeley Sq., London; P. J. Evans, Ltd., 81-91, John Bright Street, Birmingham (Warwickshire, Worcester and Stafford); Allen Simpson & Bros., 374, Deansgate, Manchester (Lancashire, North Wales and Cheshire); Cooden Beach Auto & Eng. Co., Ltd., Cooden Beach, Bexhill (South Sussex)

**SERVO
FOUR WHEEL
BRAKING**

**Models
from £285.**

IMPERIA THE



"SLIDE VALVE" CAR

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

Special Features of this week's issue

The Motor

Tues., April 26th

THE TYRANNY OF THE GREASE GUN.

Easter Experiences of the Profoundly Distasteful Task of Chassis Lubrication.

NEW FACTS CONCERNING SEGRAVE'S RECORD.

Factors which made Possible a Remarkable Speed Achievement.

A PRACTICAL "EXPLOSIVE" TURBINE.

First Description of a Novel and Promising Power Unit.

ENGINE WITH VARIABLE CAPACITY AND COMPRESSION.

New French Invention which has Proved Successful for Aero Engines and is Giving Excellent Results in Motor Car Use.

ROAD TESTS SHOWING PRINCIPAL CHARACTERISTICS.

The 14 h.p. Hillman Two-seater: The Two-litre Metalurgique Saloon.

A NEW SIX-CYLINDER OVERLAND WHIPPET.

A Conventionally Designed Car Selling as a Saloon at £275.

A NEW RANGE OF LEA-FRANCIS BODIES.

A Sports Two-seater, Sports Fabric and Coachbuilt Saloons and a Three-quarter Coupé.

A NEW FORD.

Reported Admission that Ford will Present a New Model at a Future Date.

SURBITON M.C. AT BROOKLANDS.

A NEW PORTABLE WIRELESS SET.

NEXT WEEK!

TWO OR MORE CARS PER FAMILY.

America has 2,700,000 Families who Own and Use Two or More Cars.

NOVEL CONTROL THAT MAKES GEAR CHANGING SIMPLE.

JUNIOR CAR CLUB'S BROOKLANDS MEETING.

And all the News and Pictures.

PRICE 4d.

OFFICES: 7-15, ROSEBERY AVENUE, LONDON, E.C.1

Come rain or shine

The 10/20 h.p. Salmson Coupe affords complete protection from driving rain and unrestricted enjoyment of our best summer days. It has that "nippiness" which is absent in others and which is synonymous with the name "Salmson"

EQUIPMENT.

F.W.B., Hartford's all-round, full differential, speedometer, head and side lamps, electric lighting and starting, clock, balloons. Ample room in dickey for two adults.

£225

THE COUPE AND ALL OTHER SALMSON MODELS ON VIEW AT THE SOLE LONDON DISTRIBUTORS:—

GORDON WATNEY & Co., Ltd
Brook Street, Bond Street

'Phone : Mayfair 0267-8-9.

SOLE CONCESSIONNAIRES FOR UNITED KINGDOM AND BRITISH DOMINIONS :

S.M.S. Ltd., Church Wharf, Chiswick Mall, W.4

'Phone : Chiswick 3531.

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

The Omega
Family Model.

If you want

STERLING VALUE,
ARMCHAIR COMFORT,
ECONOMICAL RUNNING,
SPEED WITH SAFETY,
FULL EQUIPMENT

PRICES.

Popular Model	..	£95
De Luxe	„	£110
Family	„	£115
Sports (water cooled)		£125

Write to-day for our Illustrated Catalogue.

W. J. GREEN, LTD.,
OMEGA WORKS, COVENTRY.

SPECIAL.

We have one or two Sports Models with O.H.V. Engines, used only for trials purposes, and in excellent condition, which we are clearing at attractive prices. Send your enquiry to-day.

Luxury Travel is not for all, in the shape of high-powered expensive cars. To the man whose funds are limited the Omega affords an inexpensive yet thoroughly reliable means of enjoying to the full all the pleasures of the owner-driver. Fitted with 8 h.p. J.A.P. engine, quarter elliptic springing front and rear, smart dummy radiator, well upholstered, roomy, and completely weatherproof, electric dynamo lighting by 5 lamps, running 50-55 miles to the gallon, and tax only £4.

then it's an

The Three-wheeler
that runs like a four.'

Chekko

Brake and Clutch Linings

N.B.—No false or exaggerated claim is made for CHEKKO.

AS a motor owner you are fully aware of the importance of Braking, but perhaps are bewildered somewhat at the claims of the various brake linings. Why not send for the CHEKKO free booklet? It will give you a great deal of information, and will settle the Brake Lining problem for you for ever.

The undoubted superiority of CHEKKO lies in the fact that alone of all brake linings it contains NO COTTON or other inflammable adulterant that can scorch or burn out. Consequently it is incomparably safer and lasts longer than any other brake lining.

Relieve your mind—use CHEKKO.
Specify *and insist on* CHEKKO through your garage or any of our stockists.

CRESSWELL'S ASBESTOS CO., LTD.

WELLINGTON MILLS, BRADFORD.
Phone: 950 Bradford. Grams: CHEKKO, Bradford.

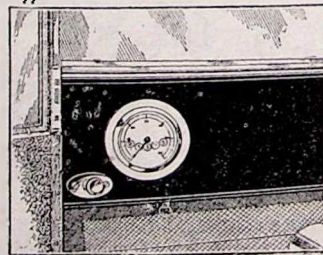
London Stores: 27, Fenchurch Street, Tottenham Court Road, W.I.
Birmingham Address: Empire House, Great Charles Street.
Manchester Stockists: Manchester Machinists Co., Ltd., 30, Queen Street, Deansgate. Phone: 3829 Central.
Liverpool Stockists: Leo Swain & Co., Ltd., 10, Colquitt Street.
Stockists for Scotland: Andrew B. Findlay, 17, Robertson Street, Glasgow.
Stockists for Ireland: E. W. Gwynne & Co., 18, Cromac Street, Belfast.

FIT YOUR AUSTIN 7

first of all with the BODELO BRAKE ATTACHMENT and then with the BODELO PETROL SAVER, they are two accessories which will make the handling of your Austin 7 very much simpler.

THE BODELO BRAKE ATTACHMENT for Austin 7 Cars enables all four brakes to be operated by the foot pedal without interfering in any way with the existing hand brake mechanism. Thousands are in use all over the country, therefore fit one to-day.

PRICE
30/-



Turn off the petrol from the dashboard, it ensures clean hands, it stops the drip from your carburettor, thus reducing the risk of a fire to a minimum.

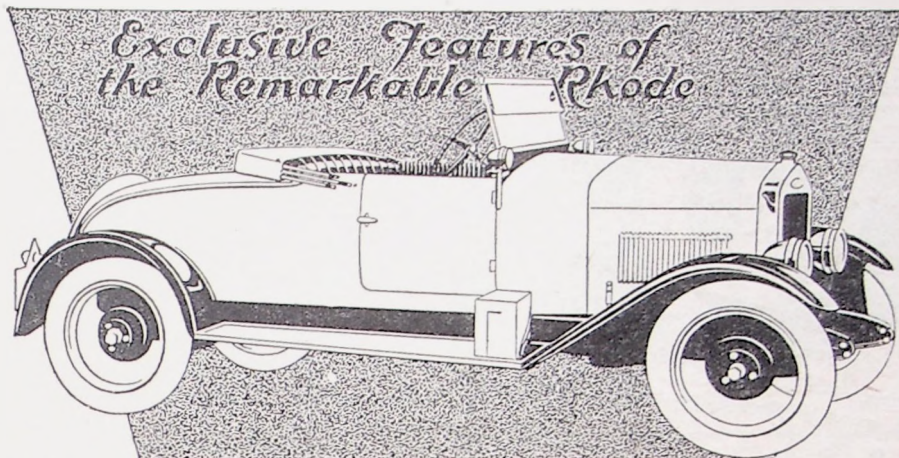
THE BODELO PETROL SAVER works automatically, you pull the control knob out to

turn it off, you push it in to turn the petrol on.

PRICE 12/6

LLOYD & DEELEY,
177, Broad Street,
BIRMINGHAM.

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.



ALL GEAR ENGINE

No fans, belts or pulleys! The all-gear engine of this famous model Rhode 10-30 is the last word in specialised car construction. In addition it embodies many new and exclusive features which has earned for this new model the character as the most modern as well as the most economical car. Fully compensating four-wheel brakes, which can automatically be adjusted from the driver's seat, while travelling if necessary, are only one of the many innovations and improvements in this new model. You really ought to inspect the Rhode before you decide — and if you do, there's no question as to your decision. 10.8 h.p. B.H.P. 30, 5 to 55 on top. 40 m.p.g. Tax £11.

CELLULOSE FINISH

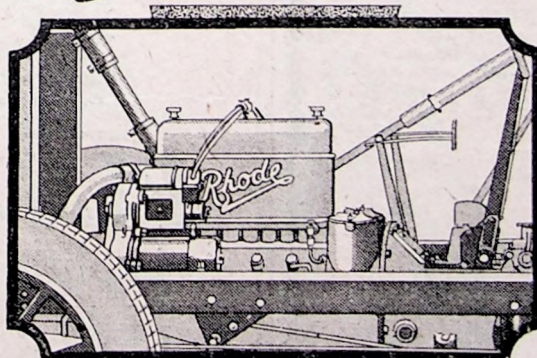
*Two-seater
with large
double dickey*

£198

*Four-five
seater model.*

*Your Agent will arrange a demonstration for you, or
we shall be pleased to forward all details on request.*

Rhode
10-30



THE RHODE MOTOR CO TYSELEY BIRMINGHAM.

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

Little Peter Pyrene's Car Fire Talks:



**"Although
this car is
insured"—**

"The Owner cannot expect to recover more than its market value. That is why Car Fires so often mean financial loss as well as the inconvenience of being stranded miles from anywhere. See that I am there to save your Car."

Get "Pyrene" from your Dealer To-day.



Write for Illustrated Folder, "Car Fires."

THE PYRENE COMPANY, LTD.,
9, Grosvenor Gdns., London, S.W.1.

Telephone: Victoria 8592.

Telegrams: Pyrenextin, Sowest,
London.

Branches: SHEFFIELD, GLASGOW
BELFAST.

Be sure it is
PYRENE.

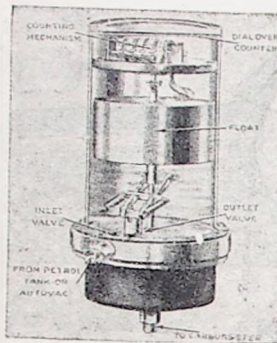
Made in our own
London Works.



Buy with
this
Guarantee
Label only.

THE "RIPPINGILLE" PETROMETER

An instrument which accurately records the amount of fuel used by any internal combustion engine.



Patent No. 241,738

PRICES:—

Type B, for use with Motor Cars { £3 10 0 Nickel-plated Finish.
£3 7 6 Brass or Black Finish.

Send for illustrated Leaflet.

**ROTHERHAM & SONS, LTD.,
COVENTRY.**

Phone: 4154.

Grams: "Rotherhams, Coventry."

**BIFF!
BANG!**

**SOMETHING MUST
BREAK SOMETIME
PERHAPS TOMORROW
GET YOUR OUTFIT
TO-DAY**

FLUXITE
-simplifies soldering

FLUXITE SOLDERING SET—complete. 7/6

All Hardware and Ironmongery Stores sell FLUXITE in tins, price 8d., 1/4 and 2/8. Another use for Fluxite—Hardening Tools and Case Hardening. Ask for leaflet on improved methods. FLUXITE Ld. (Dept. 420), Rotherhithe, S.E.18.



SECURITY FIRST



TOTAL FUNDS £33,924,094

SPECIALISES IN MOTOR INSURANCE

The Royal offers to Motorists

Absolute Security

Own Choice of Repairer

Unrivalled personal service

Equitable Loss Settlements

**IT IS NOT WHAT YOU PAY THAT COUNTS
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LIVERPOOL: NORTH JOHN STREET.		APPLICATION FORM		LONDON: LOMBARD STREET.	
Please advise your terms for Insurance under a "Comprehensive" Policy. Third Party Only					
Car, Cycle, Com. Vehicle.	Make.	H.P.	Year of Make.	Value.	Purposes for which used.
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READERS, NOTE.—It assists the small car movement and the advertiser, and ensures you prompt attention, to mention "The Light Car and Cyclecar" in your enquiries.

N SHILLINGS for

Delco-Remy Coil Ignition
Magnet Replacement Easily
Oiled. Suitable for many
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Wiring & Switch, 12/6 extra

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- ☐ Stylus T
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To Messrs. Delco-Remy & Hyatt, Ltd., 111, Grosvenor Road, S.W.1

I enclose cheque (or P.O.) for 16/- and 9d. for postage for your Model
8c Horn. My car is a
the Horn must be (state 6 or 12 volts).....

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FIT STEPNEY BRITISH MADE TWO BRITISH GRIPPERS TYRES

Immediate
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NO INCREASE
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SUPPLIED BY
ALL GARAGES.

Manufacturers:-
Stepney Tyres Ltd., Llanelly,
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The
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OUR USED CARS ARE GUARANTEED

AUSTIN, 1927, 7 h.p. Chummy, immediate delivery	£145
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A-C, 1925, all aluminium sports 2-seater	£185
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1925, 11'4 h.p. English Body 4-seater	£95
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100 OTHER BARGAINS from £25 to £250.

Easiest Deferred Terms on any make of New or Used Car.

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Sternol WW has enabled thousands of motorists to rise to great heights. It has helped in astonishing hill-climbing feats and in speed trials too, 50 world's records being broken upon it within a period of 5 months. Moreover, every drop is subjected to our voltolising process which imparts a liveliness to the engine unprocurable from any other oil. Try a 5-gallon drum, with free brass tap, and reach the pinnacle of efficient lubrication.

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A complete chart for all makes of cars will be found in "FIRST AID FOR THE CAR," a copy of which we will gladly send on application.

WWL	means	Sternol	WW	WWh	means	Sternol	WW
		LIGHT.				HEAVY.	
WWM	means	Sternol	WV	WWh	means	Sternol	
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MAKE.				SUM.			
A-C 4-cyl.	...	...	WWh	Morris	...	...	...
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Alvis	...	...	WWh	Rover 8 h.p.	...	...	...
Austin (all models)	...	...	WWh	Rover 9.20 h.p.	...	...	...
Beau	...	...	WWM	Singer	...	...	...
Citroen 7.5 h.p.	...	...	WWM	Standard 11 h.p.	...	...	...
Citroen (other models)	...	...	WWh	Standard 14 h.p.	...	...	...
Clyno	...	...	WWh	Swift	...	...	...
Ford	...	...	WWL	Wolseley	...	...	...
Hammer 8 h.p.	...	...	WWM				

Sternol WW

MOTOR OIL

IN FOUR GRADES: LIGHT-MEDIUM-HEAVY-EXTRA HEAVY 60.

Makes Engines Purr Like Pussies

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

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

ANTICIPATION

is said by some to be better than realization, but it's a poor substitute for a glorious run into the country, right off the beaten track, perhaps to be followed by a picnic amidst ideal surroundings. How long have YOU been contemplating the purchase of a car and dreaming of the health and pleasure which the possession of this fascinating form of transport can bring to you. Cut out once and for all the continuous expense of trains and buses, for neither of these will you ever own.

REALIZATION

of your dream can be made to come true very quickly indeed if you will consult

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the originators of the "ALL-IN" Easy Payment plan, which enables you to obtain immediate delivery of any make of car against a small initial payment—the balance to be spread over convenient monthly instalments.

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Those of you who are already motorists have had the memories of bygone summers to help you through the dreary winter months. The joys of the open road are fresh in your minds and you can readily picture the many glorious spots, well off the beaten track, which can only be reached by motor. Then there are the carefree trips to the sea, a plunge in the briny, followed by a delightful evening ride home, and one and all are health bringing and full of joy.

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No matter whether you are an old motorist or just about to join the ranks—a really sound tip is to call or send for a FREE copy of our new

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which fully explains how your new car would be kept by us under expert maintenance during the first few months of its life, and without cost to you.

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Liberal allowance made on used cars or motorcycles taken in part payment for new cars.

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One minute from South Kensington Station, Met., and Piccadilly Railway.
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Always insist on ELEPHANT replacements.

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

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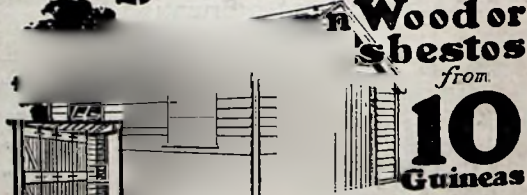
Elephant Motors Ltd.

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Anyone can erect a Thornber Garage.

All the work is done for you. Sections are sent fully framed and complete. No loose timber. You bolt section to section. The holes are bored, the bolts are supplied. The job can be finished in one afternoon. Built to last and to please. EVERY GARAGE COMPLETELY ERECTED BEFORE DESPATCHED IN SECTIONS. THIS ENSURES PERFECTION.

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You save on first cost, because Thornbers' modern machinery cuts out expensive hand labour. You get a better garage for your money. It repays cost within 9 months. You have no additional expense—all fittings are supplied.

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SEND FOR FREE FOLDER AND STATE REQUIREMENTS.

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Sankey made the first Steel Wheel - Sankey Wheels are still first
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Your Spring Run will be all the better WITH THESE ON YOUR CAR.



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*The Gaiter with the
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Splendid value, fringed, reversible, made of pure wool in a large variety of rich colours and beautiful designs. 58" x 68". 22/6

A heavier, fringed rug with different design on reverse 42/6

A particularly refined quality rug in delicate colours with silk hem. Combines the utmost warmth with least weight 88/-

When ordering state approx. colours preferred.

*If your Garage cannot supply you, send direct (cash with order).
Satisfaction guaranteed or money returned.*

*Prices for Sets, complete with
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Austin (7) .. £1 - 15 - 0

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Prices for any Car on Application.

Write to Dept. L for New Spring

Catalogue of Accessories to :-

Price 8/6

*Brings driver comfortably near to
controls. Size 17" x 17" x 4". Made
in coloured waterproof leather.
If your Garage cannot supply you send
direct (cash with order).*

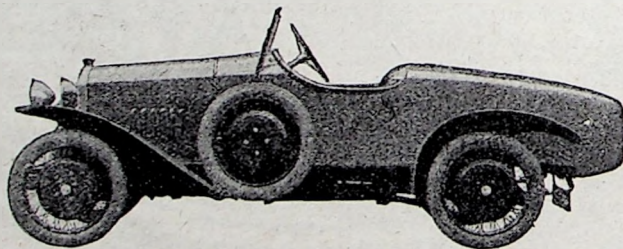
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**Deliveries have commenced of our new
Four-speed Chassis with English Coachwork**

**Other Sports
Models from
£215**



**Trial runs and
inspection at
any time.**

Three-seater Sports Body by Messrs. Jarvis & Sons, Ltd., on Z3 Chassis.

£295 complete.

Abridged Specification of Z3 Chassis:-

Engine—59 mm. x 100 mm., 1094 c.c., £9 tax, O.H.V. **Gearbox**—Four gears, 4'5 to 1 top. **Clutch**—Inverted cone, Ferro lined. **Rear Axle**—Skew-cut bevel, differential. **Brakes**—Four-wheel brakes, Ferro lined, hand brake on transmission. **Springing**—Semi-elliptic, back and front, Hartford shock absorbers. **Wheels**—Six detachable wire wheels, 710 x 90. **Equipment**—12 volt lighting and starting, clock, speedometer, dash lamp, oil gauge, hood.

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Telephone:
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DEFERRED PAYMENTS.

The Pathway of Time is studded with the Jewels of Experience



Motor Car Electrical
Equipment Manufacturers by Appointment
to H.M. THE KING.

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36 years of constant endeavour, of continual research in the laboratory, of tests in the works, and on the road, are all embodied in the present C.A.V. Batteries. The years that are past are studded with various improvements that this experience has revealed. The discerning motorist will realise what this means from his experience, not only of motoring, but of life generally, and knows that extravagant advertising and misleading statements as to capacity are not a satisfactory substitute.

We honestly believe that in the latest C.A.V. production, the multiplate battery with **THREADED RUBBER SEPARATION** in our **ALL-MOULDED** container, we have achieved not perfection but something definitely better than has ever been offered to the motoring public.

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There's a size and capacity for every car—whether British, American, French, or Italian.



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SALES & SERVICE DEPOTS AT—

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



**Save £20 to £300
Next Week Only**
£2,500 GIVEN AWAY.

TO signalise the opening of our new branches at Devonshire House and Manchester, we have decided to give away £2,500 in the form of price reductions next week.

There are nearly 100 cars to choose from, and the reductions vary from £20 to £300 per car.

That this is a genuine offer can easily be proved. That it is an offer no one can afford to miss is beyond doubt! But it is for this week only—so arrange a special visit as early as possible, or send for full particulars to-day. Exchanges and terms arranged.

Here are a few examples of the cars showing the remarkable savings obtainable:

EXAMPLES:

At Devonshire House.

	Our normal low List Price.	Amount to be deducted next week.
ALVIS, 4-seater Sports, overhauled and guaranteed	£275	£40
ALVIS, 1924, 2/3-seater, guaranteed	£195	£30
And over 20 other soiled and used Alvis models to choose from less 10 % next week.		
RHODE, 1926, 12 h.p. 4-door saloon.		
Like new. Cost £375	£245	£24
FIAT, 1926, 10/15 h.p., Limousine.		
Cost £405	£275	£25
FIAT, 1925/6, 10/15 h.p., 2/3-seater, F.W.B. Like new	£225	£20
SINGER, 1925, 10 h.p., 2/3-seater	£110	£20
RILEY, 1924, 11 h.p., 4-door, 4-str.	£160	£20

At Manchester.

HILLMAN, 1925, 10'4 h.p., 2-seater, all-weather, in beautiful condition	£145	£20
CLYNO, 1926, Saloon, special car, in new condition	£205	£30
ALVIS, 1926, Sports, 4-seater, demonstration model, as new and guaranteed	£450	£45

Also various other soiled and used Alvis models less 10 % next week as above.

This great offer applies equally at our new Devonshire House and Manchester Depots. Full particulars sent by return.

HENLYS
LONDON'S LEADING MOTOR AGENTS.

Devonshire House, Piccadilly, W.1.
Phone: Langham 3341 (10 lines).
1, 3 & 5, Peter St., Manchester.
Phone: City 9334.

IMMEDIATE DELIVERY

Ex STOCK of

JOWETT

CARS.

7 h.p. Full 4-Seater	£150
7 h.p. Long 2-Seater	£150
7 h.p. Short Chassis 2-Seater - - - -	£139

Generous EXCHANGE and DEFERRED PAYMENT facilities operative anywhere in Great Britain.

OTHER MODELS IN STOCK include:

**AUSTIN,
LEA-FRANCIS,
ROVER,
SINGER and
SWIFT.**

BESIDES

more than 100 first-class "USED CARS" offered with our unique 3 months' GUARANTEE as approved by the manufacturers.

FULL LIST GLADLY SENT ON REQUEST.



150 CARS ALWAYS IN STOCK.

NEWNHAM
MOTOR COMPANY
237-243-245, HAMMERSMITH ROAD,
LONDON, W.6.

Telephone—RIVERSIDE 4646 (Private Exchange).
Established over 30 years.

The Call of the Open Road!

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THE NO-TROUBLE CARBURETTOR

Add to the joys of this season's touring, the knowledge that your car is running at less cost and greater efficiency. Do as thousands of other motorists are doing—fit a "Solex" Carburettor. Better results are guaranteed on any car, and you can test for THIRTY DAYS FREE.

FREE TRIAL OFFER.

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

SOLEX LTD.

Director GORDON RICHARDS

SOLEX WORKS,

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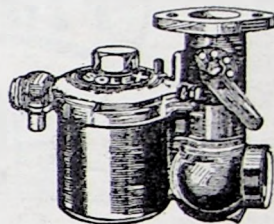
Telephones: Paddington 8621, 8622, 8623, 8624, 8625 and 8626.
Telegrams: "Solexcarb, Baker, London."



READ WHAT "SOLEX" USERS SAY:

MORRIS: "We certify that 'Solex' has improved our Morris by 20 m.p.g." A-C: "Easier starting, better acceleration, greater climbing powers, increased m.p.g." 7 h.p. FIAT: "Solex gives us 6 miles more to the gallon, much superior to the previous carburettor." ROVER 9 h.p.: "Doing about 45 to the gallon. The engine is a pleasure to drive." CLYNO: "404 miles on 10 gallons, and 248 miles on 6 gallons."

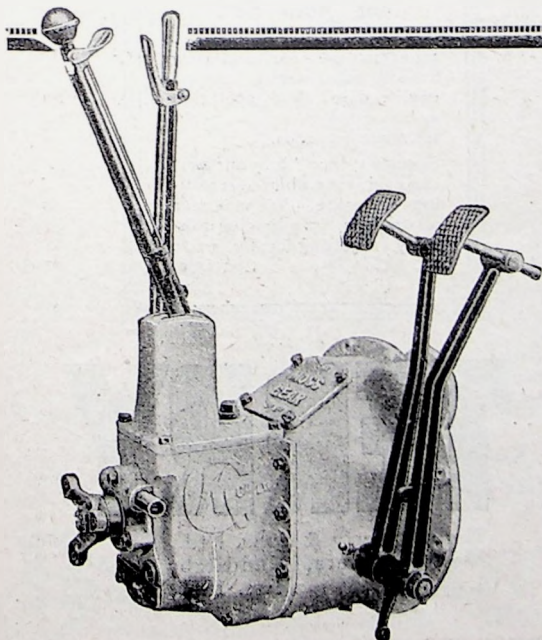
Our new and commodious premises offer ample facilities for tuning and fitting "Solex" Carburettors.



'FIT SOLEX-AND NOTE THE DIFFERENCE'

Goodall Ad.

It's the Box that Counts!



The Gear Box is the hand-maiden to the engine. No matter how well the latter may be running, if the power it generates is not transmitted smoothly, silently, and with a minimum of loss, you will never get the most satisfactory results. That is why you should pay particular care to see that the box on the car you are contemplating is one that will do justice to the engine. In this connection, you are safe if the car is equipped with

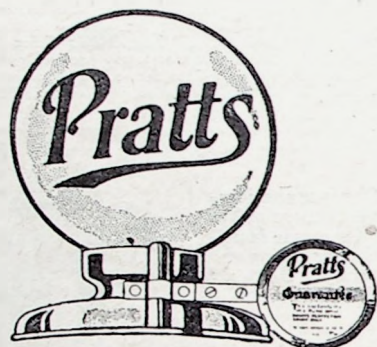
MOSS UNITS

which are justly famed for their quality and superiority of design. The type "R" Three or Four-Speed Moss Box illustrated here is the last word in gear construction. It is extremely compact, perfectly rigid, low in weight, and is characterised by a pleasingly smooth and silent running. Full details will gladly be posted on request.

THE MOSS GEAR Co., Ltd.,
Aston Manor - Birmingham.

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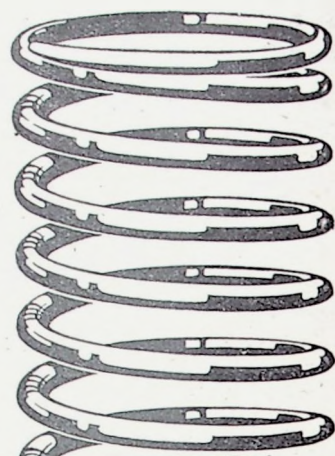
Exclusively
from the world's
richest source
of supply



Had you the choice of a good petrol with other grades added, or a pure petrol coming *exclusively* from the world's richest oil fields, which would you take?

Pratts Spirit is refined EXCLUSIVELY from the world's richest crudes. It is a pure petrol containing in correct proportions the essential elements for assuring the best and most economical engine performance. Always fill up with Pratts.

Pratts
*foremost
for thirty years*

3.45
miles a minute
on
"Aero."

The 1,000 h.p. Sunbeam on which Major Segrave put up the world's record of 207 m.p.h. was equipped with Terry's "Aero" valve springs.

5,000 miles in 3 days.

The "Invicta" car on which Miss Violette Cordery broke 5 world's records, when driving for 3 days, was equipped with "Aero" springs.

**40,000 miles on
one Aero Set.**

"I have done over 40,000 miles in one year, and they are still going strong. As my engine does good spells at 5,000 r.p.m. this fact speaks for their qualities."

Specify "Aero" on your new car engine, or when overhauling—by name. We make for all engines. If you have difficulty in getting locally, write us. List free.

TERRY

Herbert Terry & Sons, Ltd.,
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WHAT DOES IT COST YOU?

NOTHING!!

SO WHY NOT GET THEM?

EXCHANGE.

No matter where you are we will quote you a definite allowance per return for your present car or motorcycle upon receipt of full particulars. Balance over a period if desired.

DELIVERY.

We will deliver (and collect if part exchange) anywhere in England, Scotland or Wales for £2-10-0 extra.

Examples from to-day's stock:—

TWO-SEATERS.

A.B.C. 1921 Model de Luxe, sunk dickey, dynamo, detachable wheels, spare, tyres all over size, very good, all accessories, electric and bulb horns, mirror, dimmer switch, spring gauges and countless extras, upholstery, paint and new hood very good, 2 door body, an exceptionally smart, fast and sporting 2-seater, engine just completely overhauled and in perfect condition throughout. . . . £35

CALTHORPE 1923/4 Model de Luxe 2-seater, sunk dickey, dynamo, starter, double screen, plated springs, speedo, clock, screen-wiper, mirror, countless extras, 3 tyres almost new, all accessories, special A.W. hood, leather upholstery, paint and plating really excellent, tip-top mechanically, one owner, very smart, fast and reliable. Taxed. . . . £68

CALTHORPE 1931 special super sports, 12/28 2-seater with concealed dickey, dynamo, starter, detachable wire wheels, spare, 3 tyres as new, countless extras, speedo, clock, dashboard, mechanical screen-wiper, electric and bulb horns, a gauges, petrol can carrier, step mats, etc., special finish cream body with red wings and wheels, green morocco leather upholstery, good hood, double screen, 4-speed and reverse, engine recently overhauled, whole in tip-top mechanical condition, an exceptionally smart, fast and comfortable sports. Taxed. . . . £88

CALTHORPE 1924 model, 10-4 special all-weather 2-seater, 4-speed, dynamo, starter, detachable wheels, very good tyres, all extras, clock, speedo, full A.W. equipment, special all-weather hood, double screen, real leather upholstery, paint and plating really first class, in tip-top mechanical condition, an exceptionally fast and economical all-weather car. . . . £108

CITROEN 1926, 7-5 Cloverleaf 3-seater, dynamo, starter, fullest equipment, maroon upholstery, excellent hood, balloon tyres, very good, in first-class mechanical condition, very economical, reliable. . . . £75

CITROEN 1925/6, 7-5 Cloverleaf 3-seater, dynamo, starter, balloon tyres excellent, fullest equipment, speedo, full A.W. equipment, screen-wiper, electric horn, upholstery, paint and hood original and really excellent, tip-top mechanically, exceptionally smart and reliable. . . . £78

CITROEN 7, 1923/3, 2-seater, dynamo, starter, detachable wheels, spare tyres 700 x 80, good, all accessories, dashboard, upholstery, paint and hood almost unscratched, whole in very good mechanical condition, very economical, smart. . . . £55

CITROEN 1925, 7-5, 3-seater, Cloverleaf, dynamo, detachable wheels, spare balloons—3 as new, upholstery, paint and hood original and almost unscratched, many extras, full A.W. equipment, perfect mechanically, small mileage, exceptionally smart, sound and economical. . . . £75

Remember a good used car is better than a cheaply made new one.

Our Daily Lists of 100 Small Cars, all under 12 h.p., are YOURS FOR THE ASKING, together with our Brochure "Ways and Means," which explains our terms in full, from our remarkably low deposit terms of 1/10th deposit to 1/3rd or over, balance to 18 months, also full details of cars that can be bought under £100.

If it's convenient, walk in and inspect our stock—you will be astounded at the varied selection. You will not be worried to buy. Should you see nothing of immediate interest, just walk out, but come again to-morrow. There will be many more, as our stock changes daily. We cannot too strongly emphasize that you do not place yourself under the slightest obligation whatsoever, also you are perfectly safe in dealing with us through the post, your protection being our guarantee. Come and see the stock where there are

100 SMALL CARS ALWAYS UNDER £100

AND CARRYING A FULL GUARANTEE LIKE THIS

Every car is sold on the understanding that if you are not satisfied for any mechanical reason within seven days of purchase, bring it back and your money will be credited on any other car in stock.

CITROEN, 1923/6, 11-4 English 2-seater, sunk dickey, balloons, dynamo, starter, 2-door body, clock, speedo, all gauges, mechanical screen-wiper, Boyce meter, petrol gauge, taxed, right side screens, fullest equipment, recently completely overhauled, tip-top mechanically, paint and plating almost new, small mileage, remarkably well kept. . . . £78

CITROEN 7, 1923, 2-seater, dynamo, starter, all extras, balloons, 2 almost new, 3 good, speedo, screen-wiper, electric horn, petrol can carrier, full A.W. equipment, paint, plating and hood almost unscratched, hood cover and many extras, taxed December, exceptionally smart and economical. . . . £78

CLYNO, 1924, 10-8, de Luxe 2-seater, double sunk dickey, dynamo, starter, balloons, 2 as new, all extras, double screen, clock, speedo, special leather-cloth hood, rigid side screens, paint and plating almost unscratched, perfect mechanically, very smart and economical. . . . £78

CLYNO, 1925/6, 10-8, 2-seater, sunk dickey, dynamo, starter, detachable wheels, spare balloons, 3 as new, speedo, clock, screen-wiper, upholstery, paint and plating as new throughout, recently overhauled, tip-top mechanically, small mileage, fast, roomy, right hand gear change. . . . £88

CROUCH, 11-9, 1923 Anzani (4-cylinder water-cooled) de Luxe 2-seater, double sunk dickey, dynamo, starter, balloons, 2 as new, all extras, double screen, clock, speedo, tyres, all accessories, real leather upholstery, paint and plating excellent, 3-piece screen with special A.W. hood, recently overhauled, first-class mechanically throughout, exceptionally fast, smart and roomy. . . . £58

HANDS, 1924, 9-5 de Luxe, 2-seater, double sunk dickey, dynamo, starter, countless extras, paint and plating original, first-class mech. . . . £75

HANDS, 1924/5, 10 h.p. de Luxe 2-seater, double sunk dickey, dynamo, starter, many extras, paint and plating first-class, very sound, smart and reliable. . . . £75

LAONDA, 1923, 11-9 de Luxe 2-seater, sunk dickey, dynamo, starter, good tyres, taxed. . . . £68

RENAULT, 1923, 8-3 de Luxe 2-seater, sunk dickey, dyn., starter, P.W.D., small mileage. . . . £98

SALMON, 1923/4, English body, 9-3 de Luxe 2-seater, double sunk dickey, dynamo lighting, all accessories, excellent mechanically. . . . £65

SALMON, 9-5, 1924, Model de Luxe, English 2-seater, sunk dickey, dynamo, paint and plating original and almost unscratched, one owner, small mileage, first class throughout. . . . £68

SALMON, 9-5, 1923/3, de Luxe, English 2-seater, sunk dickey, dynamo, paint and plating perfect, tip-top mechanically, exceptionally fast. . . . £58

SALMON, 1924, special sports, Cloverleaf, 3-seater, dynamo, starter, countless extras, upholstery, paint and mechanically as new. . . . £88

SINGER 10, 1923/4, de Luxe 2-seater, starter, all accessories, excellent condition. . . . £68

SINGER 10 (C.P. Model), 2-seater, 4-cyl. O.H.V. engine, 3-speed and reverse, dynamo, all accs., full equipment, tip-top mechanical condition, comfortable and reliable. . . . £58

STANDARD, 1924/5, 11-4, Canley 2-seater, double sunk dickey, dynamo, starter, paint and plating first class, many extras, tip-top mechanically. . . . £58

STANDARD, 11-4, 1923/4, de Luxe 2-seater, dynamo, starter, full equipment, tyres very good, countless extras, perfect mechanically. . . . £78

STANDARD, 1920/1, 9-5, full drop head Coupe, dynamo, starter, many extras, paint and mechanically excellent, exceptionally sound, sturdy and reliable. . . . £53

SWIFT, 1923/4, 8-9, de Luxe 2-seater, double sunk dickey, dynamo, starter, all accessories, many extras, tip-top mechanically. . . . £78

TALBOT, 8/18 (Tax £2), 1923/3, de Luxe 2-seater, sunk dickey, dynamo, good tyres, paint and plating almost unscratched, full equipment, tip-top mechanically. . . . £73

TALBOT, 1923, 8/18, de Luxe 2-seater, dynamo, starter, good tyres, all accessories, recently overhauled and perfect mechanically, upholstery, paint and plating excellent, exceptional. . . . £38

WOLSELEY, 1923/4, 11 h.p., 2-seater, double sunk dickey, dynamo, all accessories, first class mechanically and really sound. . . . £68

All cars offered subject to being unsold.

FOUR-SEATERS.

ALBERT, G3, 11-9, 1923/3, 4-speed, saloon type all-weather 4-seater, dynamo, starter, 3-door body, 4 sliding windows, 4-piece V screen, arm-chair front seats, adjustable, real leather upholstery, paint and plating almost unscratched, aluminium bonnet, countless extras, including speedo, screen-wiper, all gauges, large and rigid, 2 spare, in first class mechanical condition throughout, a remarkably cheap, roomy and smart family car. . . . £68

AUSTIN 7, 1923, Chummy, dynamo, starter, 3 tyres almost new, all accessories, screen-wiper, speedo, all gauges, rigid side screens, fullest equipment, small mileage, excellent throughout, very sound and economical. . . . £90

CALCOTT, 1923/3, special saloon type all-weather 4-seater, dynamo, starter, detachable wheels, excellent tyres, real leather upholstery, extra wide 3-door body, winding windows, clock, speedo, screen-wiper, adjustable seats, mirror and countless extras, paint and plating almost unscratched, really perfect mechanically, exceptionally smart, very low and distinctive. . . . £58

CITROEN, 1923, 11-4, 3-door saloon, dynamo, starter, sliding windows, blinds, screen-wiper, mirror, interior lighting, many extras, Bedford cord upholstery, bodywork leather with black wings and top almost unscratched, good tyres, tip-top mechanically, exceptionally smart, roomy and economical. . . . £88

CITROEN, 1923/4, 11-4, de Luxe, 4-seater, dynamo, starter, fullest equipment, many extras, first class mechanical condition, 4/5-seater. . . . £75

CLYNO, 1926/6, 2-door, 4-seater, 10-4, dynamo, starter, all extras, fullest equipment, paint and plating really excellent, tip-top mechanically. . . . £95

GWYNE, S. Chummy, 1923/1, dynamo, starter, speedo, paint and plating excellent, exceptionally sound, smart and economical. . . . £78

RHODE 9, 1924, light 4-seater, dynamo, starter, all accessories, original paint, plating and upholstery, in perfect condition throughout. . . . £58

ROVER 9, 1925, 4-seater, dynamo, starter, full equipment. . . . £58

ROVER 8, 1924, de Luxe, 4-seater, dynamo, starter, all extras, leather upholstery, tip-top mechanically. . . . £68

SALMON, 1924, 9-5, light 4-seater, dynamo, all accessories, tip-up front seats, hood and paint exceptionally good, exceptionally good mechanical condition. . . . £68

SINGER 10, 1924/5, de Luxe, 4-seater, 4-seater, dynamo, starter, many extras, 3-door body, adjustable front seats, upholstery, paint and hood as new, remarkably good mechanically. . . . £58

SINGER 10, 1923/4, de Luxe, 4-seater, dynamo, starter, all accessories, paint and plating original, good, tip-top mechanically. . . . £78

SWIFT, 1924/5, de Luxe, light 4-seater, 8-9 (Tax £2), dynamo, starter, all extras, tip-top mechanically. . . . £58

TALBOT, 10-5, 1923/4, de Luxe, 4-seater (Tax £2), dynamo, starter, all extras, full equipment, tip-top mechanically. . . . £88

WOLSELEY, 1923 model, 11 h.p., full 4-seater, dynamo, starter, countless extras, tip-top mechanical condition throughout. . . . £98

All cars open to A.A. or R.A.C. examination willingly.

NO MATTER WHAT YOUR PROPOSITION
OR
WHERE YOU ARE
WRITE, 'PHONE, or CALL
AT

30-32, High Street,
Wandsworth, S.W.8.

(Next to the New Town Hall.)
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Hours 8.30 to 8.0. (Except Sundays)
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Benmots

THE CLEARING HOUSE FOR SMALL CARS

All Buses and Trams pass the door.

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

*the Diary
of an
Austin
Owner*

PRICE of
TOURER
at Works :

£145

Saloon £165

**Waste of time searching
for a better light car, for
IT CAN'T BE FOUND!"**

A friend of mine who, in 1925, followed my own example and bought an Austin Seven, tells me he has used the car every day and in all weathers, and has been absolutely delighted with its performance. But, being a restless soul, he recently felt he must have a *new* bus, and started out once more to visit showrooms, absorb catalogues, make trial runs, etc. He now admits all this was so much wasted time and energy, save that it proved to him afresh that the "Seven" is still easily the best small car in the world. Not one of the cars he investigated could offer the same fine performance at the same moderate price. However, he's got his new bus all right. Oh, yes, took delivery of an Austin Saloon only a couple of days ago!

The

**THE AUSTIN MOTOR CO., LIMITED,
LONGBRIDGE, BIRMINGHAM.**

LONDON SHOWROOMS - 479-483, OXFORD ST., W.1
(near Marble Arch.)



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

The Light Car and Cyclecar

AN IMPOSING MONUMENT.

Erected to commemorate the thousandth year after his death, this bronze statue of King Alfred the Great stands in Northgate, Winchester, the one-time capital of the Kingdom of Wessex over which King Alfred ruled from A.D. 871 to his death in A.D. 901.



NOTES, NEWS & GOSSIP *of the* WEEK

Village Saved from Buses.

The proposed bus service to Downe, Kent, the prettiest, sleepest village near London, has been abandoned. The narrow, winding roads were regarded as being unsafe for buses and there was much local opposition.

Interesting Traffic Figures.

During the 10 days prior to the beginning of the Easter holidays, the Automobile Association issued to members holiday routes aggregating 20,000,000 miles. This figure indicates an increase of over 30 per cent. on the special routes issued during the same period last year.

This Week.

That the need for gear-changing could be practically eliminated by the use of a supercharged engine is one of the interesting suggestions made in an article entitled "Supercharging or Gear-changing?" which appears in this issue. "A History of Screw-threads" will make a direct appeal to novice and expert alike, as it deals with a little-known subject, whilst, in addition, we are able to give the first descriptions of a very interesting new sports car, a new small saloon and a novel three-wheeler which strikes a new note.

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LIGHTING-UP TIMES (Rear Lamps) for Saturday, April 30th.

London	8.49	Edinburgh	9.17
Newcastle	9.07	Liverpool	9.06
Birmingham	8.59	Bristol	8.59

Moon—New, May 1st.

Another New Cyclecar?

We learn on good authority that a very unconventional Belgian cyclecar will probably be placed on the British market in the near future, but we are unable to give any details of the machine at present.

Gainsborough Bridge Tolls.

A scale of charges has been sanctioned by the Gainsborough Urban Council in connection with the Gainsborough Bridge Bill, which is now ready for presentation to the House of Commons. The proposed toll charges for motor vehicles will be 1s. 3d. or 2s. for cars, according to seating capacity, and 6d. for three-wheelers.

Next Week.

Our series, "Light Cars in the Making," will be continued next week, when an instalment dealing with stamping, drop-forging and presswork practice will appear. "Why Crash Second?" is the title of an article in which the writer, an old hand, will explain, in simple language, how expert gear-changes can be made on any car. The possibilities of steam light cars will be discussed in an article entitled "Why Not Steam?"

Glastonbury Motor Park.

We learn that the trustees of Glastonbury Abbey, after careful consideration of the proposals, have decided definitely against allowing car-parking on the Abbot's Kitchen site. An alternative suggestion for a motor park to the east of the ruins has been put forward. The Abbot's Kitchen is a quaint building which dates from A.D. 1420.

Important Salmson Success.

Salmson cars ran first and second in the 1,100 c.c. category of the Targa Florio race, which was held last Sunday. This is one of the most gruelling events of the year.

The Deserted Village.

As a result of the opening of the new Farnborough by-pass road the local traders state that the village is now deserted, that takings have dropped 75 per cent. and that bankruptcy seems almost inevitable. At a recent council meeting further demands were made for new by-pass signposts indicating the old main road and the village.

The A.A. in Essex.

For the convenience of A.A. members residing in Essex the Automobile Association has opened an office at Chelmsford. The address is: Fanum House, London Road, Chelmsford. Telephone, Chelmsford 556-557. Telegrams, "Fanum, Chelmsford."

Aldershot Tattoo.

At the request of the authorities concerned the R.A.C. is again undertaking the car-parking arrangements at the Aldershot Searchlight Tattoo, which will be held on June 14th to 18th. The prices of admission to the various car parks will vary from 10s. to 2s. 6d., and space can be booked in advance by application to the secretary, The Royal Automobile Club, Pall Mall, London.

Disabled Drivers' Rally.

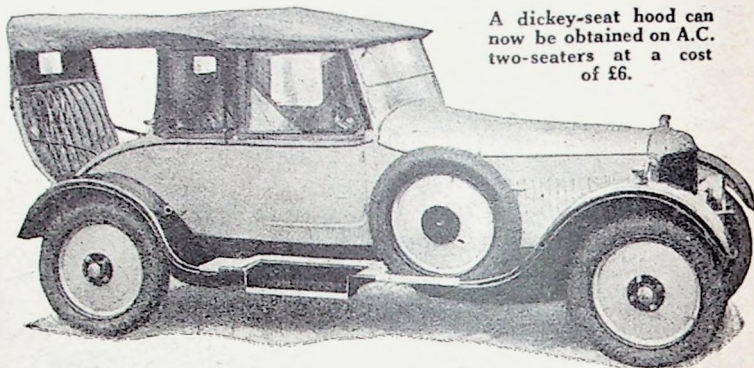
Some very good demonstrations of driving skill were given at the rally of disabled drivers held on Saturday last at Coombe Bank, Sundridge, near Sevenoaks. The organization was by the Disabled Drivers' Motor Club, and there were four events—balloon bursting, ring spearing, a garaging test and a starting-and-stopping race. The last two were particularly interesting and certainly afforded one an opportunity of ascertaining the driver's ability to handle his car in spite of his disablement. The starting-and-stopping race provided some thrills and showed that in emergencies the drivers were quite able to control their cars safely.

Vicar and Motorists.

Stating that he sees nothing wrong in Sunday motoring, the Vicar of Tarrvin invites motorists to take a run to his church to attend Divine Service. Cars may be parked in the vicarage drive and the vicar has placed his garden at the disposal of motorists who may wish to take a picnic lunch after the service.

Market for British Cars.

The Bolivian Government has planned to build 2,000 miles of roads throughout the Republic this year with a view to opening up the many fertile agricultural regions. The demand for cars is expected to increase very considerably and there should be a good opportunity for British makers to obtain a footing.



A dickey-seat hood can now be obtained on A.C. two-seaters at a cost of £6.

New Race Track.

The "Nurburg Ring," in the Eifel district of Germany—the natural race track for cars—is acting like a magnet to motorists. The track is not yet finished, however, and the numerous visitors who are keen on trying a speed burst over the 18-mile "Ring" are not yet able to do so, says Reuter. The builders and engineers announce definitely that the course will not be ready until the beginning of June.

Normandy Fetes.

The celebrations of the 900th anniversary of the birth of William the Conqueror will take place in Normandy on July 3rd and 4th next, one of the items being a pageant representing the return of the Conqueror to his birthplace. There will also be a religious ceremony conducted by the Bishop of Bayeux at Falaise, whilst M. Prentout, the eminent French historian, will lecture on the life of the Conqueror. Other events will be held at Rouen in July.

Scottish Six Days.

Mr. Horace Nelson, secretary of the Edinburgh and District Motor Club, Ltd., points out that the club hopes to have a fair number of cars in its Six Days' Trial, which starts on July 25th. Entries are restricted to cars having engines of not more than 2,000 c.c., and entrants must be, inter alia, amateur owner-drivers and members of the promoting club.

A.C. Service Depot.

The service depot of A.C. (Acedes) Cars, Ltd., successors to A.C. Cars, Ltd., will be removed to Ferry Works, Thames Ditton, Surrey, after April 30th, but for the convenience of customers in the North London area arrangements have been made for their requirements to be attended to by trained mechanics on the premises of Gladwell and Kell, Ltd., Ampton Street Garage, Gray's Inn Road, London, W.C.

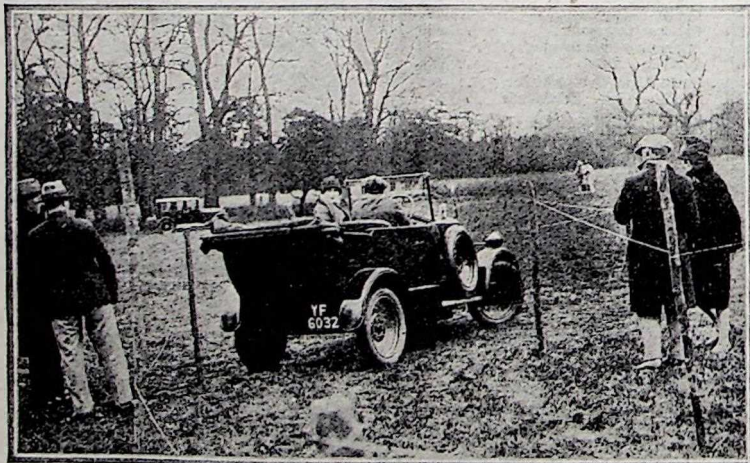
International Alpine Trial.

The Alpine Trial organized by the Austrian Automobile Club will start this year on June 5th. The regulations require that a relatively high and unvarying speed shall be maintained over a course of about 1,875 miles. This trial is of a somewhat severe nature, as no work on the cars is permitted during the whole course of the trial and the route is partly over difficult roads.

Austin Revs. and m.p.h.

An interesting table is given in the April issue of the *Advocate* showing the r.p.m. of Austin engines at various speeds on the different gears. They are:—

Engine speed.		Miles per hour.			
R.p.m.	Top.	2nd.	3rd.	4th.	1st.
100	1.53	.84	...	...	.47
200	3.06	1.68	...	...	.94
300	4.59	2.52	...	...	1.41
400	6.12	3.36	...	...	1.88
500	7.65	4.20	...	...	2.35
600	9.18	5.04	...	...	2.82
700	10.71	5.88	...	...	3.29
800	12.24	6.72	...	...	3.76
900	13.77	7.56	...	...	4.23
1,000	15.34	8.44	...	...	4.7
2,000	30.68	16.88	...	...	9.4
3,000	46.02	25.32	...	...	14.1



DISABLED BUT ABLE!

Although lacking limbs the competitors in the Disabled Drivers' M.C. rally showed that they were perfectly capable of handling cars in difficult situations.

A City Roundabout.

The London Traffic Advisory Committee has suggested a one-way traffic scheme in the City in the neighbourhood of the Bank and the Mansion House. It is suggested that Queen Victoria Street, from the Mansion House to Queen Street, should become a one-way thoroughfare, and that traffic should be allowed to travel only one way in Poultry, thus vehicles will be made to circulate round the block of buildings forming a triangle at Queen Victoria Street, Queen Street and Poultry.

A.A. Questionnaire Results.

Anticipating the introduction of the Road Traffic Bill, the Automobile Association recently took the individual views of motorists throughout the country on several important points affecting their interests. Replies were received from nearly 100,000 motorists. Of this number 92 per cent. declared for the abolition of the 20 m.p.h. speed limit and 81 per cent. favoured the abolition of 10-mile limits. In reply to the question as to the fairest method of motor taxation, 97 per cent. of the replies were definitely in favour of a petrol tax in place of the present system.

J.C.C. Spring Meeting.

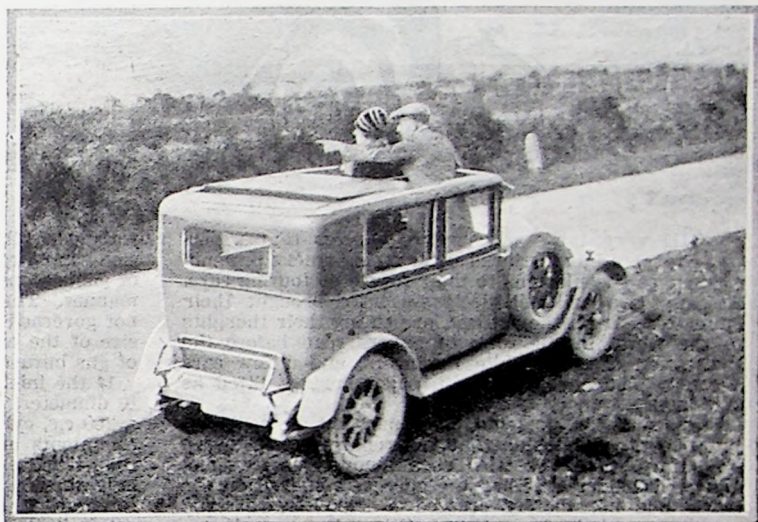
The Junior Car Club announces that over 70 entries have been received for the Spring Race Meeting which will be held at Brooklands to-morrow, April 30th. There are six races down on the programme, and two of these should prove of more than usual interest. They are the disabled drivers' handicap and the Junior Grand Prix. In the last-named race cars will have to cover a special short course of 1½ miles per lap 15 times, and there will be several bends to be negotiated. For this particular race, 21 entries have been received, amongst which are some of the world's fastest light cars. Racing commences with the Novices' Handicap, whilst the Junior Grand Prix is timed to start at 3.45 p.m.

Free Trojan Maintenance.

In order to prove their claims that the Trojan is the cheapest car to maintain, Leyland Motors, Ltd., have taken a bold step in undertaking to all purchasers of Trojans that for the first 5,000 miles the cost of running shall be limited to petrol, oil and cleaning, the maintenance which what may be regarded as an average year of running being undertaken entirely free of charge by the company.

New American Bridge.

Work on the longest concrete highway bridge in the United States has just been commenced and will be completed in a record time of one year. The structure will be 5 miles in length and will be built across Lake Pontchartrain, linking New Orleans with the Mississippi Gulf coast. The estimated cost of the bridge will be £1,140,000, and it is expected that 625,000 cars will use the bridge during the first year.



THE CONNING
TOWER.

One of the advantages of the sliding roof on the Imperia Saloon is that it provides excellent facilities for admiring the scenery.

Horstman Wins.

In our report of the B.A.R.C. Easter meeting Mr. G. A. Wadham (Horstman) was given as having come in second in the first race. Actually he won at a speed of 82.67 m.p.h.

"The Petrol Engine."

One of the interesting facts mentioned in "The Petrol Engine" (Temple Press Ltd., 3s. 6d.) is that patent records show that several practical forms of gas engine were invented between 1830 and 1840. These, however, did not create much interest or receive any commercial support.

New Sports D'Yrsan.

A new D'Yrsan three-wheeler, to be known as the popular sports model, is being introduced to the British market by the D'Yrsan concessionaires, Messrs. Metro Motors, 45, Newman Street, London, W.1. The new model has been produced to meet the demand for a three-wheeler selling at a lower price than the existing D'Yrsan models, and it is really a modification of the standard sports type. The chassis, in fact, is identical except that 700 mm. by 80 mm. tyres are fitted in place of the 710 mm. by 90 mm. size. It is in the body and equipment that the difference is noticeable. Sheet metal, painted in any one colour to choice, is used in place of mottled aluminium for the body, whilst no hood nor spare wheel is supplied.

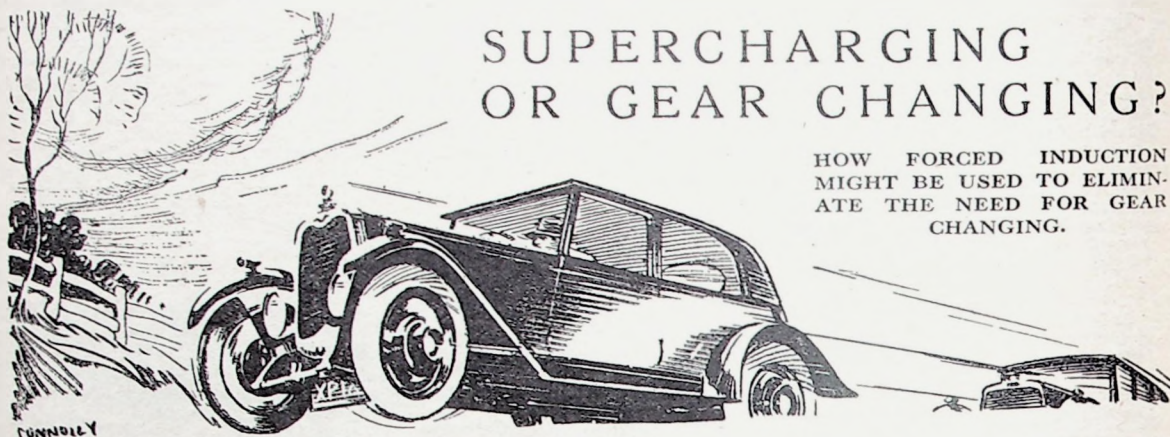
In other respects the standard and popular sports models are practically identical, the main features of the popular type being:—972 c.c. four-cylinder o.h.v. Ruby engine, three-speed-and-reverse gearbox, single-plate clutch, 10-in. front-wheel brakes, Vee screen and Lucas lighting. The price of the new model is provisionally fixed at £148.

n13



IN DEEP
WATER.

Many competitors failed to get through this watersplash in the Chelmsford M.C. and L.C.C. Reliability Trial last Sunday. The picture shows a Morgan being salvaged.



SUPERCHARGING OR GEAR CHANGING?

HOW FORCED INDUCTION
MIGHT BE USED TO ELIMINATE
THE NEED FOR GEAR
CHANGING.

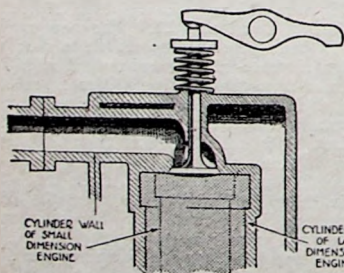
THE very large measure of success that superchargers have enjoyed upon racing tracks prompts one to speculate as to their future on touring cars. Already two brilliant designers have brought their minds to bear on the subject, presenting their thoughts to the world in the form of papers read before the Institution of Automobile Engineers, and a few cars are now being produced with superchargers fitted as standard.

Despite these portents, we must not immediately jump to the conclusion that superchargers will sweep all before them, for with such innovations we must always consider whether the success achieved on the track has not merely created a transitory demand among the kind of sporting owners who are only too ready to copy blindly the latest racing fad. That this possibility is not one to be overlooked is proved by the fact that, before now, features which have been incorporated in a successful racing car have then been built into a number of sports cars for no better reason than that the public demanded them—and with no benefit in performance.

Types of Superchargers.

The subject of superchargers must be considered under two distinct headings. We may either discuss the type of blower which is fitted to ensure that the engine inhales a full charge of gas—in which case the word "supercharger" is not an altogether happy description—or we may deal with the oversize instrument that puts the gas into the cylinders under pressure and, in effect, overfills them.

The former device is the one that is more likely to



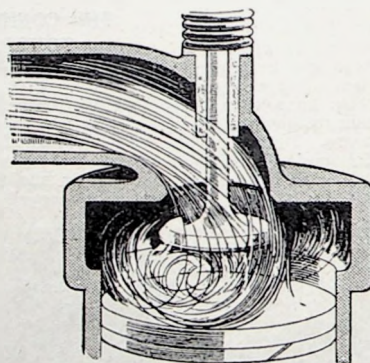
The dimensions of the inlet valves and ports are not necessarily governed by the bore of the cylinder. Small valves give increased turbulence.

achieve in the future the successes sometimes predicted for all superchargers; the other is permissible only in exceptional circumstances, because of certain inherent drawbacks.

Let us consider the thermo-dynamics of an engine and its arrangement. It will be realized that the size of an inlet pipe and the diameter of its valve bear but little relation to that of the cylinder. They are more directly governed by the power output of an engine,

for, when all is said and done, the problem of propulsion simply resolves itself into taking a certain quantity of gas and passing it through an engine in an efficient manner. The power that is obtained at the flywheel is not governed in more than a very slight degree by the size of the engine, but rather depends on the amount of gas burned.

If the inlet pipe under consideration is, say, 1½ ins. in diameter, and, with its valve, is mounted on top of a 250 c.c. cylinder, the actual power developed will, to all intents and purposes, be neither less nor greater than if it were mounted upon a 500 c.c. cylinder. The only difference will be that the smaller engine will have to rotate at exactly double the speed of the larger to attain its output of power.



Fast whirling gases give rise to rapid combustion and increased engine efficiency. Supercharging aids turbulence.

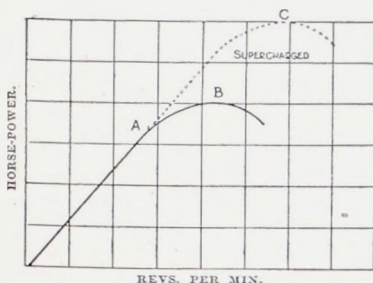
The natural question that flashes across the mind is: Why, then, have large engines? Why not fit even heavy touring cars with 500 c.c. power units? The answer is obvious after a little thought. There must, of course, be a limit to the speed at which an engine can run. The rubbing speed of the bearings and the speed at which the piston can move up and down the cylinder walls impose a limit. It is true that the limit is not reached except in racing practice, but designers are even then forced to restrict valve and inlet-pipe diameters, because there are such matters as comparatively slow running and efficiency to be considered.

If, for a moment, we imagine the inlet pipe and cylinder as parts of a suction pump, we see that the speed of the liquid in the inlet pipe is governed by three factors—the speed of the piston, the bore of the cylinder and the diameter of the pipe. Should the cross-section of the inlet pipe be equal to 1 sq. in., the piston-top area 4 sq. ins. and the piston speed 1,000 ft. per minute, then the speed of the liquid moving down the inlet pipe will be $\frac{4}{1} \times 1,000 = 4,000$ ft. per minute. As any increase in piston speed causes four times that increase in the speed of the liquid in the inlet pipe, the

natural tendency would be to make the inlet pipe as large as possible to enable the maximum piston speed to be obtained.

With an engine sucking in gas the same laws hold good; consequently, the designer has the same desires. Why, then, do we not find much larger valves in use, for it would easily be possible to make an engine in which the valves were nearly the same diameter as the piston?

In the example given we see that the liquid enters the cylinder at four times the speed of the piston, and in so doing sets up a swirling action. This motion, which is technically known as "turbulence," is essential to the efficient working of an internal-combustion engine, for the fast whirling of the gases past the sparking

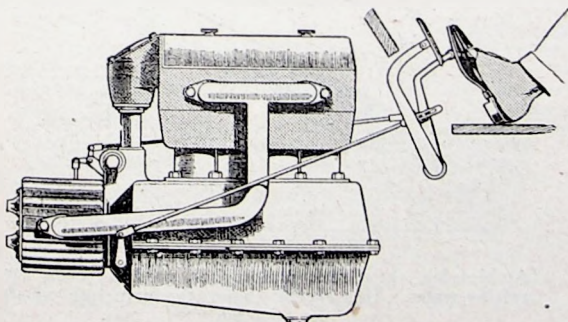


An increase in power output, as shown by the dotted line, can be obtained by the use of a supercharger.

plug greatly increases the speed of burning and makes the expansion more rapid and powerful. Any considerable increase in the size of the valves, in relation to the cylinder dimensions, minimizes this swirling; furthermore, as we have already suggested, considerations of easy starting and good slow-running impose a similar limit in valve and inlet-passage sizes, for if the gas column in the inlet pipe is slowed below a certain limit, the air will not carry the petrol vapour and the mixture will be patchy.

It now becomes evident that, although the valve and inlet passage sizes really control the power output, a definite limit is placed upon them by the dimensions of the cylinder.

The size of a valve being, then, limited, the amount of gas that can pass through it is also limited, and once a certain critical speed is reached no more gas can be sucked into the cylinder. Up to a certain point (A in the illustration of a power curve) an increase in speed brings a proportional increase in power, but after this point we approach the limit that the inlet pipe im-



A suggested supercharger layout in which the blower is brought into action when the full-throttle position is reached.

poses, and further increases in speed only bring very slight improvements in power output. At point (B) the limit is reached, and further speed brings a drop in power, because of the increased friction and the inability of the cylinder to inhale more gas. Up to point (A) each inlet stroke fills the cylinder, but after this the cylinder is only partially filled.

Now, if the engine were fitted with a supercharger extra gas could be forced in, and the increase in power

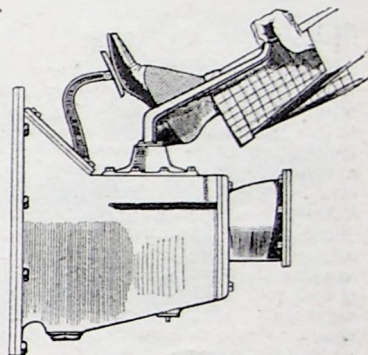
would remain proportional to the speed for a much greater length of time. The peak of the curve would then be the point (C).

Let us now view a somewhat revolutionary suggestion. As previously stated, the power developed is almost exactly proportional to the amount of gas inhaled. Thus, if we have two cars of equal weight, one propelled by a two-litre engine geared 2 to 1, and the other by a one-litre engine geared 4 to 1, both would generate an equal tractive effort at a given speed. Should an increase in tractive effort or draw-bar pull be required by the driver of either vehicle for, say, hill-climbing he would have to change down.

If the driver of the one-litre car engaged a 6 to 1 gear he would be allowing his engine to burn 50 per cent. more gas per mile, and the tractive effort would be proportionately increased.

The outstanding advantage of a supercharged engine, as demonstrated by the power curve, is its greatly increased flexibility. Both it and a standard engine should be capable of generating power from 400 revolutions, but while the non-supercharged unit

It is claimed that gear changing, always a trouble to novices, could be eliminated by the use of a clutch-controlled supercharger.



reaches its peak (point B in the power curve) at, say, 4,000 revs. per minute, the supercharged unit may well be able to operate at 6,000 r.p.m.

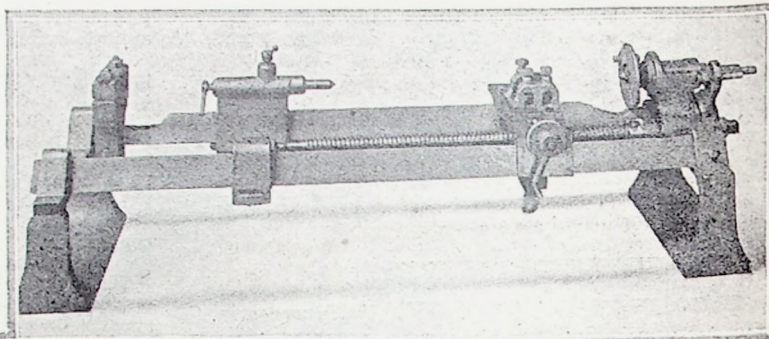
Let us suppose that the non-supercharged unit were geared 4 to 1 on top, the gearbox providing three other speeds, the ratios of which were 6, 10 and 15 to 1 respectively, and that the supercharged engine were mounted in a similar chassis and geared 6 to 1, it may be assumed that the maximum speeds of the two cars would be equal, but the slow running of the supercharged car would be equivalent to that of the other machine in third gear. As it is geared 6 to 1, its acceleration and hill-climbing capacity would again be equal to that of its companion in third gear. If a supercharged car were fitted with a two-speed-gear set giving a 6 to 1 top and a 15 to 1 bottom, it would be able to do exactly the same things as the four-speed non-supercharged car, but there is no doubt that it would be infinitely more pleasant to drive.

The driver caught in traffic, where he would normally be running in third gear, would be able to run just as slowly as the conventional machine and yet remain in top gear. The acceleration of the two cars would be equal. Once on the open road the supercharged car would not be one whit slower than the non-supercharged machine; but a stiffening up in gradient that would force the driver of the latter car to change down would not affect the supercharged car.

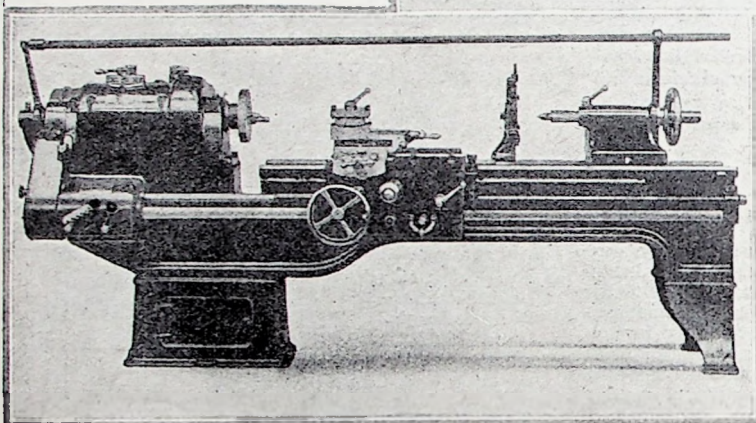
The supercharged car would be rather more extravagant in fuel consumption, but even this defect could be overcome largely if the blower were connected to the engine by means of a clutch, which would come into operation only when the blower—normally out of action—was required. If the supercharger clutch control were so connected with the accelerator that the supercharger came into action only at full throttle it is not improbable that the car would actually be more economical than the types now in common use. This arrangement is, in fact, adopted on one supercharged car of Continental manufacture.

A HISTORY OF SCREW-THREADS.

A screw is such an everyday article that few people have ever thought to enquire into its history, but the subject is one of very great interest and takes us back to the days of the pre-Christian era. The true origin of the screw cannot be traced, but in this article all that can be gathered from authoritative books of reference is collated and set forth in detail.



(Above) By courtesy of the Science Museum, London, Henry Maudslay's screw-cutting lathe, now in the Museum, and (left) a modern all-gear Selson lathe. The basic principle of these two tools is similar.



coarse thread in wood, either right or left-hand, whilst in 1701 Plumier used a pointed tool for cutting screws in metal. A diagram of the type of lathe used by him is illustrated on these pages. In 1729 Monsieur Grandjean invented "a lathe in which, without the common art, all sorts of screws and other curved lines can be made," whilst another and more elaborate screw-cutting lathe, built by an amateur,

Mr. Healy, is described in Tilloch's "Philosophical Magazine" of 1804.

There is evidence, however, that lathes were known and used in the very early days of the Christian era, as a lathe is mentioned by Diodorus Siculus as having been invented by Talus, and the Roman historian, Pliny, who was born A.D. 53 at Verona, ascribes the invention of a lathe to Theodorus of Samos and names one Thericles as a skilled turner.

It is doubtful whether any mechanical device has the same sphere of usefulness as a screw; in fact, it is not too much to say that, had screws never been invented, machinery as we know it could never have existed, because every machine and almost every article in common use requires screws either in its own construction or during the course of its manufacture.

To whom belongs the honour of having invented or discovered this all-essential device? We do not know. The true origin of the screw-thread is hidden in the mists of remote antiquity.

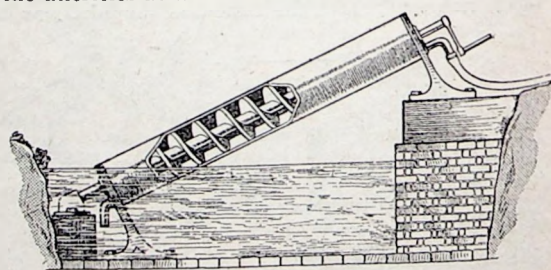
The early Greek mathematicians were familiar with screw-threads, and Archimedes—who lived 287-212 B.C.—invented a water-screw which acted as a kind of pump. We know also that screws were used by the ancient Romans, as they have been found in ruins of Roman buildings.

In the 4th century, Pappus, a Greek mathematician, described a method of winding an inclined plane around the circumference of a cylinder so as to form a helix, but, so far as can be discovered, he did not proceed with the idea to the extent of making a screw.

Early Screw-cutting Lathes.

Before going farther it will be interesting to endeavour to discover the origin of the word "screw." In old English it was spelt "scruue," this word being derived from the old French "escoure," but Professor Skeat, following Diaz, finds the original in the Latin word "scrobs," which means, in low Latin, holes made by pigs' snouts, these holes being, roughly, screw-shaped. It is interesting also to learn that in the early days screws were cut in a lathe, but, of course, no attempt was made at working in metal, only wood being employed.

The earliest screw-cutting lathe of which we have any record was used by Jacques Besson in 1569. This machine was capable of cutting any comparatively



Archimedes, the Greek philosopher, used a screw for raising water. This sketch shows the principle which he adopted.

It was not until the 17th century that the use of screws became very common in engineering work, but late in that century Anthony Robinson, at the Soho works, Birmingham, used the inclined plane and cylinder method of Pappus to cut a triple-threaded screw on a steel shaft, 6 ins. in diameter and 7 ft. long.

A strip of paper was cut to enclose the blank and was marked off with oblique lines representing the inclination of the screw threads corresponding to the pitch. Centre-punch marks were made on the lines, after which the paper was removed and the punch marks joined by a line filed in the steel. The threads

were then cut by the laborious method of using a hammer and chisel for "roughing out," after which a file was used to obtain a smoother finish, but the final process, surely, is the most interesting and ingenious.

A large nut was cast around the shaft and, when cold, it was worked slowly up and down the threads—presumably whilst an abrasive compound was applied—to smooth out the rough places and produce a comparatively even finish.

As time went on all engineering firms began to make their own screwing tackle, and hand-screwing tools became general, but the conditions were chaotic, because there were no standardized pitches, each concern using its own. Thus, when new screws were required, the owner of the machine to which they were fitted was compelled to return to the original constructors in order to obtain replacements of the correct pitch.

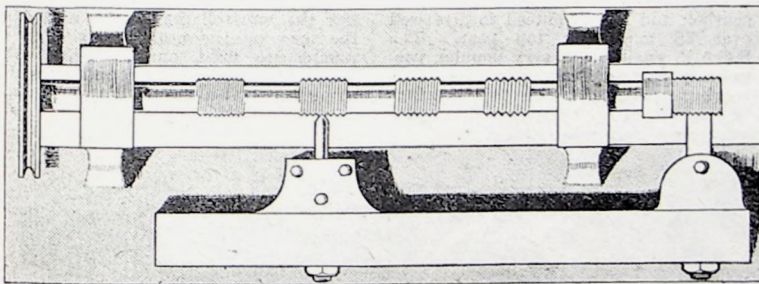
Even then it was quite likely that in the meantime the taps or dies which had cut the thread had been destroyed and some other pitch substituted.

An examination of this early screwing tackle, many excellent examples of which are to be seen in the Science Museum, South Kensington, London, S.W., shows it to bear an extraordinary similarity to the tackle used to-day.

The Whitworth Standard.

In an effort to overcome the trouble and annoyance caused by lack of uniformity in screw-threads Sir Joseph Whitworth set out to discover a system by which they could be standardized. His method was to obtain samples of as many screws of varying diameter as possible and to tabulate the variations in the pitches in fractional parts of threads per inch.

By this method the Whitworth screw-thread, in general use to-day, was evolved, and was described by Sir Joseph in a paper which he read before the Institution of Civil Engineers in 1841. In 20 years the Whitworth system displaced all previous heterogeneous



A machine of the type shown above was used by Plumier in 1701 for cutting threads in metal. In its general conception it is very similar to the chasing lathes used to-day in many machine shops.

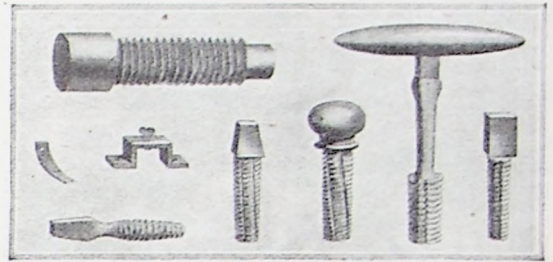
designs and the standard was accepted in England, Germany and the United States.

Rivals came into the field, however, and two attacks were made upon the standard—one by the Franklin Institute of America in 1864, when the Sellars thread was adopted as the U.S. standard, and another in 1873, when Delisle, of Carlsruhe, started the metric system, which is now the Continental standard.

After several years the matter was taken up by the Society of German Engineers, and the International Screw Thread Congress was formed. The history of the proceedings of the congress is of a highly technical nature and would fill a volume. The final result, however, was that the present eight systems of screw-threads were standardized out of about sixty which were advocated.

Screw-cutting lathes came into quite general use early in the 19th century, and an excellent example of one of Henry Maudslay's lathes may be seen in the Science Museum, South Kensington. A photograph of this lathe appears in the heading to this article, to-

gether with a modern Selson tool, and it is interesting to observe that the fundamental design of these two machines is identical, a lead screw being used to control the movement of the cutting tool. Maudslay did a great amount of valuable work in connection with screw-threads, and he is regarded by many engineers



Examples of 17th-century screw taps reproduced from an old print by courtesy of the Science Museum.

as having done almost as much as Whitworth in this direction.

The differences which exist between the standardized threads of to-day concern not only the pitch of the thread but its shape. The Whitworth thread is of triangular section, the angle between the threads being 55 degrees, whilst the top and bottom of the thread are rounded off to facilitate cutting and, so far as the base is concerned, to prevent fracture under tension.

In this country the British Standard Fine Thread—known usually as the B.S.F. thread—is in very general use for motorcar work. For a given bolt diameter the number of threads per inch is greater than with Whitworth bolts.

The Sellars American standard thread has an angle of 60 degrees and is flattened at the top and bottom instead of being radiused like the Whitworth thread. The International standard metric thread has also an angle of 60 degrees and a flat top, thus conforming in these respects to the Sellars thread, but the bottom of the thread is rounded instead of being flat.

Another thread which is used very largely in instrument work is that which is standardized by the British Association. The thread has an angle of 47½ degrees and is rounded off at the top and bottom, with a radius equal to two-elevenths of the pitch. The dimensions of B.A. screw-threads are given always in millimetres.

Where threads are used for conveying power or carrying heavy loads—two instances of which may be given in the lead screw of a lathe and the screw of a jack respectively—a square thread is used, the diameter and pitch of which can be made to conform to any of the recognized standards. A variation of the square thread is to be found in the Acme standard screw-thread, which is used on machines such as lathes, where a disengaging nut is required. The sides of an Acme thread, instead of being normal to the axis, are inclined at an angle of 14½ degrees or 29 degrees included angle, whilst, in addition, there is clearance at the top and bottom of the threads.

When a screw has to resist a force acting always in one direction, what is termed a buttress thread is sometimes used. This thread has one surface normal to the axis of the screw like a square thread, whilst the other surface is inclined at an angle, so that a section of the thread has the appearance of a ratchet.

The worm drives of motorcars and the propellers of ships and aircraft provide other examples of screw-threads designed for a special purpose.



FIRST PHOTOGRAPHS, DESCRIPTION AND ROAD TEST OF THE VERNON SPECIAL AND THE VERNON-DERBY SUPER SPORTS.

WE have just been able to examine and to test over a short distance on the road two very attractive new sports models. Known as the Vernon Special and the Vernon-Derby Super Sports, they are listed at £375 and £275 respectively, and are manufactured in France by the makers of Derby cars, which, it will be remembered, were imported into this country in fairly large numbers a few years ago.

The sole concessionaire is Mr. A. Veruon Balls, who will handle them from new premises about to be opened at 93, High Holborn, London, W.C.1.

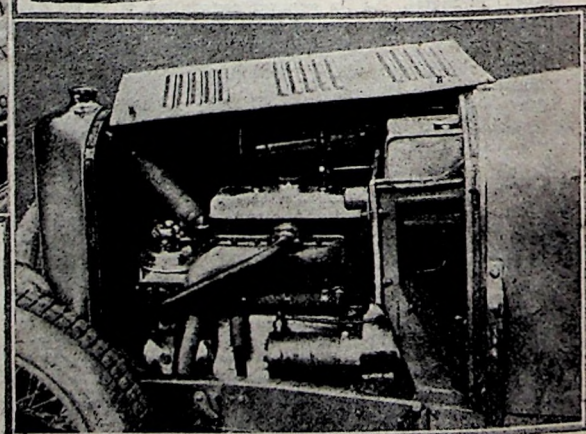
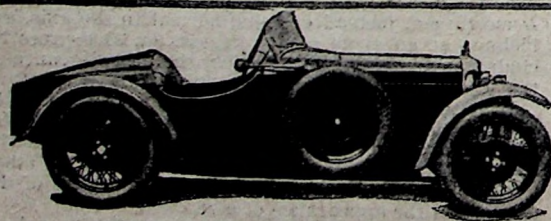
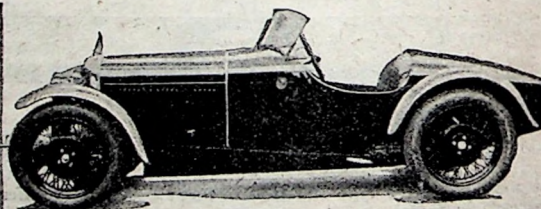
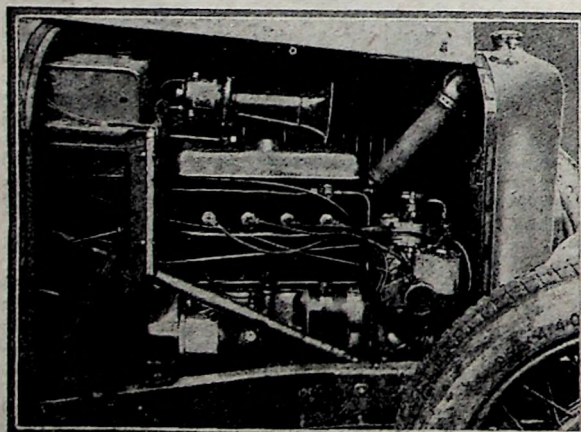
Mr. Balls has been prominently associated with the importation of French sports models for several years and has scored noteworthy successes at the wheel of them in speed events at Brooklands and elsewhere.

The more interesting of the two French models is the £375 Vernon Special. It has a 1,096 c.c. supercharged S.C.A.P. engine, a four-speed gearbox and is guaranteed to give well over 75 m.p.h. on top gear. The S.C.A.P. engine is a very popular proprietary unit in France; it has a two-bearing crankshaft with ball bearings

for the rear end, force-feed lubrication to the main and big-end bearings and very neat overhead-valve gear.

The Cozette supercharger is driven from the front end of the crankcase, its axis being vertical.

A close examination of the engine reveals a number of very interesting features. The timing gears, for example, are at the back, which simplifies the supercharger drive and eases the load on the crankshaft. Two oil pumps are used, one of which sucks oil from the crankcase and passes it through an oil-cooling radiator mounted



The S.C.A.P. engine of the Vernon Special with its vertical supercharger strikes a distinctly novel note. The appearance of the Vernon-Derby Super Sports is made clear by the photographs showing the near and off sides of it.

between the front dumb-irons and thence back to a second pump, which feeds the engine ducts under pressure.

A four-speed gearbox is bolted up behind the engine. It gives ratios of 3.75, 5.5, 8 and 14 to 1, and a light clutch with a powerful stop ensures rapid gear-changes being easily made. The propeller shaft is enclosed in a torque tube and a centre bearing is fitted in accordance with accepted Continental practice for this class of car.

The back axle, which is driven by spiral bevels, does not incorporate a differential, and this, of course, simplifies the brake gear. The foot brake expands shoes in the front wheels and one rear wheel, whilst the hand brake operates in a drum on one rear wheel only. As there is no differential the hand brake thus retards both back wheels, whilst the foot brake takes effect on all four.

The frame cross-members pass beneath the propeller shaft, which is above the level of the floorboards and is covered over by a sheet-metal guard.

The steering is of the worm and sector type, the sector being so arranged that it is easily adjustable to take up back-lash. An interesting feature in this connection is that the sector is so formed that when the car is new there is no back-lash with the steering amidships, but a perceptible amount with the lock hard over. As wear takes place the sector can thus be adjusted closer to the worm without any risk of binding on full lock.

The chassis equipment is comprehensive and up-to-date. There is a six-volt separate-unit lighting and starting

set, shock absorbers all round, wire wheels—the centres of which enclose the brake drums—and Dunlop 27-in. by 4.4-in. tyres.

The bodywork, as the photographs show, gives a very attractive line whilst it also provides ample comfort for two.

In the tail there is a large space which is disclosed by hinging forward the seat squab. The lower part of this space is occupied by the battery and tool kit, whilst the upper portion, being separated by a shelf, provides useful accommodation for week-end luggage for two people.

At £375 the Vernon Special is practically in racing trim, an additional £20 being charged if fitted with a hood, screen, wings and side lamps, when the appearance, of course, is almost identical with that of the Vernon-Derby Super Sports. In the photographs, incidentally, no hood is shown. This will be of the Cape-cart type, and not of the demountable pattern which finds favour on the Continent. The design of the hood, incidentally, is such that when folded it does not interfere with the body lines.

Pneumatic upholstery is used for the separate seat cushions and squab, the air bags being covered with an attractive leather material of a bright crimson.

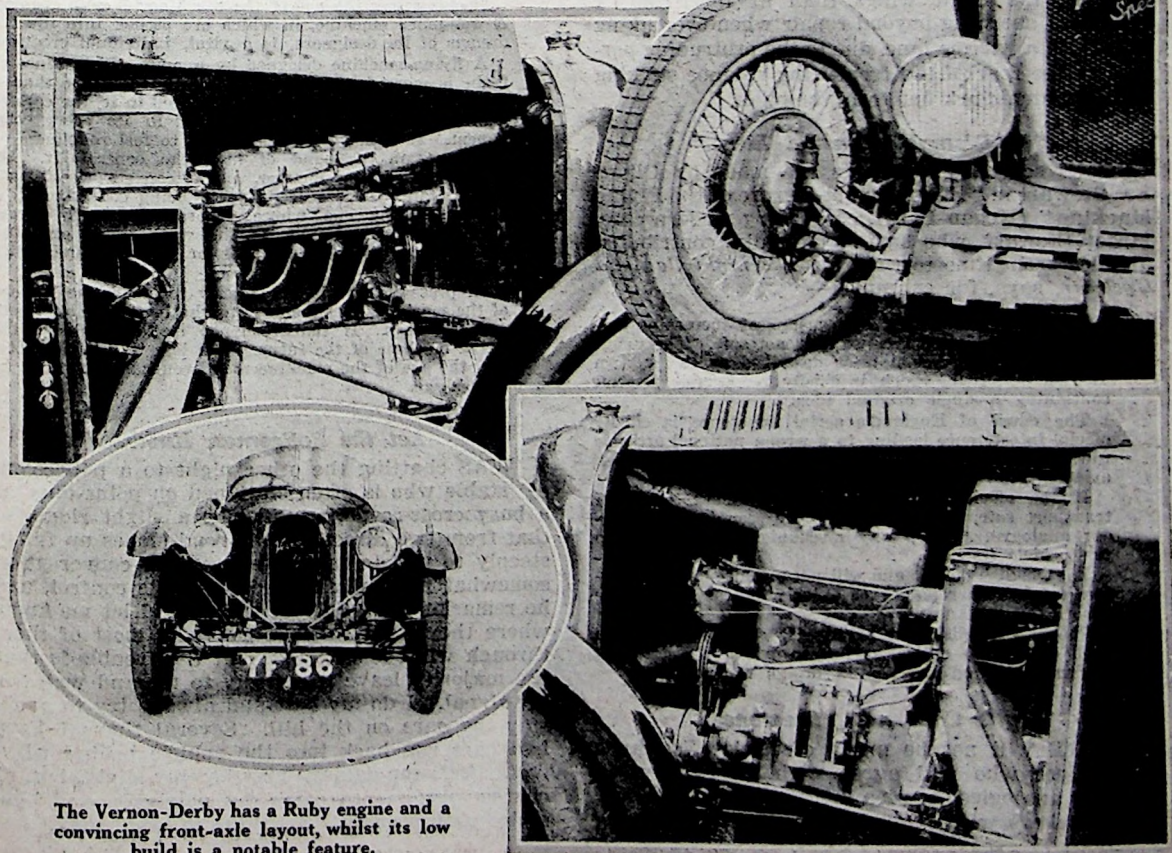
On the road we found that the Vernon Special was exceedingly fast and controllable, whilst the supercharger did not interfere with general flexibility or slow running. The car could, in fact, be used in quite a "gentlemanly" manner, whilst by way of contrast advantage could be taken of the four-speed gearbox and the most terrific acceleration obtained.

The speedometer needle nips round past the 50 m.p.h. mark in a flash on third speed, and the ability to make "racing changes" allows one to get away in the most astonishing manner. The brakes are sweet, easily operated and extremely powerful, whilst the steering is sensitive and has a feel nicely in keeping with the character of the car. The very low centre of gravity eliminates all roll or side sway and fast cornering, despite the absence of a differential, can be indulged in without any suspicion of rolling.

The Vernon-Derby Super Sports car at £275 differs from the Vernon Special in that an atmospheric induction 1,000 c.c. Ruby engine is fitted, a film radiator is used instead of a honeycomb, there is no oil radiator and the performance, of course, is not so good.

The four-speed gearbox provides ratios of approximately 4, 6, 9 and 15 to 1, and here, with the details already mentioned, the difference between the two models ends, for the Vernon-Derby embodies the same fittings and equipment as the £395 Vernon Special, whilst the bodywork is practically identical.

The general characteristics and behaviour of the car were similar to the supercharged model, except, of course, that it had not the lightning acceleration. The Ruby engine is a well-trying and efficient little unit and in its best fettle should give a maximum speed of 70 m.p.h. with a third-gear speed of 50 m.p.h.



The Vernon-Derby has a Ruby engine and a convincing front-axle layout, whilst its low build is a notable feature.

AND

Wing-tip Steering.

HOW many drivers, I wonder, use the front wing tips as a guide when driving in traffic, overtaking on the open road or negotiating comparatively difficult places? I must admit that I myself make good use of them, a fact which is apparent whenever I take the wheel of a car which has a very high or wide bonnet so that the wing tips cannot be seen. At first, in such a car, I feel quite at a loss, whilst in the case of a car which I drove recently, and which was much wider at the back of the front wings than at the front, I crumpled one wing beyond repair when overtaking a lorry in a narrow lane, due to the protruding portion at the rear of the front-wing valance striking a root which stuck out from the bank.

"A Dismal, Abysmal Mess."

SOME scathing comments are made by Oliver Stewart in "Æolus, or the Future of the Flying Machine" (Kegan Paul), concerning modern cars. Major Stewart, who has, incidentally, contributed articles from time to time for *The Light Car and Cyclecar*, says, for example:—

Road-racing, the only sure means of increasing car-safety, is prohibited because it is not safe. The result is the dismal, abysmal mess described as the modern British motorcar, which is chiefly remarkable for not containing a single original idea. . . .

The cause of England's aerial impotence is chiefly official interference leading to a wrong national attitude towards the aeroplane. The cure is to give English aviation the freedom of the air.

If the official is given powers to make vehicular transport safe, he will, as we have seen in the motorcar analogy . . . stop any mechanical development in the vehicle itself. . . .

The English do not and will not produce cheap motorcars or cheap aeroplanes as quickly and as well as the Americans.

The only English cars having any success in America (and elsewhere) are those few in which perfection of craftsmanship and idealism in design are notable.

Light Cars not Threatened.

THERE will not be many of Major Stewart's readers who will agree with all he says in drawing analogies between motorcars and aircraft, but his views with regard to the future of flying

are most refreshing to read. He does not call upon a Jules Verne-like imagination and draw pictures of the skies darkened by aeroplanes; rather he endeavours to analyse the effects of present-day tendencies in aeroplane design. Summed up, his views are that the present style of fixed-wing machine will be used in the distant future only for journeys of considerable length, whilst for short-distance work moving-wing machines will be extensively employed. Major Stewart's closing lines strike a very happy note. He says:—

People regret the age of the machine: I cannot do so. A well-made machine, in which are struck into life the dreams of its designers, is a vital, individual creation.

A flying machine designed by a man with a sense of flight is more faithful and far more intelligent than a horse or a dog. Thoughts are reflected in it, the careful skill of the executant is expressed in its every component. It is sensitive and quick to feel roughness or gentleness in the hand of him who controls it. Its moods are without number, and it can surprise, please and irritate. It is susceptible to being coaxed, and it enjoys obeying one whose orders are firmly given. But can be treacherous to the weak or to one who does not try to understand it or who is persistently cruel to it.

At present there is a tendency to knock the life out of the machine, to subdue it to the level of tooth paste and tin cans. If that tendency makes headway, the flying machine of the future must lose its individuality, and the age of the machine may eventually prove to be a dark age.

Let the Policeman Know.

I WAS chatting the other night to a police-constable who is often stationed on point duty at a busy cross-roads, situated on a slight ridge, so that from two directions the road slopes up fairly steeply to the actual crossing. Our conversation somewhat naturally turned on traffic control, and he remarked, "If only drivers would let me know where they want to go, I could let most of them through without stopping; but the trouble is that the majority leave it entirely to me and wait for my signal. I do my best and always try to avoid stopping cars on the hill. Several times I have had cars run back into the vehicle behind when restarting; the damage may be only slight, but, of course, out has to come my notebook, and," he added with a smile, "anything to avoid that."

Personally, I am all against giving too many signals and, so far as other traffic is concerned, I think the only signal that is really essential is the "about to turn right" sign. On the other hand, I have always thought that it is a good plan to let the point-duty man know exactly what you intend to do, and the conversation recounted above has naturally strengthened my views. By letting the constable know what you intend to do, you not only make his job easier, but very often save yourself time as well.

Fashion's Fancy.

INDICATIONS are that polished "mahogany" for facia boards, the mouldings of doors and similar jobs is beginning to give way to walnut and other more decorative woods. This is a development which I do not regret, for the cheapest white woods can be stained and polished to look exactly like mahogany, but walnut is hard to copy. Nothing makes a newish car look more shabby than scratched, blistered and otherwise damaged wood-work inside the body.

Tyre Troubles in Store.

WITH the opening of the tar-spraying season—due not to the tar, but to the warmer weather—tyre troubles generally begin to assert themselves, particularly in the case of cars which have been laid up or used very little during the winter months. Those about to start on long journeys would therefore be well advised to carry a sound spare tube, whilst the time is opportune to overhaul the puncture repair outfit.

KENILWORTH CASTLE.

The old castles of England, even if not appreciated for their antiquarian interest, provide an admirable background for a photograph. The car is a Wolseley.

I imagine that there must be many readers who have never patched a tube themselves. They are advised to buy a good puncture repair outfit and follow the instructions explicitly, whilst if they can get a friend to give them a few wrinkles with regard to removing and replacing covers, they will certainly find it helpful, for a puncture is easily mended if you know just how to do it, whereas if you are new to the task when necessity compels you to practise it by the wayside the last condition is often very much worse than the first.

Some Modern Air-cooled Cars.

A READER asks if he is correct in believing that there are now no air-cooled four-wheeled cars in production. I am afraid that he is wrong. In England it is still possible to obtain the A.B.C. to order, and a very sporting and powerful little car it is. The latest-type engine, which closely resembles an A.B.C. unit which has found considerable favour in aircraft circles, is a very big improvement on the earlier types and has a first-rate performance. In France the Lafitte is one make with an air-cooled engine, in Czecho-Slovakia there is the Tatra and in America the Franklin. I believe, in addition, that there are one or two German cars with air-cooled engines, but I cannot call their names to mind.

Saving Space.

MANY of the so-called "ideal" home garages attached to suburban dwellings have been built apparently to receive a car in much the same way that a "topper" slides into its box, and enthusiasts who endeavour to make small garages serve the purpose of a workshop as well often find that the room at their disposal is very limited. What is one to do with a five-gallon oil-drum, for

instance? If it be propped up on trestles or on a corner of the work-bench it will occupy quite a lot of useful space. An acquaintance of mine, who was faced with this difficulty, overcame it by sinking a brick pit in one corner of his garage, large enough to take a five-gallon drum and sufficiently deep to allow for a wooden trap-door, flush with the floor, to get over it. He then purchased one of those very efficient little pumps which fit straight into the orifice of a five-gallon drum. When you enter his garage you see what appears to be a stand-pipe in the corner, but which, of course, is the upper part of the pump protruding through the wooden trap-door. It may appear that this is going to extremes in order to save space, but, in addition, the neatness of the whole arrangement will commend itself to other folk who are keen on gadgets of this kind.

Elbow Room.

A DEFECT found on some cars when the side curtains are up is that elbow room for the right arm of the driver is notably lacking. As a result one's position at the wheel becomes cramped, and in an emergency, such as correcting a skid, action may be less swift than it ought to be.

I found myself boxed up in this manner while on a long journey in a borrowed car a few days ago, and the experience led me to wonder why so many manufacturers let such a lot of space lie fallow over the running boards. I suspect the fetish of smart lines is primarily responsible, but there does not seem to be any sound reason why the beam of

the body should not be the full width of the car. Manufacturers complain that their efforts to provide accommodation are very circumscribed; but what would they have said if they had had to face the formidable handicap of railway-carriage designers, who, confronted with the limits of track, platform clearances and tunnels left as a legacy by the early constructors of railways, have achieved such miracles of space provision in modern coaches?

No Storage Space.

LUGGAGE accommodation will be a matter of vital concern to thousands of us in the coming months. Now, no one can contend that in four-seater models provision for luggage carrying is satisfactory; in fact, one can say that in the majority of cases it never entered into the scope of the design at all. Of course there is the grid—often an extra, and at best a most unsightly contraption, liable to be abused and allowing the luggage to be at the mercy of the elements. Usually it involves carrying two number plates or altering the standard arrangement and rear lighting. Collapsible grids on the running board are useful, but the amount of luggage that can be carried in this way is limited, unless paintwork is to suffer.

Too Previous.

A FRIEND of mine has had a very amusing experience in connection with his driving licence. He renewed the licence a fortnight before its expiry, but stipulated that it should be dated from the end of the term. It so happened that a new form of container for licences was being issued and the renewed form was pasted in this. The old container held so many old licences that it resembled a wad, and my friend threw it into a drawer as a souvenir. Two days later, when out with his car, he ran into a "hold-up" for an inspection of licences. He confidently handed the container to the police official, but, to his surprise, was greeted with a frown. "What's this?" asked the constable. "You are not entitled to drive for another fortnight!" Explanations followed, and the matter passed off on my friend promising to send the current licence for perusal.

RIVAL STYLES.

Two ways of taking a hair-pin bend, as shown by R. M. Dixon in a Newton-Ceirano (above) and H. B. Chantry in a Lea-Francis (right) on Bluehills Mine in the Land's End Trial. Chantry's style was the more popular and the most successful.





The Speed Limit.

ALL the indications are that when the new Road Traffic Bill becomes law there will be no speed limit, and, in consequence, there will be an end of the absurd police traps which are set at present on perfectly safe stretches of open road. The Royal Automobile Club, the Automobile Association and the Royal Scottish Automobile Club have made it clear that they are opposed to speed limits and, as the object of publishing the draft of the Bill was to obtain the views of responsible bodies of this kind, it can be taken that the sponsors of the Bill, with such a heavy weight of public opinion against a set speed limit, will favour the alternative clause in the draft which proposes that there should be no general speed limit except, perhaps, in the case of cars drawing trailers and in other special cases or districts.

The important thing to bear in mind in connection with the imposition of a speed limit is that it could not be of value for any material length of time. The 20 m.p.h. limit was recognized more in the breach than in the observance within a few years of its imposition, and the indications are that, with far-reaching improvements still being made in motor vehicles and road conditions taking on a new character, any set limit made at the present time would need changing in the comparatively near future. Whether we have a speed limit or whether we have not, the matter of greatest importance is that under the new Road Traffic Bill reasonable motorists shall be able to drive about in a rational manner without continually breaking the law and without risking a prosecution every time they take their cars out on the road.

True Economy Cars.

A JOURNEY which will be watched with great interest started from Liverpool last Thursday, when two enthusiastic light car drivers set out to make a circuit of the coast of Britain in 8 h.p. light cars. The outline of the run, which we give elsewhere in this issue, shows that a total average daily distance of 250 miles has been scheduled, whilst each car carries two people with their luggage for the whole journey. The car in question is one of the cheapest on the market, it was introduced as recently as last Motor Show, and at the moment it is in a class practically of its own.

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 OVER FOURTEEN YEARS.

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Topics of the Day

This is a type of car in which we have the greatest confidence and which can look forward, in our opinion, to an era of marked popularity. As we have pointed out on many previous occasions, it is no good a car being cheap to buy if it is not also cheap to run. Motorists in increasing numbers are finding this out, and the result will be a very largely increased demand for cars of 1,000 c.c. and under. Years ago it was demonstrated that such

cars were capable of fulfilling all the requirements of the majority of people. It is unfortunate that there are not at the present time more opportunities for their modern equivalents to prove their road-worthiness and reliability in public competitions. When the doors of Olympia open next October we confidently expect that a quite extensive range of cars in this class will be offered to the public,

Air-cooled Engines.

READERS of *The Light Car and Cyclecar* have not been slow to uphold air-cooling, which was condemned by the writer of a letter which appeared in our correspondence columns a fortnight ago. They have used air-cooled engines and they know how serviceable and reliable they are. If any further testimony were needed to the extraordinarily good performance of which an air-cooled engine is capable, it is surely provided by the record of a tour through Northern Africa which is described in this issue. The car which our contributor used is now of an obsolete type and had covered more than 25,000 miles at the outset of the journey, but it carried him right through France, and for an extensive tour in an extremely hot country without any sign of fatigue and without the need for adjustments or repairs being effected.

Air-cooling has a great deal to be said in its favour. It eliminates the need for a radiator, water piping and water jackets; it does away with any risk of damage to the engine through frost and it makes the dismantling and assembling of an engine easier, quicker and cheaper. The only drawbacks are not of any great consequence, whilst the popularity of air-cooling for aircraft engines indicates clearly that water-cooling is by no means essential for reliability. It is not inconceivable that small air-cooled cars may some day regain the popularity which they have lost.

CYCLECAR COMMENTS.

By SHACKLEPIN.

NOVEL FRENCH THREE AND FOUR-
WHEELED CYCLECARS WHICH DRIVE
AND STEER ON THE FRONT WHEELS—
50 M.P.H. WITH A 350 C.C. ENGINE.

FRONT-
WHEEL-
DRIVE
CYCLE-
CARS.

Details of the front-wheel-drive Villard cyclecars. The suspension and steering systems are very ingenious, and chain drive is employed.

ABOUT three years ago a very original French three-wheeler with friction transmission was described in this journal in some detail. This tiny machine, known as the Villard, has since earned an enviable reputation in France and has been improved in many ways since its first appearance. In addition, a new four-wheel model with a similar transmission system and front-wheel drive has just been put on the market.

The Villard three-wheeler has become a very familiar sight in Paris, owing to its adoption by the famous multiple-shop provision firm of Felix Potin for light delivery work. Quite an imposing fleet of these tiny cyclecars is kept in regular service.

The machine has a light, pressed-steel frame, with quarter-elliptic springing to the rear axle and also to the front forks, which have recently been entirely redesigned and consist primarily of a wide inverted U in steel tubing. The forks, which are fixed to the chassis, are wide enough to allow for the movement of the wheel in steering and the wheel is slung from one side of the fork.

B24

A great advantage in this arrangement lies in the fact that it allows of rapid and easy wheel changing. All the wheels are interchangeable. A substantial ball-type universal joint is interposed between the driving sprocket and the stub axle. The chain sprocket is located outside the fork blade and an extra tube extending from the fork assists in supporting the bearing for the spindle. Steering is effected by a single tubular steel arm pivoted at the top of the forks and dropped to the axle.

The power unit is a 350 c.c. single-cylinder, air-cooled, two-stroke engine of the simplest possible design. Cooling is assisted by a fan driven by spring belt from the crankshaft. A large outside flywheel acts as the driving member of the friction gear.

The sprocket end of the countershaft has a spherical type of ball bearing, which allows the tension of the driving chain to assist in putting pressure on the friction disc. The clutch pedal, by means of which the disc is pushed away from the flywheel in changing gear, is made in the form of a stirrup.

On the standard model with two passengers it is claimed that speeds

up to between 30 m.p.h. and 35 m.p.h. can be obtained on the level, whilst the sports model is said to be capable of something like 50 m.p.h. This with a 350 c.c. engine! Fuel consumption naturally is low, about 55 miles per gallon being claimed.

The Villard four-wheeled cyclecar is a direct development of the three-wheeler. It has been produced to satisfy those who object to the unconventional appearance of the little machine just described. A rather more powerful engine is installed, in view of the slight extra weight necessitated by a four-wheel layout.

The engine employed is a 500 c.c. vertical-twin two-stroke, air-cooled. Transmission arrangements are similar to those employed in the three-wheeled model, but the friction gear is placed behind the engine instead of in front of it. A single chain transmits the power from the countershaft to the front axle, which incorporates a differential.

At each end of the axle is a ball-type universal joint similar to the one used in the three-wheeler, and each front wheel is mounted independently in forks—or, rather, the wheel has the appearance of being mounted in a fork. Actually, it is supported from one side only; the outer member of each fork is simply the steering arm. Suspension, as in the three-wheeler, is by quarter-elliptics all round. The steering mechanism is actuated from above, the steering cross-rod being carried over the top of the engine.

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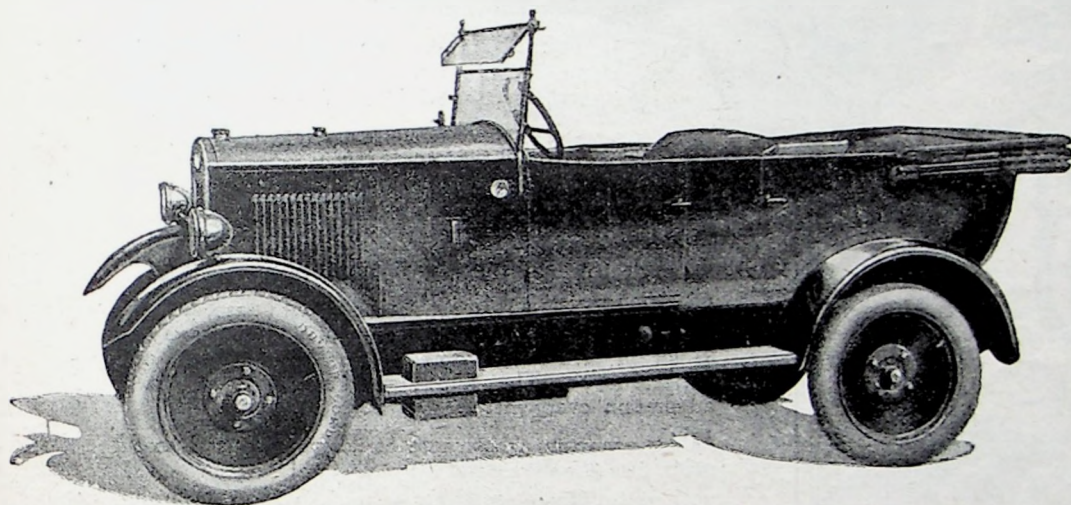
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B28

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

The Old Castles SUSSEX

SITUATED FOR THE MOST PART IN CHARMING COUNTRY, THESE INTERESTING RELICS OF THE PAST ARE WELL WORTH A VISIT.

Hurstmonceaux Castle, one of the most beautiful ruins in Sussex.

A TOUR of the castles of Sussex is one that is full of interest. Not only does it revive memories of history, but it takes one through some of the choicest scenery of Sussex, and particularly that part of it which is least dependent upon the changing seasons.

Far to the east the fragmentary ruins of Hastings Castle dominate the hills above the town—a position wisely selected by William the Conqueror when he marched from Senlac to take preliminary steps toward the complete subjugation of the land. Westward the coast road passes the prosperous little town of Bexhill, and thereafter plunges across the marsh land to Pevensey.

Here the Romans built their fortress of Anderida, and, within the circle of the Roman walls, the brother of William of Normandy erected the stronghold the ruins of which have now passed into the possession of the nation and are being carefully preserved. This much-besieged castle is one of the most historic of our land, and on the level coast of Pevensey both William and the Roman legions landed.

Four miles inland and due north from Pevensey stands Hurstmonceaux Castle, the most picturesque ruin in the county. This is a fortified manor house rather than a castle, and played no important part in early warfare. Its red-brick frontage rises imposingly from the green hollow wherein it stands, and its interest in no small degree rests upon its literary association in the writings of Horace Walpole and the "Memorials of a Quiet Life."

Guarding the Coastline.

No castle guards the coastline westward. The shore from Pevensey to Eastbourne is dotted with the curious Martello towers which might have served their purpose had Napoleon landed, or tried to land, upon our coast; otherwise they have but little interest.

The valley of the Cuckmere is entirely undefended and the Ouse valley offered an easy path for an invader until, seven miles inland, where the downs narrow almost to a meeting point, Lewes Castle dominates the surrounding country. No other Sussex castle holds so imposing a position, and its connection with the dawn of popular liberty and the rising of Simon de Mont-

fort to champion the popular cause invest it with memorable significance.

In olden days windmills, not castles, held the heights of the downs westwards to the valley of the Adur, but on the rising ground to the north of Bramber stands the ruins of Bramber Castle, beaten and broken in the turmoil of the Civil Wars.

The next gap in the South Downs is where the Arun escapes to the sea, and Arundel, with its fine castle, may be reached either by the coast road through Worthing or by a delightful inland road under the shadow of Chanctonbury Ring.

Only the keep remains of the old castle at Arundel, and to this visitors are admitted. It has endured three historic sieges since William bestowed it upon Roger de Montgomery in recognition of his services at the battle of Hastings, and after the third siege it was laid in ruins by the Parliamentary army in 1143.

Magnificent Ruins.

At Petworth, 12 miles north from Arundel, a narrow road leads west to Midhurst and the magnificent ruins of Cowdray Castle in the peaceful seclusion of Cowdray Park. Like Hurstmonceaux, Cowdray is, properly speaking, a castellated manor house. It dates from the reign of Henry VIII. Edward VI and Elizabeth were entertained there and Dr. Samuel Johnson was a visitor to Cowdray. The story of Cowdray and its curse and its association with Battle Abbey are interesting reading, and the building itself and the parklands, which are open to the public, are worthy of the unstinted praise bestowed upon them.

Amberley Castle, near Arundel, is the residence of the Bishop of Chichester, and near the cathedral town are the unimportant ruins of Hainaker Castle.

The remaining castles are away to the east and may well be visited on the way to Hastings from the north. Of these Bodiam, surrounded with a well-preserved moat, is by far the most interesting. Bequeathed to the nation by the late Marquis Curzon, it is in excellent condition and well worth a visit.

Of Scotney Castle, not far from Tunbridge Wells and on the Kentish border, nothing remains save the tower. At Rye there are walls and gateways of historic importance, and the Ypres Tower is the nearest approach to a castle, whilst, in the low land between Rye and Winchelsea, there are the ruins of Camber Castle standing amid the marshes.

Most of the Sussex castles were built at places of strategic importance, and the story associated with them contains much that was of first importance in the history of our land.

INTERESTING NEW THREE-WHEELER.

SINGLE FRONT WHEEL WITH
HELICAL SPRING SUSPENSION
—ENGINE AND GEARBOX BE-
HIND THE REAR AXLE—STEEL
LATTICE-GIRDER FRAMEWORK.

A NEW type of three-wheeler which embodies many interesting features has been built recently by an engineer who has had considerable experience in designing light cars. As will be seen by the photographs, the new three-wheeler differs from orthodox practice in having one wheel at the front and two at the rear. The engine also is placed at the rear, and drives through the medium of a three-speed Sturmey-Archer gearbox to the nearside rear wheel. The kick-starter pedal projects through the rear panel of the body.

Actually, the driving sprocket is mounted just off the centre of the tubular rear axle, but the offside wheel is arranged to run free. The axle, however, is mounted in 4-in.-long roller bearings, carried in housings bolted to the half-elliptic springs.

Air-cooled Engine.

The engine is a 680 c.c. air-cooled twin-cylinder J.A.P., carried in a pressed steel cradle behind the rear axle. Additional cooling is provided by means of a fan driven direct from an extension of the engine crankshaft on the timing side. Lubrication is carried out by means of a mechanical pump, which draws oil from a one-gallon tank, carried on a bracket on the rear framework. The petrol tank, which holds 3½ gallons, is mounted in the dash, a long copper pipe conveying the fuel to a Binks carburetter.

There is no true chassis frame; instead, the entire framework, including the body foundation, is made up on the lattice-girder principle, the material used being small-sectioned angle iron. This framework is immensely strong, but possesses the necessary amount of resiliency.

Considerable ingenuity is displayed in the design of the front wheel and its suspension system. A vertical shaft, of 1-in. diameter nickel steel, is secured at the top and bottom to the main framework, an arched member ensuring strength and rigidity at this point, and mounted on the shaft is a sliding axle

UNORTHODOX BUT PRACTICAL.

These pictures show the pleasing appearance and convenient layout of the new three-wheeler. Ease of access to the engine and gearbox is a prominent feature.

similar to that used on Morgan three-wheelers. The suspension also follows Morgan practice, in that two helical springs are mounted on the shaft, the upper one taking the load and the lower one the rebound.

A lever secured to the sliding axle is connected by means of a short ball-jointed rod to the drop arm on the end of the steering column, an extension of the column being supported in a bearing fixed to the main framework. The steering wheel is mounted in a vertical plane, and there is an epicyclic reduction gear at the base of the column.

Detachable Wheels.

All three wheels are detachable and interchangeable, the removal of three nuts being all that is necessary to withdraw a wheel complete with its brake drum. The wheels are the wire-spoked type, shod with 700 mm. by 80 mm. tyres, and brakes are fitted to each wheel, those at the rear being operated by a pedal, whilst the front brake is controlled by a hand lever. Bowden-wire control is used for the front brake, the clutch and the accelerator, whilst the gear lever is mounted at the side of the body, and connected to the gearbox by means of a long tubular shaft and bell-crank levers.

The aluminium panelling of the body is carried underneath the framework so that the whole of the mechanism is entirely enclosed, but louvres, through which air can pass to the engine, are

cut in each side panel and in the cover at the rear. In running order the machine weighs about 5 cwt., whilst the wheelbase is 7 ft. and the track is 3 ft. 9 ins. Estimated on a normal production basis, it is expected that three-wheelers of this type could be built to sell at a figure of about £90 each.

Road Performance.

On the road this novel three-wheeler is claimed to have a performance equal to that of a motorcycle combination fitted with a similar engine and gearbox. The single front wheel is said to provide very stable and safe control, while the suspension is stated to be equal to that of a quite expensive car. In the designer's opinion, three wheels arranged on his system provide a safer and more mechanical layout than a normal four-wheeled chassis, and he claims that large and high-powered cars could be built on this system. Incidentally, it is of interest to note that on the machine which we examined the aluminium body panels play no part whatever in giving strength to the layout; it is, in fact, quite possible to drive the cyclecar as a skeleton, that is, with all the panels removed.

Although the machine which we have described strikes a new note in three-wheeler construction, there has been a number of other designs in which a single front wheel was used. A cyclecar of this type, the Villard, is described this week by our contributor

"Shackelpin," but it will be seen that the front wheel is used for driving as well as steering, and this results in a rather more complicated layout.

A German three-wheeler, the Phano-mobile, has the engine mounted above a single front wheel in an entirely unconventional manner. There have been a few examples of the machine in this country, but it cannot be said to have enjoyed any degree of popularity.

A layout which, from a mechanical point of view, approaches more closely to that of the three-wheeler under consideration is to be found in the Harper runabout. These machines had rear-wheel drive and the single front wheel

was used for steering, but, of course, they were very small and could, perhaps, only just be termed cyclecars.

Thus, as we have said, the new three-wheeler breaks fresh ground, and it should make a direct appeal to all who want an economical vehicle in which comfort and performance have in no way been sacrificed. The appearance may be unorthodox, but it is by no means unpleasant and at least the design solves the problem of quickly detaching the wheels, whilst, if the designer's claims regarding stability and ease of handling are borne out in practice, these are further weighty points in its favour.

viceable if not particularly pleasing note. During the course of a brief run in the car we found that, like all Gordon England bodies, there was no body rattle or vibration, whilst, even when the car was doing 30 m.p.h. on second, it was commendably silent and there was a complete absence of all drumming noises. Entry and exit from any of the seats is easy and convenient, there is plenty of head and leg-room, and the performance of the car did not appear to be hampered by the wind resistance set up by the coachwork.

The price of this model has not yet been fixed, but we hope to be able to announce it in the near future.

A SINGER JUNIOR SALOON. FOUR-DOOR GORDON ENGLAND BODY WITH PNEUMATIC UPHOLSTERY.

MENTION was made in *The Light Car and Cyclecar* a few weeks ago that Gordon England, Ltd., were experimenting with the design of an inexpensive saloon body for the Singer Junior chassis, and we are now able to publish the first photographs of the finished product, which has now reached the production stage.

In view of the small amount of chassis space available, a very roomy body is provided. It is built on the three-point-suspended Gordon England lightweight system and the complete saloon weighs only 12½ cwt.—only a few pounds more than the standard model.

As will be seen, the body is of the four-door type with separately adjustable front bucket seats. Pneumatic up-

holstery is used, covered with mohair cloth, and sliding windows are fitted to both doors, in the case of the front doors both the glass panels being arranged to slide.

The windscreen is of the single-pane non-adjustable type, and is set at a slight angle to obviate dazzle caused by following cars at night. An automatic windscreen wiper is provided.

The interior fittings, which are attractively planned, strike a quite luxurious note for what is essentially an inexpensive saloon and the comfort of the seats is very marked, whilst there is plenty of legroom both at the front and at the rear. The provision of a roof light is an attractive feature, whilst the fabric-covered fascia board strikes a ser-

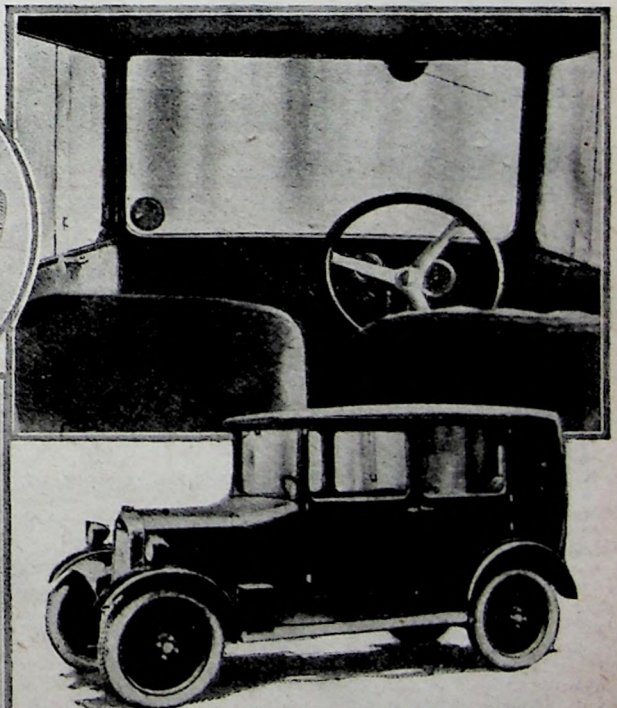
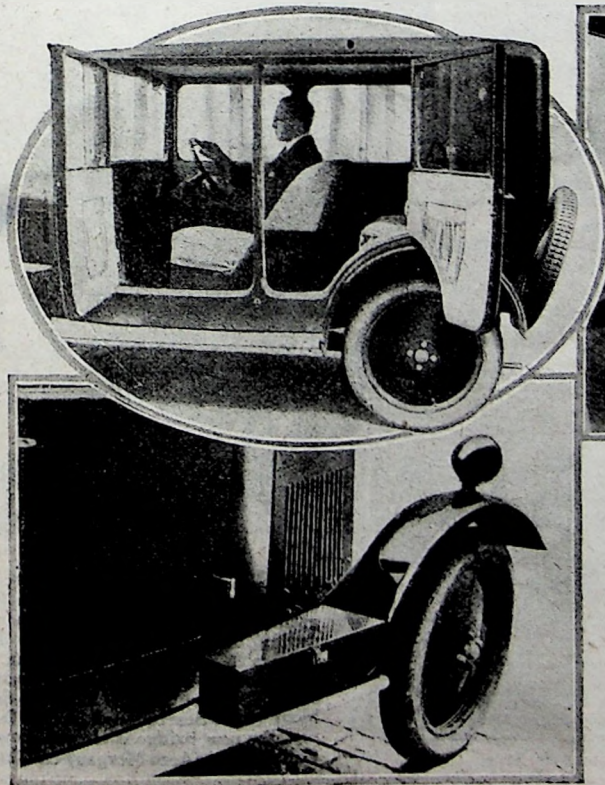
Light Cars in Italy.

ALTHOUGH the Milan Motor Show was opened on April 12th, it was not until the 16th that the stands were completed and every car in its place.

No English light cars are on view, but Italian makes are well represented, and include the Alfa-Romeo, Ansaldo, Bianchi, Ceirano, Fiat and an offspring of this factory known as the Silvani-Fiat. This is an ordinary Fiat chassis modified by E. Silvani, a well-known Italian racing driver. Another well-known Italian light car to be seen is the O.M., and the makers are showing three victorious cars which gained an award recently.

The Derby, which was recently introduced on the Italian market, is shown with a very low sports body and a Ruby four-cylinder engine. Another model is fitted with a S.C.A.P. engine and a Cozette supercharger.

Mathis, Panhard-Levassor, Peugeot, Renault and Talbot are all showing light cars.



In spite of the smallness of the chassis, a very roomy Gordon England saloon body can be accommodated on the Singer Junior chassis.

INCIDENTS IN RECENT EVENTS OF
PUBLIC INTEREST IN COMPETITIVE

 CARS

(1) A scene in the Surbiton All-comers' Handicap on Saturday last. Vernon Balls (Amilcar) is in the grand stand. (2) A. Frazer-Nash (Frazer-Nash) during the same meeting. (3) P. Brough (Sunbeam) in the Glasgow Western M.C.'s 2-day trial held on the Moor in the Scarborough M.C.'s 2-day trial. (4) C.F. Stevens (Aero Morgan) on Blithill Mine, (5) ring spearing competition at the same event. (6) ing, the new bridge is clearly shown. (8 and 9) C.F. Stevens (Aero Morgan) on Blithill Mine, (10)

IN PICTURE

AND TRACK WHICH SHOW THAT
ENTS IS AS STRONG AS EVER.

ing the Surbiton M.C.'s Brooklands meeting
background, whilst to the right is the new
away in the Surrey Senior Short Handicap
the garaging competition at the Disabled
(4) L. Maxwell (Clyno) competing in a
8 h.p. Singer) awaiting his turn to start
(6) H. Cooper (9 h.p. Rhode) on Whitby
during the B.A.R.C. Easter Monday meet-
in the London-Land's End Trial. (Above)
O. Ford (10.8 h.p. Riley) on Lynmouth Hill.

NORTH AFRICA IN A LIGHT CAR.

A 2,600-MILE TOUR THROUGH FRANCE
AND NORTH AFRICA IN A 10 H.P. B.S.A.
AT A COST OF UNDER £60.

WE started from London early in March in our search for the sun. It was dark and drizzling steadily—a most uncomfortable morning—but we arrived punctually at 9 a.m. at Folkestone two hours before the time of sailing of the boat to Boulogne, as requested by the A.A.

We left our car and papers in charge of the A.A. representative, who relieves one of all the trouble of shipping the car, and returned about 15 minutes before the boat was due to sail. The A.A. representative reported the car on board and our papers completed. The crossing to Boulogne, where we were met by another A.A. man, was choppy, but it did not worry us, and we had no difficulty in landing the car.

It was quite fine on that Saturday afternoon, but was mild and wet on Sunday. The next day was cold and dry, but by Tuesday we were getting well south and the sun really showed itself for the first time as we were running into Lyons. We had proposed to stop here, but found it overfull, owing to the great "Foire de Lyons" that we had seen advertised all along the road to take place the first Monday in March. We therefore pushed on down the Rhone to Serrières.

And so to Marseilles.

All next day we drove through glorious sunshine alongside the Rhone with the fruit trees in full bloom. South of Valence, however, a strong northerly wind from the Alps was blowing so that we found it bitterly cold. On through Montelimar of nougat fame to Avignon with its wonderful Palace of the Popes. We spent a few hours sightseeing and proceeded with the wind behind to Aix-en-Provence. Thence we drove to Marseilles, arriving on Thursday morning.

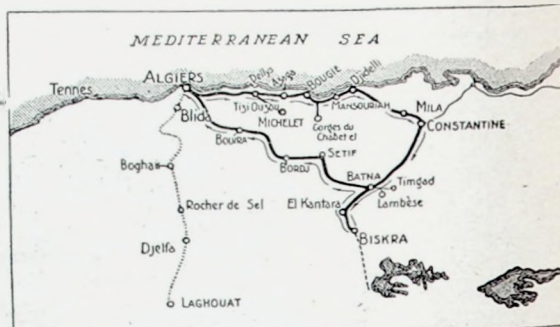
The boat for Algiers leaves at midday, but we found on arrival that two hours was not sufficient to enable them to take the car, so we booked on the next boat, due to start on Saturday, and spent the intervening days on a run to Hyères.

The African coast was finally reached after a 28-hours' crossing, with the sea as calm as a millpond and not a cloud in the wonderfully blue sky. Algiers was en fête when we arrived and, to our dismay, we were informed that our car could not be landed that day because it was Sunday and a fête day; also we were advised to leave nothing in the car, as the honesty of the local Arabs was questionable.

On African Roads.

Next morning we collected our car, with nothing missing, and, after a good lunch, set off for Bougie, along roads which were good, except round Algiers itself. One thing to be remembered when touring in North Africa is the distance between stopping-places. Our route was Bougie, Azazgar, Djidjelli, Constantine, Batna, Biskra and back to Batna, then Setif, Bordj-Bou-Arreidj, Palestro and Algiers—a distance, in all, of about 800 miles. There are excellent hotels, although expensive at the above places, except Azazgar, Djidjelli, Setif and Bordj-Bou-Arreidj, where there are small inns which are clean and comfortable, but not in the first flight. Between these places there are no centres other than Arab villages.

The road from Algiers runs at first through the fertile plain of the Matidja. The sun was very hot, but there was a delightful cool breeze, whilst occasional views of groves of orange and lemon trees, well laden with golden fruit, were very refreshing. We made good going and were soon in more hilly country. By the time we reached Azazgar we were well among the



The route followed after crossing the Mediterranean. Biskra, it will be seen, was the most southerly point.

Kabyle Mountains. We could see the snow lying on them, although it was hard to imagine how snow could long resist the sun. As it was 6 p.m. when we arrived and there were more mountains in front of us we decided to stop for the night at the small inn.

Next day we spent all the morning driving to Bougie; the road runs through the Kabyle Mountains. The scenery is very beautiful and there is a magnificent forest on the route. We met a number of Kabyle Arabs. The men took little notice of us, but the women were distinctly hostile and suspicious. They are dressed mostly in bright-red dresses with white spots and wear many large ear-rings, bracelets, anklets, and other ornaments. We tried hard to take a photograph but they ran away immediately we stopped, making angry gestures or spitting on the ground. The children also ran away on seeing us.

Friendly Natives.

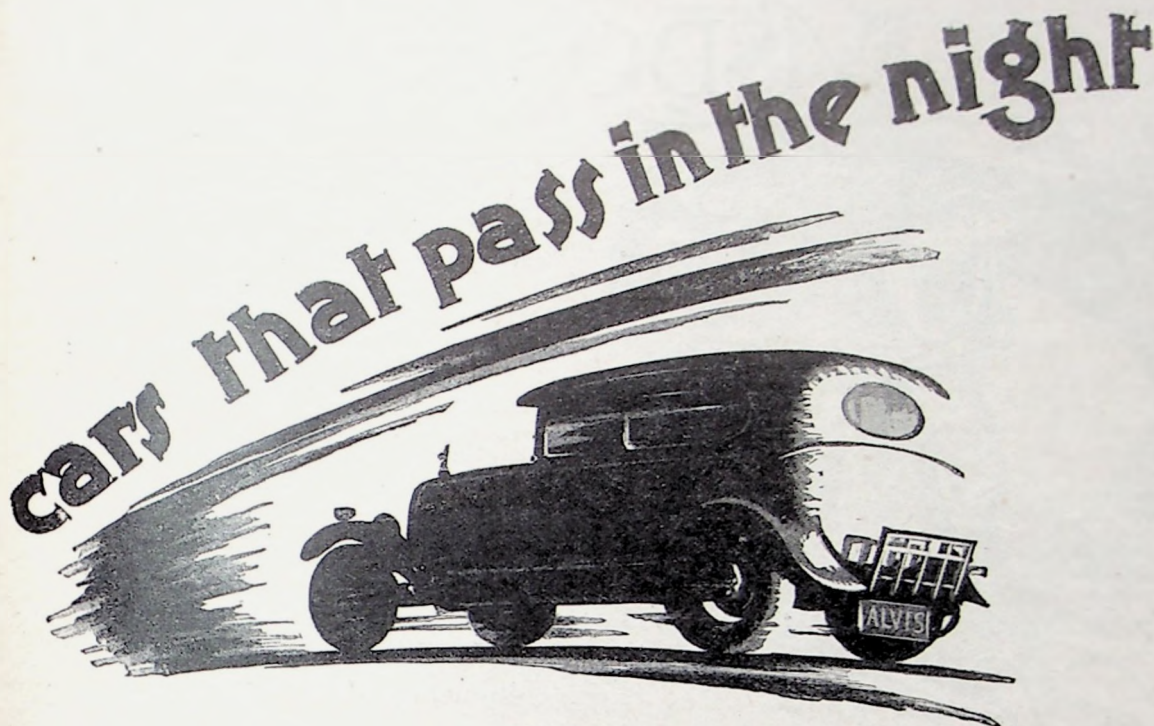
There is a great contrast in the behaviour of the inhabitants once the Kabyle is left behind. On reaching Bougie we were immediately surrounded by small boys who pestered us to let them clean our boots or show us round; we could not get rid of them. The writer went in search of some Kodak films and had at least a dozen boys following him, whilst about the same number pressed round the car with unwelcome offers of assistance.

The same experience occurred in every village or town at which we stopped, and it was found eventually that the only thing to do was to select one boy as guide, and he soon dispersed the others. No Arab women were seen except in the Kabyle Mountains. The drive to Djidjelli is delightful, for the road skirts the Mediterranean practically all the way; in parts it is cut out of the rocks overhanging the sea. From there to Constantine, however, is across mountains with magnificent scenery, the valleys being very fertile and myriads of flowers covering the fields. The roads were good but extremely tortuous and very hilly, rising to nearly 3,000 ft. at one time. It was found that this part of the route was very tiring, but well worth while. There is no sign of civilization in these mountains other than the road.

The Arabs were obviously very interested in us, and when climbing one pass we found we were being signalled from point to point, for at each elbow bend an Arab would be waiting for us and would signal to those above as we approached.

On leaving the Kabyle Mountains the scenery soon changes to rolling open country, and gradually it can be seen that the country gets much less rain. The trees are few and vegetation much less luxuriant.

Constantine itself is rapidly developing; there are several large hotels there and it bids fair to become a large tourist centre. We stopped there and left next



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B35



in tying himself to the Roc's leg in order to negotiate the otherwise impassable mountains is typified in the wise motorist of to-day, who allows the vast organisation of the A.A. to smooth his path of all the difficulties which otherwise would interfere with the pleasure and efficiency of his travels.

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morning for Batna and Biskra, and found the country showing more and more signs of a shortage of water. Our road led us close to two salt lakes and one section of it was encrusted with salt. By the time Batna is reached the proximity of the desert is unmistakable, and soon the country looks like nothing so much as a huge mud pie which dried ages ago.

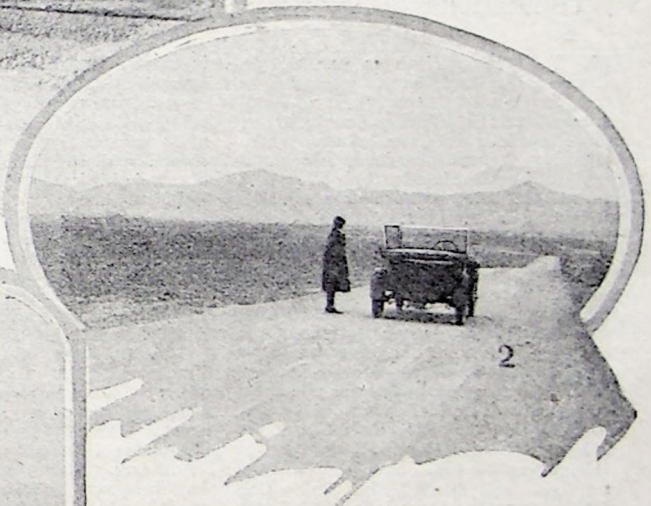
From Batna to Biskra the road runs through El-Kantara, a magnificent oasis with many thousands of palm trees. It was a refreshing sight after the country we had just been traversing, but one soon leaves it and, after crossing the low Col de Sfa, the immense Sahara stretches in front—a most impressive sight. Biskra, where there are several very fine hotels, was soon reached, and after lunch next day we turned our backs on the desert with great regret and returned to Algiers via Batna, Setif and Palestro, the total time taken over our trip being 23 days from London and back to London.

Our mileage was 2,600 by road and 850 by sea, the total cost being as follows:—

	£	s.	d.
Petrol	5	5	0
Oil	1	0	0
Tyres, say	3	0	0
Shipping car, Dover-Boulogne and return	7	0	0
Ditto, Marseilles-Algiers and return ...	7	0	0
Triptyque	1	5	0
International driving pass	1	0	0
Insurance of Customs deposit	0	10	0
Landing charges	0	15	0
Two Dover-Boulogne first-class return	3	0	0
Ditto, Marseilles to Algiers	12	0	0
A.A. agents' charges at Marseilles and Algiers	2	10	0
Total	£43	15	0

Our hotel bills and cost of food came to about £16 in all. We nearly always lunched by the roadside if the weather was fine, but it is quite easy to tour comfortably in France at a cost of 7s. 6d. a day each for dinner, room, petit dejeuner and dejeuner. Meals are nearly twice as dear in Algeria.

Our car is a B.S.A., 10 h.p., air-cooled. It had 25,000 miles to its credit before we started. This was its fourth trip abroad and it has been over every imaginable type of road, including the Alps and Pyrenees several times.



(1) Near Biskra, a spot which is visited by very large numbers of English tourists. (2) Returning from the Sahara. The Barrier Mountains can be seen in the distance.



(3) Youngsters who live amongst the Kabyle Mountains. (4) Another roadside vista in the famous Biskra district.



SURBITON CLUB'S BROOKLANDS MEETING.

Interesting Sport at the Seventh Annual Meeting.

SUCCESSFUL COMPETITORS. — (Left) D. Froy (Wolseley) who won the 50-mile handicap, and (right) J. Boyd-Carpenter (Austin Seven), winner of the first and third races. The main picture shows a duel between a Frazer-Nash and a Bugatti.

THE Surbiton Club is one of the select few local clubs to which is regularly granted the privilege of holding meetings at the famous track. They are delightfully informal affairs, where everybody knows everybody else and people call each other by their Christian names. Saturday afternoon was cold, windy and cloudy, but, fortunately, the rain held off. All races at the meeting began and finished at the fork.

There was a large proportion of light cars in the first race, the outstanding performance being put up by J. Boyd-Carpenter, in his Austin Seven. E. J. Crickmay, driving what appeared to be a practically standard Morris-Cowley, fitted with a racing body, was the limit man, with a start of 1 min. 18 secs., and after him came J. Boyd-Carpenter in the Austin with 1 min. 2 secs.

Crickmay kept his lead well for the first lap, and passed the fork with nearly a quarter of a mile in hand, hotly pursued by Boyd-Carpenter (Austin), who gained steadily, and finally overhauled him on the banking. The result was an easy win for Boyd-Carpenter, Vernon Balls (Amilcar) coming in second. The winner's speed was 74.22 m.p.h.

The second race, the Surrey Senior Short Handicap, provided the only close finish of the meeting, and a spectacular duel between two light cars—Capt. Frazer Nash (Frazer-Nash) and C. W. Johnston (Bugatti). Nash, Johnston and F. Watley, driving a big Stutz, were limit men, away together with 48 secs. start. Johnston had established a slight lead by the time the three cars had reached the banking, and this he maintained.

Johnston and Frazer Nash continued the chase for the remaining lap, but their positions remained unchanged, Johnston winning by rather more than a length.

The third race, in which there were six starters, was a light car race pure and simple. Boyd-Carpenter's fine win

in the first race did not seem to have attracted the attention of the handicappers, the result being that he easily held his lead as limit man throughout, and won easily, with Vernon Balls second and G. E. T. Eyston (Aston-Martin) third. The winner's speed was 76.39 m.p.h.

In the fourth race, of three laps, there were only two light car starters, B. C. Lewis (Bugatti) and G. E. T. Eyston (Aston-Martin), but neither was placed, the race being won by J. R. Cobb (10,087 c.c. Fiat), with Kaye Don (Sunbeam) second.

The fifth race, of four laps, was not interesting from a light car point of view, the large cars getting things pretty much their own way. Three light cars started—A. P. Glenny (Frazer-Nash), B. Eyston (Aston-Martin) and V. Balls (Amilcar). Even the last-named, who had done very well in earlier races, succeeded only in coming in fourth. The race resulted in an easy win for Mrs. Scott (1,900 c.c. Bugatti), G. E. T.

Eyston, scratch man (2,263 c.c. Bugatti) fought a desperate battle, but his handicap proved too much for him, and he finished second, with Kaye Don third. The winner's speed was 92.92 m.p.h.

The sixth race, a 19-lap handicap, was, of course, the pièce de résistance of the afternoon. Of ten entrants there were eight starters, six of these being under 1,500 c.c. engine capacity. J. Boyd-Carpenter's Austin was driven by E. F. Phillips and, presumably, on account of its previous successes during the afternoon, was rehandicapped, forfeiting an extra 1 min. 54 secs.

D. Froy (Wolseley), who turned out to be the winner, had things pretty much his own way right through the race. He established a lead from Elford, the limit man, in the twelfth lap, and from then on steadily increased it. He won by 1 min. 8 secs., R. F. Oats (1,991 c.c. O.M.) being second. Nearly half a minute behind him came Hallam (Alvis). The winner's speed was 82.31 m.p.h.

Searching Singer Junior Test.

AN ambitious project has just been undertaken by the drivers of two 8 h.p. Singer cars. They have set out to encircle the coast of England, Wales and Scotland—a total distance of 3,429 miles, averaging 250 miles per day.

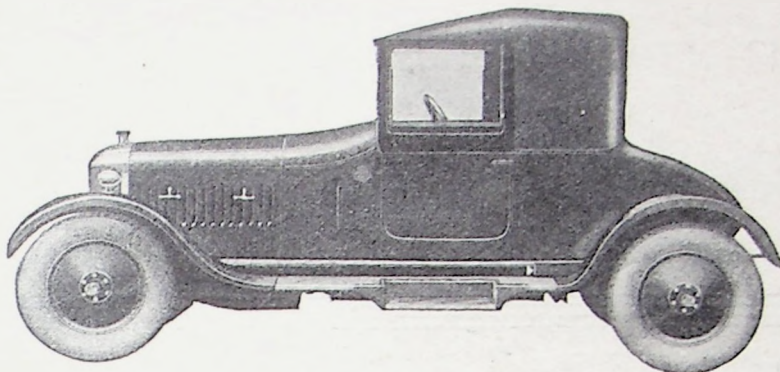
The two drivers—Miss D. V. Carr and Mr. R. Bicknell, left St. Georges Hall, Liverpool, just after mid-day on Thursday, April 21st, Mr. Bicknell taking the northward route via Southport, Blackpool, Lancaster, Carlisle, Dumfries and so on round the coast of Scotland.

Miss Carr takes the southward course, through Chester, Llandudno, Bangor, Carnarvon, Machynlleth, Carmarthen, etc., and round the coast into Devon and Cornwall.

If everything goes off "according to plan" the cars should meet again at Liverpool approximately a fortnight after their start.

Of course, the rough roads and heavy going in some of the hilly parts of Scotland may cause considerable cutting down of the projected 250-mile daily average, but there is, on the other hand, the possibility of making up a leeway on some of the easier parts of the journey.

It will be most interesting to see whether the cars arrive at Liverpool again after completing the journey in approximately equal time. If they do, the reliability of the latest true economy car will be established in no uncertain manner. We hope to publish further news of the cars next week.



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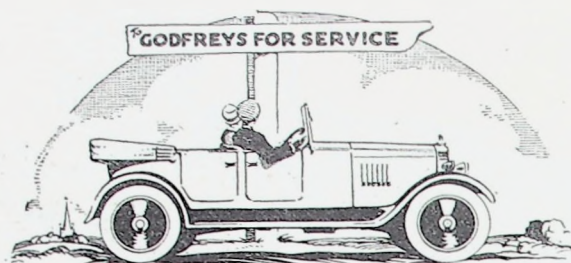
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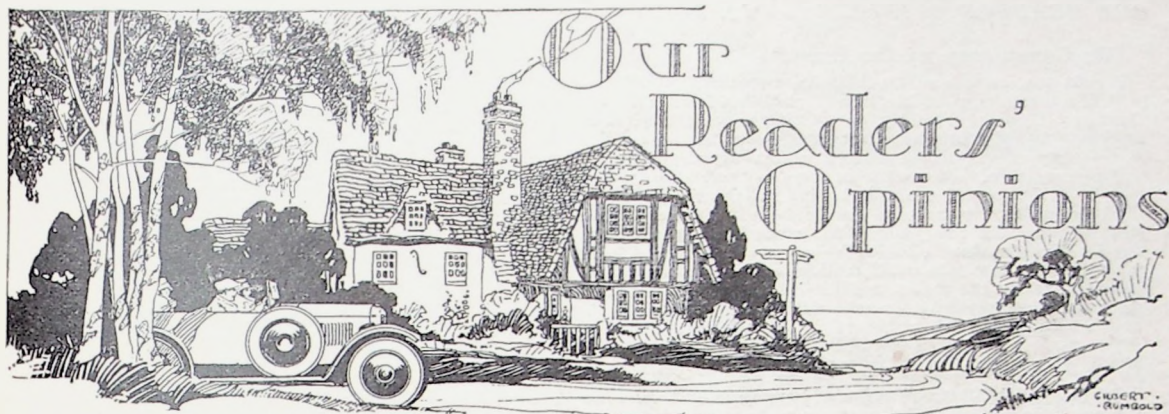
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We welcome letters for publication in these columns, but take no responsibility for the opinions expressed. No anonymous communications will be accepted, but writers may use a nom de plume. To ensure publication in the next issue letters should be addressed to the Editor, "The Light Car and Cyclecar," 7-15, 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.

AIR v WATER COOLING.

Readers Favour Air for Low-priced Small Cars.

Satisfactory for Aeroplanes.

I was very interested in the letter from "Bebe" and the reply from "Jowett." If air-cooling is so unsatisfactory, why was Sir Alan Cobham so successful in his recent flight to Australia and back? His machine

Oil Consumption was fitted with an Armstrong Siddeley Discussed. Jaguar air-cooled engine. Why an air-cooled engine should require any more

starting than a water-cooled one I fail to see.

With regard to oil consumption, I think that if a good many owners of water-cooled cars took note of their oil consumption for average mileage run they would have rather a shock. It seems to me that if one has a Belsize-Bradshaw car, which is air and oil-cooled, one always thinks about oil consumption, but if the car is water-cooled one keeps topping up the sump with odd half pints and quarts of oil and disregards the mileage run.

If "Jowett" had been present at a recent run of the Belsize-Bradshaw Light Car Club he would have been agreeably surprised at the quiet running of the members' cars. As an engineer, my experience of the popular makes of car is that they require decarbonizing every 4,000 miles; in view of this "Jowett's" statement that air-cooled engines need decarbonizing about five times as frequently as water-cooled seems rather an extravagant one.

Again, why condemn all motorcycle engines? If as much time and money had been spent on air-cooled cars as has been spent on water-cooled types they would have been in a more advanced state than their rivals. P. H. MCKEY.

Pros and Cons Summed Up.

Having had considerable experience of both air and water-cooled engines I am inclined to agree with your correspondent "Jowett" in his condemnation of the former type. Air-

Water-cooling certainly has the advantage of simplicity (and, therefore, lower cost), whilst another point in its favour is that the engine warms up more quickly

from cold. Here its advantages end. So far as cooling efficiency goes there is nothing to choose between the two systems, for a properly designed air-cooled engine is no more likely to overheat than a well-designed water-cooled unit, whilst, in my experience, both types score equally so far as starting is concerned.

Now we come to the disadvantages of air-cooling. In the first place the absence of the deadening effect of a water-jacket makes valve clatter and so forth more prominent; this is not very noticeable when the engine is new, but after two or three years' use the difference in mechanical noise

between a water and an air-cooled engine is very marked. Secondly, air-cooled engines as a general rule need decarbonizing after every 2,000-2,500 miles, whereas with water-cooled units the usual figure is about 6,000. I know that in individual cases these figures do not apply, but I am speaking generally. The third point concerns oil consumption, which is unquestionably heavier with air-cooled engines.

J. N. STREET.

"Jowett" Taken to Task.

Your correspondent "Jowett," whose letter was published in a recent issue of *The Light Car and Cyclecar*, evidently has not had much experience of air-cooled engines

"Too Dogmatic." and is too dogmatic in his assertions. Having had considerable experience of both types of engines myself, I am convinced that although an air-cooled engine

is noisy, requires more oil and needs decarbonizing every 2,000 miles, it is easy to start up, quite simple to keep in adjustment and repair and does not need new valve guides until 30,000-35,000 miles have been covered, or, say, every three years. Neither does the public condemn air-cooling; practical motorists will confirm my statements.

Why are aeroplanes fitted with air-cooled engines if this type is out of date and unsatisfactory? FALCON.

Air-cooling Vindicated.

"Jowett's" condemnation of air-cooled engines is, in my experience, unjustified; after almost four years day and night use in medical practice in a very hilly district my air-

7,000 Miles cooled car is still giving uniform satisfaction. The car has been out of action on one occasion for five days for renewal of axle swivel pins and on two succeeding Sundays a year ago when coats of paint were drying, otherwise it has been on the road every day. Over 60,000 miles have been covered and decarbonization is only necessary after each 7,000 miles or so.

Without Decarbonizing. I had expected that the engine would need a thorough overhaul after two or three years' use, but this is still being put off indefinitely, a recent inspection showing practically no wear in the big (roller-bearing) or small ends, or in the crankshaft (roller) bearing, whilst the piston rings are still in excellent condition. There has been no need for provision of new valve guides. The compression is apparently as good as ever and starting as easy as in the first year.

I am very doubtful indeed whether any water-cooled car in the cheap car class could give such service as I have had from a—

B.S.A.10.

B41

OUR READERS' OPINIONS (contd.).

"The Conspiracy of the Road."

Permit me, as one of the unlucky motorists referred to in "The Conspiracy of the Road" published in *The Light Car and Cyclecar* recently, to thank you very much for the excellent articles, written especially for beginners, which appear in your journal from time to time. I may say

An Appreciation.

I am still hoping for the time when I shall derive enjoyment as a change from anxiety and misfortune upon the road, and I felt much like giving it up but for the stimulant afforded by your contributor. There must be very few who could truthfully deny having passed through exactly the stages mentioned by him, yet every day we meet those queer beings who tell us that after half an hour's tuition they felt at home!

P. FREDK. VISICK.

Why Not "Free Wheels"?

In the "Rich Mixture" pages of your issue of April 22nd "Focus" points out the advantages to be gained by adopting a free-wheel device on cars. Although I generally agree with what he says, and consider his

The Idea Condemned.

views on motoring matters are sound on the whole, I cannot endorse his remarks in this instance. In my opinion, the disadvantages of a free-wheel device in the transmission would outweigh any advantages he claims.

One would be entirely dependent on the efficiency of the brakes when descending steep hills, and if they were not in proper adjustment the results might be disastrous. A great deal more wear and tear would be thrown on them, resulting in more frequent adjustment and renewal of the linings. The great safety precaution of engaging a lower gear and utilizing the retarding effect of the engine when descending very steep hills would no longer exist.

As regards the advantages he claims in the saving of

petrol, what is the objection to coasting down hills with the gears in neutral and the engine idling or stopped? I do this habitually myself, with excellent results. If the hill is very steep I open my Bowden air valve wide, engaging a lower gear if necessary, and thus not only save petrol but cool and scavenge the engine.

I consider coasting down hills that are not too steep is an excellent practice, because not only does it save petrol, but it relieves the transmission of reverse strains, gives the engine a temporary rest and enables one to enjoy high speed without the attendant noise and vibration of a fast-revving engine.

To give further point to these remarks I might state that my 1924 11.4 h.p. four-seater Standard averages over 40 m.p.g., year in, year out, and has now completed 21,000 miles without relining the brakes, which act only on the back wheels in this model. In addition I am still running on three of the original Dunlop Clipper cord tyres and have bought only one new one.

R. B. TYBRELL.

The Noise of Tyres.

I am exceedingly interested in the comments of your contributor, "Focus," upon noisy tyres. In connection with my experiments upon tyre wear, of which a brief summary of results was recently published in *The Motor*, I made some audiometric tests

Its Connection with Wear.

upon tyres with different treads. It is undoubtedly important to remember that noise implies wear and that a tread should, consequently, be designed in such a manner that air can escape without undue impact.

Modern tyres are usually reasonably silent, a particularly successful example being that of the improved Dunlop tread. Some noises, although themselves inaudible, act as carrier waves to other sounds and cause a particular class of oscillation to reach the ears of the passengers at the expense of wasted energy, and with the result that conversation becomes most fatiguing.

A. M. Low.

Timing Speed Events—The Public and Trapping.

The Degree of Accuracy.

In the motor supplement of *The Times*, issued on April 5th, there appeared an interesting account of recent speed records. Having explained the difficulty of timing such events with a stop-watch, a brief description was given of the electrically

Measuring the Course.

operated chronograph which is always employed. This was rounded off with the statement, "Error is impossible." Later, in a reference to Major H. O. D. Segrave's splendid achievement at Daytona, it was stated that the mile was covered at a speed of 203.988 m.p.h.

Now, every student of physics who has had anything to do with the measurement of space and time knows that error is inevitable. Absolute accuracy in these measurements is quite impossible; it is only a question of degree.

Although I have not had the privilege of examining the timing apparatus in question, I have had practical experience with electrically operated chronographs used in other departments of life, and my own impression is that an accuracy greater than one-hundredth of a second cannot usually be obtained. Similarly, those who have had experience of preparing base lines for survey work will appreciate the difficulty of laying down a mile correct to a few inches.

In order to express a speed correct to six significant figures, as is done in giving it as 203.988 m.p.h., it would be necessary to measure the mile correct to $\frac{1}{4}$ in. and record the time correct to one ten-thousandth of a second.

A simple calculation will show that, in the case under consideration, an error of 1 in. in the measured miles would have brought the speed to 203.985 m.p.h., while an error of one-thousandth of a second would have made it 203.976 m.p.h.

The point to which I wish to draw attention is this: if the means used to measure the mile and record the time in an event of this kind are of an accuracy sufficient to justify six significant figures in the result, a published description of them would be of very considerable interest. If, on the other hand, the methods are no better than those available in other departments of human activity where careful measurement of space and time is necessary, would it not be better to give Major Segrave's speed to, say, four-figure

m42

accuracy, that is, 204.0 m.p.h. or 203.9 m.p.h., if that is considered preferable?

A.H.S.
* In the official acknowledgment of Major Segrave's record the speed for the mile is given to seven significant figures (203.7928), a fact which lends further point to our correspondent's arguments.—ED.

Watching Police Traps.

Your recent paragraph entitled "A Sabbath Industry," in which you state that large numbers of people spend their Sundays in watching the police traps in operation on the London Road, Bromley, Kent, and on

Spectators' Reasoning.

Bromley Common, once more shows up the utter futility, if nothing worse, of police traps. Surely this sort of thing brings the police into disrepute and tends to bring about a general contempt for the law.

Most of the spectators, no doubt, are law-abiding citizens who have a profound respect for both the police and the laws which they are employed to enforce, but do they go away from their entertainment with the same feeling? If they are non-motorists their first thoughts will probably be: "serve these dangerous drivers right; it is about time they were stopped." But having seen a large number of perfectly normal and apparently sensible and honourable men all stopped for the same offence, it must occur to them that perhaps it is the law which is at fault and not the individuals who break it.

Again, if they are thinking people, it may also occur to them that although legally 20 m.p.h. is the speed limit it cannot necessarily be dangerous to exceed it, because all those who are stopped by the police are certainly not reckless fools. The next point about which they will think, probably, is that if it is safe to exceed 20 m.p.h., why is the limit so rigorously enforced? Is it so that the law shall be obeyed to the letter, or that motorists form a useful source of revenue?

Perhaps I am all wrong, but it seems to me that a number of people watching traps must think along these lines, and if they do it is not good either for themselves or for the community at large. I trust that responsible officials will bear my criticisms in mind.

A COUNTRY PARSON.



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WOLSELEY

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

OUR READERS' OPINIONS (contd.).

"Motorists and Animals."

I presume it was a sub-editor who gave to the letter from Captain E. G. Fairholme, of the R.S.P.C.A., the heading, "Motorists and Animals," but, even so, the tone of the letter suggests that he may see an affinity between the two. It would be interesting to hear from Captain Fairholme exactly how many complaints of motorists acting in the heartless manner he describes have been received by the R.S.P.C.A., and whether their number has been sufficiently large to make it really necessary to "plead" for motorists to take more care. I have never yet met a driver who has not exercised every possible precaution to avoid running over an animal, and it is difficult to conceive anyone being reckless on this score, if only for the sake of the safety of his own skin.

A Reader
Retorts.

W. A. WALKER.

The Road Fund Raid.

Mr. Francis Warwick's letter in last week's issue of your journal expresses the opinion of a good many motorists and others. As a member of a large highway authority I have often expressed the following opinion on the use of our roads:—Through motorists having had to pay such a heavy taxation to make the roads of the country what they are to-day cyclists have got better roads to ride on than they ever dreamed of 20 years ago. Now, why should they not pay their fair share of the cost?

I pay £8 a year for my small car being on the roads. My neighbour has from 12 to 15 horses, with the necessary carts and so forth, and causes the ratepayers in general to pay for the cleaning up of the roads made necessary by their use by horse traffic and for keeping them in repair, without him paying anything himself. The farmer takes his cattle along the highway, makes the road insanitary and causes a great deal of inconvenience to other traffic, but gets off by paying only one-quarter of his rates. Surely it is time that every person who has horse-drawn vehicles should pay a fair road tax.

A COUNCILLOR.

The Electrolite Level in Batteries.

In his letter appearing in your issue of April 15th Mr. A. R. Watson asks why it is that battery manufacturers leave so little room for electrolite above the plates in an accumulator. Your editorial reply dealt

Correcting the Specific Gravity.

with the matter from the electrical point of view and from that of standardization, but a still stronger reason is that in a comparatively small accumulator an extra inch of free electrolite above the tops of the plates represents a considerable percentage of the total amount. The electrolyte is a mixture of sulphuric acid and water. Only the water evaporates, leaving strong sulphuric acid behind. If at the suggested maximum level—1½ ins. above the plates—the electrolite be of the correct specific gravity, say, 1.280, then, by the time the electrolite had evaporated to the top of the plates, the specific gravity would have increased to 1.350. This latter specific gravity would be too high and injurious to the cells.

E. C. MCKINNON, M.I.E.E.

Lowering the Propeller Shaft.

In the interesting remarks by "Focus" on the question of lowering the propeller shaft we noticed the statement that the use of a new type of spiral bevel gear enables a propeller shaft "almost as low" as that of an underslung worm gear to be employed. We think that the use of the word "almost" in this connection is

rather an overstatement, for where an underslung worm gear may enable the propeller shaft to be dropped some 4½ ins., a skew bevel gear cannot economically be made to give an offset greater than about 2 ins. The difference between 2 ins. and 4½ ins. is very considerable, and can make all the difference to the appearance of a car.

There is no doubt that the tendency towards lower lines is a very real one, and whilst there may be other difficulties in the way, the question of the disposal of the propeller shaft finds so simple and efficient a solution by means of the worm drive that it has already been adopted by three American passenger cars of recent introduction.

D. BROWN, Director.

For David Brown and Sons (Huddfd.), Ltd.

Alas my poor Beret!

Where, and O where has my nice Beret gone?
O where, and O where can it be?
With its colours so bright and its tassel so long
Alas, no nice Beret for me!

Whence, and O whence has the vogue for them fled?
O where, and O where can it be?
For Berets have gone now the pash, for 'em's dead,
So I've buried my Beret, you see!

H.B.

Laur Robert

If recent Brooklands meetings can be taken as a guide, the Beret will not be so popular this year.

OUR READERS' OPINIONS (contd.).

High Mileages at Easter.

Who covered the largest mileage over the Easter weekend? My wife and I did 867 miles between Friday and Monday on our two-seater Jowett, going right down to Land's End and then along the south coast. We seemed to have plenty of time to visit various interesting places, and the good old Jowett behaved splendidly, never faltering once.

FRANK BORROW.

The Monocar—The Vehicle of the Future.

In his remarks about the Harper runabout, your contributor "Shacklepin" brings up an interesting point. He wonders if it was the appearance of the Harper runabout which robbed it of the popularity which he considers it deserved. I think, emphatically, that the answer is, "yes."

Public
Prejudice.

and I would go further and say that I think it is on the question of appearance that a number of promising designs fail. In other words, the public has not got used to a particular idea—be it good or bad—and therefore views it with either disfavour or ridicule. In my opinion, a monocar would have a very promising future if a practical design were only put on the market by a manufacturer who already has a name for sound design and workmanship, and who has the money to advertise it



A reader's Jowett photographed near the lighthouse at Portland Bill. The car is four years old, but its owner informs us that during a run from Bristol to Portland with a full load of four its petrol consumption worked out at 39 m.p.g.

so extensively that the public will become used to it and weigh up its pros and cons in an unbiased manner.

I am sure that there must be many thousands of people who would welcome such an innovation, provided that their support of the idea would not bring ridicule upon themselves. All over the country there are men who have to make a journey of from five to ten miles to their work every day, and who find public conveyances uncomfortable and generally inconvenient. They do not like to ride a motorcycle, for they fear—somewhat unnecessarily, in my opinion—trusting themselves to two wheels when the roads are wet, and in any case the lack of weather protection robs the motorcycle of their support.

The monocar would be just the thing for them, and if properly designed should be practically as cheap to run as

B46

the average solo motorcycle; it would require very little space for garage and could be kept in a shed at the side or back of their houses. It would save them countless hours in travelling in the course of a year, would probably save them money, and would certainly result in their being in better health.

Now, just a word to any "big manufacturer who thinks my ideas are right and proposes to produce a monocar—make it as simple as possible, but a sound engineering job, and do not over-elaborate it and let it "grow up" into a fully fledged small car.

H.C.

Southport Club's Car Meeting.

In our list of events this year we have a race meeting, for cars only, on the beach at Southport on June 4th. As this is our only "cars only" meeting in the year we want at least one novel and attractive feature. It has been suggested that this should take the form of a 100-mile race. For such a race faultless organization is essential or the event drags horribly—dissatisfying the competitors and boring the spectators.

Suggestions
Wanted.

In the circumstances my committee are anxious to take time by the forelock and get the general idea out and dried. We would very much like the opinion of your readers if you will be so good as to invite answers to the following:—

(1) Should such a race on a sand course be purely laps or should cornering obstacles be erected to break up each straight mile (an ordinary unadorned lap is two miles)?

(2) If the race consists purely of laps, should the corners at each end of the straight mile be sharp turns round a single flag or should they be radiused out with many flags—if so, what radius?

(3) Would flags be sufficient obstacles or would empty horse lorries be better? (We cannot contemplate making sand bunkers, because the tide does not always leave us sufficient fairway outside the ordinary lap course which must be available for the 10-mile events.)

(4) General suggestions.

G. HARVEY KELLY, Chairman.

The Southport Motor Club.

** We shall be glad to publish letters from readers on this subject.—Ed.

CONDENSED CORRESPONDENCE.

Messrs. H. Beart and Co., the Morgan specialists, write to point out that the particular steering gear, the failure of which caused A. C. Maskell's crash on Beggars' Roost in the Land's End run, was not of their manufacture or fitting.

In the course of a long letter giving his experiences of the 9 h.p. Sénéchal, with which he is very pleased, Mr. C. P. Thursby praises the spare-parts service of the Automobile Service Co., Ltd., 166, Great Portland Street, London, W.1, who hold a comprehensive stock of spares and have always supplied him with any parts which he needed by return of post.

INFORMATION WANTED.

WILTON.—An instruction book for the 1921 11.9 h.p. model is wanted.—J. P. Cox, 54, Hill Lane, Southampton.

SWIFT.—The opportunity to buy or borrow an instruction book dealing with the 1925 10 h.p. model would oblige.—Herbert J. Hobbs, 27, Coronation Road, Southville, Bristol.

CALCOTT.—Any reader who is willing to lend or sell an instruction book for 1921 11.9 h.p. model is asked to communicate with—the Rev. P. Livingstone, U.F. Manse, Acharacle, Argyllshire.

COVENTRY PREMIER.—Any reader who has an instruction book of the three-wheeler model which he is willing to lend or sell is asked to communicate with—A. W. Sneed, Model Cottage, Farnborough Green, Hants.

PEUGEOT.—Owners' experiences of the 7-12 h.p. cabriolet model, with particular regard to reliability and hill-climbing powers, together with hints on maintenance, would be very much appreciated.—W. Lawson, 22, Pendennis Street, Anfield, Liverpool.

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Specially designed for Austin 7 cars. The can fits up against the front of the off-side mud wing, the capacity being one gallon. Finished black enamel with nickel-plated carrier and cap. Price 8/6 post free.



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AUTOSCOPE
JUNIOR DRIVING
MIRROR.**

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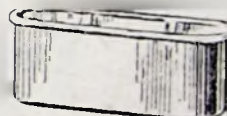
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B47

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old car—**

**And you want to buy a new
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150



CLUB ITEMS

Reports and Announcements of Sporting and Social Events.

SILLOTH M.C.

The season opened on April 17th with a run to Gilsland, when 28 members took part. The outward journey was by Carlisle and Bampton, and the return journey to Lanercost.

DUNSTABLE AND D. M.C.

A hill-climb will be held near Dunstable on May 1st starting at 3 p.m. The hill is being lent by the British Portland Cement Co., and the proceeds will be given to the Bute Hospital, Luton. The event is open by invitation to the following clubs:—Bucks County, Berkhamsted, Watford and Mid-Bedford.

BIRMINGHAM M.C.C.

The Birmingham motorists' eighth annual charity gymkhana will be held this year on Saturday, April 30th, at King's Heath Recreation Ground, Alcester Lanes End, Birmingham, and will commence at 2.30 p.m. The proprietors, the Birmingham Motoring Club, Ltd., promise some thrilling and spectacular events, including a motorcycle football match.

LEICESTER AND D. M.C.

The list of events for May commences on the 1st with a junk hill-climb at Denton near Grantham, and on May 8th there will be a Chinese hill-climb and football and polo matches. The start is at Weighbridge at 2.15 p.m. On May 15th there will be a paper-chase, and on the 22nd a run to Normanton-on-Soar. The event of the month is the night trial taking place on May 28th and 29th. The start is from Western Park Terminus at 9.45 p.m. and the run will consist of about 150 miles of main roads.

WOKING AND D. M.C. AND C.C.

At the recent annual general meeting the officers elected for the ensuing season were:—Hon. secretary, Mr. Brian Kinnell, Carstock, Oriental Road, Woking; hon. treasurer, Mr. H. W. Lambart, F.C.I.B., The Grove, Horsell, Woking; hon. trials secretary, Mr. Eric S. Huthorne, 53, York Road, Woking; hon. assistant trials secretary, Mr. W. G. Godley, Railway Hotel, Woking; and captain, Mr. F. N. Wood, Broom Lodge, Partmore Park, Weybridge. A very interesting and comprehensive programme is being arranged and will be published shortly.

KENT AND SUSSEX L.C.C.

The Kent and Sussex L.C.C. will be holding a series of speed trials on Race Hill, Lewes, on Saturday, April 30th, the first event commencing at 2.30 p.m. There will be 13 general events for cars up to 1,500 c.c. Five of the events will be stop-and-start classes, the competitors having to draw up in a marked section in the middle of the course and start away again. Prizes instead of medals will be given as the first awards in each event, and the Baker Challenge Cup for the best performance by a sporting car (club members only), and the Normanhurst Challenge Cup for the fastest time in the racing classes (club members only) will be the premier awards. There will also be a special cup for the fastest time for the members of other clubs competing. Members of the Brighton and Hove M.C., the Eastbourne M.C. and the Essex M.C. are invited.

LEEDS M.C.

The "100" Cup Trial has been postponed until May 29th. Already considerable interest is being shown in the Golden Trial fixed for May 8th and an R.A.C. permit has been obtained. There are classes for cars and three-wheelers, and the main-road course of approximately 150 miles will be followed, lunch being taken at Scarborough. The closing time for entries is Friday, May 6th, first post. For the best performance in any class will be awarded the Golden Trophy and Tankard to be held for one year. The first prize in each class will be a club tankard. Post Hill will be the venue on Saturday, May 21st, for the second of this season's racing climbs. Sand racing at Bridlington will be held on June 5th and on Whit Tuesday the third Post Hill meeting will take place. There is to be another open event there on Saturday, July 2nd. A novelty team trial is being arranged for June 19th and on June 24th and 26th the Leeds-London-Leeds 24-hour run will be held. Excursions to the Isle of Man for the T.T. week and a day trip for the Senior race are pending arrangements. In July the Leeds to Edinburgh run is being held as a two-day social event and a one-day trial combined.

J.C.C. LIVERPOOL AND NORTH WALES CENTRE.

A rally will be held at Knutsford on Saturday, April 30th, at which a presentation will be made to Mr. S. W. Phillpott, the retiring secretary and part founder of the Centre.

FORTHCOMING EVENTS.

April 30.

J.C.C. Spring Meeting.
North London M.C. Froth Blowers' Trial.

Second Wessex Centre League Trial.
Kent and Sussex L.C.C. Speed Trials.
North London M.C. Reliability Trial.
Sheffield M.C. Carnival Dance.
J.C.C. Yorks Centre, Mystery Event.
J.C.C. Liverpool and North Wales Centre, Rally at Knutsford.

May 1.

Liverpool M.C. Blake Cup Trial.
Sheffield M.C. Treasure Hunt.
Huddersfield and D. M.S.C. Semi-Sporting Trial.
Brighton and Hove M.C. May Day Trial.
Woolwich M.C. Open to Centre Trial.
Cafford and D. M.C. Run to Brighton.
Fresham Camp Trial Re-run.
Oxford M.C. Early Morning Run.
Dunstable and D. M.C. Hill-climb.
Annan A.C. Opening Run.

May 7.

Southport M.C. Race Meeting.
Essex M.C. Brooklands Six Hours' Endurance Race.

J.C.C. PROGRAMME.

In addition to the dates of the Spring Race Meeting at Brooklands, the High Speed Trial, the Sporting Car Race and the seventh 200-Mile Race, which have already been announced, the Junior Car Club's fixture list includes a number of social functions, outstanding among which are a treasure hunt and dance at Stevenage on Saturday, May 14th, Henley Regatta rally on July 2nd, a wireless picnic at Epping on July 24th, and an Exeter rally on September 3rd. The closing rally and dance at Burford Bridge is on October 1st and the annual dinner and dance on December 9th. It is announced that special J.C.C. parking arrangements will be made in connection with the Derby and Ascot if there are sufficient requests.

CUMBERLAND COUNTY M.C.C.

The following completed the course without the loss of a mark in the annual one-day main road reliability trial, held in the Lake District on Good Friday—A. F. Morton (lover Nine), I. H. Hickson (Pover Nine), and H. Buckton (11.9 Morris-Cowley).

HUDDERSFIELD AND D. M.S.C.

The first hill-climb of the recently formed Huddersfield D. and M.S.C. was held on their private hill at Dalton Bank on April 16th, when there were about 6,000 spectators present. In the solo event for cars Dr. J. S. Fulton (Fraser-Nash) was the only competitor to reach the top of the hill, where the gradient is 1 in 1½ for 25 yards on a clay surface.

LANTILLAR M.C.

A very enjoyable run took place on the recent opening all-day event, when 30 members toured a circular course, stopping at the Bull Hotel, Royston, for lunch and tea. Those who are interested in this club are asked to communicate with the Hon. secretary, Mr. H. F. Butcher, 28a, The Promenade, Palmer's Green, London, N.13.

J.C.C. YORKS CENTRE.

A mystery event will be held on Saturday, April 30th, starting from Five Lane Ends, Westwood Lane, Headingley, Leeds, at 2.30 p.m., and tea will be served after the event, which is open to all members. The secretary's announcement states that maps, compasses, telescopes and sheeting anchors may be used, and an unlimited number of competitors may enter. Whatever the weather the event will be held, and if the conditions are unfit for sporting work a social event will be arranged.

LIVERPOOL M.C.

A prospectus of the restricted and closed race meeting to be held on Wallacey Sands on Saturday, May 14th, has been received. There will be two races, short and long, and both will include classes for three-wheelers and cars. The short races will be approximately one mile in length, and three-wheelers competing in the long races will have to cover 10 miles and the cars 20 miles. The event is open to car members of the Liverpool M.C., J.C.C. (Northern Centre), Rochdale M.C., and Southport M.C., and the closing date for entries is Wednesday, May 11th. The secretary of the meeting is Mr. F. W. H. Swallow, 31, Turret Road, Wallacey. A series of miniature T.T. races for solo motorcycles will be held in the Delph Tea Gardens, Parbold (between Wigan and Ormskirk), on Saturday, May 21st, at 2.30 p.m.

A.-C.U. NORTHERN CENTRE.

On May 1st the Barrow and D. M.C. and the Lune Valley M.C. have reliability trial, while members and friends of Furness M.C. will join in a social run. The Furness club will hold their closed speed trial at Walney Island on May 8th, while on the same day the Brough and D. M.C. have a reliability trial over main roads and the Cumberland County M.C.C. have chosen this day for their second social run, the venue on this occasion being Ravensglass Bird Preserves. On May 21st the Cumberland club will hold their open Alan Trophy, and in connection with this event the Furness club will be arranging a social outing in addition to a similar run on the following day. The Penrith and D. M.C.'s only event in May is a slow hill-climb, which will be held on the 26th. These clubs have left May 29th vacant in order that their members may take part in the Centre's One-day A. J. Miles Trophy Trial.



ENERGETIC OFFICIALS.

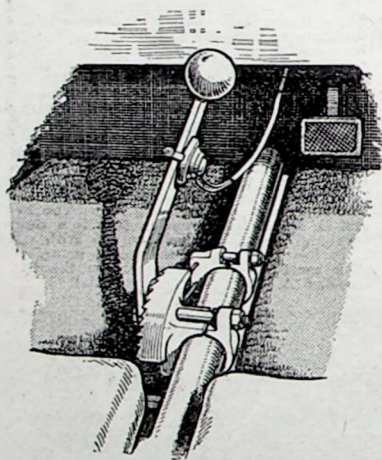
The Disabled Drivers' M.C. held a successful rally near Sevenoaks last Saturday. The officials are (from left to right) Messrs. R. A. Pope (hon. treasurer), L. B. Baynes (hon. trials marshal), B. H. Austin (chairman), and P. Brough (hon. secretary).



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.

For Morgans.

An improvement upon the standard practice of mounting the horn button on the steering wheel of Morgans is to fix it to the front-wheel brake lever. If attached so that the press button is on the driver's side of the lever, it will be found that it is an easy matter to press the button with the left knee. This can be done even when the foot is working the clutch pedal, while, of course, the button is also handy when the lever is being operated to apply the brakes. This position has the advantage that it is not likely to be discovered by mischievous urchins who delight in sounding horns when the owner is not near.



The horn button mounted on the brake lever of a Morgan, where it can be operated by the driver's knee.

Protecting the Paintwork.

In order to preserve the front wings and scuttle-dash from accidental injury while decarbonizing or carrying out a similar job, it is advisable to obtain three large cloths and cut some rubber bands from an old inner tube. The cloths must be fairly large, old sheets or table cloths serving admirably, and they should be draped over each of the front wings and secured in place by slipping bands over the head or wing lamps, the fronts of the guards or any other advantageous points. The third cloth should be laid across the dash and secured by tying down the ends to the running-board supports or side lamps.

B50

Leaky Radiators.

A simple method of stopping the flow of water from a leaking radiator is to insert in the faulty honeycomb a peg of wood bound with a piece of rag which has been well greased. The openings at the back and front of the radiator block should be plugged with some putty, chewing gum or, as a last resort, soap.

Cleaning Upholstery.

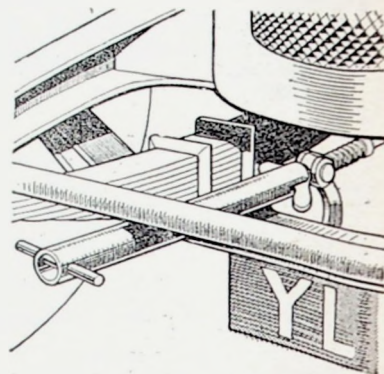
When imitation leather-cloth has become soiled or discoloured it can be cleaned by washing over with warm water, using a piece of flannel. A bar of Monkey Brand soap should be rubbed on the soiled portion of the upholstery until it is clean, afterwards rinsing well with warm water and drying with a clean cloth. The glossy surface can be restored in the usual way by using a good furniture polish.

Preparing Paint Brushes.

The bristles of a new paint brush, especially of the cheap variety, tend to separate into layers at the tip instead of keeping together. This happens particularly with flat and oval brushes, and is not conducive to a very fine finish on the work. Such brushes may be prepared by working them up and down, as though painting, on a piece of rough glass-paper. This wears down the points a little and smooths and polishes any rough hairs. Brushes should be soaked in water and washed before use.

Patching an Outer Cover.

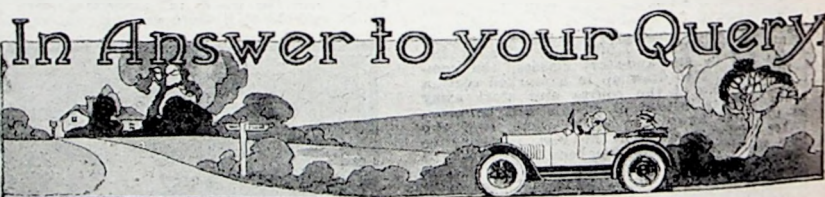
When patching the inside of an outer cover it is a good plan to strap a cylindrical tin, such as a syrup container, inside the tyre so that the curved surface of the tin is in contact with the patch to prevent it curling.



An easily made tool for adjusting out-of-the-way or stiff brake-rod thumb nuts. It is prepared from a length of steel tubing.

Adjusting Wing Nuts.

Difficulty is often experienced in adjusting wing nuts on brake rods, particularly when the threads have become rusted. The nuts can be turned easily and without the operator soiling his clothes by reaching among dirty springs, axles and dumb-irons, if a simple tool is constructed as follows: Cut a wide slot down the end of a piece of steel tubing and drill a hole through the other end. The brake rod fits down the tube and the wings of the nut are gripped in the slot. The rod can be turned by slipping a tommy-bar through the hole at the other end. The tool exerts an even pressure and minimizes the danger of a fractured nut, while it is equally effective where "wings" have already been broken.



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

M.N. (Morecambe).—You can obtain the name and address of the driver whose number you took by applying to the registration authority in question, but you must give reasonable cause for asking for the information and pay a fee of 1s.

D.B.A. (Leeds).—Pre-ignition is certainly the cause of your engine continuing to run for a few seconds after you have switched off. The remedy is to decarbonize or to change the plugs for a type more suitable for the engine.

N.O. (St. Albans).—Weak valve springs are probably the cause of the loss of power of which you complain. In view of the fact that the car has done 10,000 miles, we should think that the fitting of a set of new springs will prove beneficial.

A.G. (Hull).—We regret that we cannot express an opinion upon the value and condition of a second-hand car without seeing it. We advise you to enlist the aid of an independent engineer to inspect, and report on, the condition of your "bargain."

J.U. (Bath).—In one form shims are little steel discs used for obtaining correct tappet clearance on cars not fitted with adjustable tappets. The discs are usually made in varying thicknesses and are placed in a little cup on the end of the tappet or valve stem.

Brooklands Easter Meeting

Wakefield Castrol

was used by the

1st

THOUGH an Aristocrat, Wakefield CASTROL will mix perfectly with other brands of lubricating oil; naturally also one grade of CASTROL will mix with another. As full benefit will not be experienced unless 100% CASTROL is

in use a clean sweep is recommended for immediate results. CASTROL "R" (Racing) only is excepted, and should not be mixed with any other oil or any other grade of CASTROL.

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MORGAN, 1924/5, Family Model, 8 h.p., J.A.P., Lucas dynamo lighting, electric horn, speedometer, wipers, wiper, tax paid for the year, splendidly re-trimmed and in excellent mechanical condition £72 10s.

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RENAULT, 1926, 8-3 h.p., de Luxe, 2-seater Coupe, and sunken dickey, dynamo lighting, balloons, F.W.B.'s, speedometer, wipers, wiper, rigid glass side-screens, leather hood and upholstery, ideal little car £97 10s.

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Choice of another at £87 10s.

AUSTIN, 1923, 7 h.p., Chummy 4-seater, dynamo lighting, good tyres, and of smart appearance. Bargain £60 10s.

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ROVER, 1924/5, 8 h.p., 4-seater, dynamo lighting, self-starter, rigid all-weather equipment, original tyres, beautifully finished, Flat Blue £84
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CITROEN, 1923/4, 11 h.p., 2-seater tourer, dynamo lighting, self-starter, splendid condition £59 10s.

ROVER, 1923/4, Chummy, de Luxe, 4-seater, dynamo lighting and self-starter, clock, speedometer and other equipment, tax paid for year, leather upholstery and all-weather equipment, beautifully finished £59

A.C. 1921/2, 4-seater Tourer, dynamo lighting, self-starter, clock, speedometer, and other equipment, beautifully finished, Royal Blue, smart appearance and excellent mechanical condition £87 10s.

A.C. 1920/1, dynamo lighting, full dash 2-seater and double sunken dickey, good tyre, 2 spare wheels, beautifully finished, very smart £54 10s.

SWIFT, 1923, 10 h.p., 2-seater and double sunken dickey, dynamo lighting, self-starter, rigid all-weather side-screens, bulb and electric horn, speedometer, perfect little car £52 10s.

ROVER, 1923/4, 4-seater, Chummy, dynamo lighting, clock, speedometer, dash light, side-screens, meter, thoroughly overhauled and splendidly coach finished £49 10s.

BELSIZE-BRADSHAW, 1923, 9 h.p., 2-seater and sunken dickey, dynamo lighting, self-starter, beautifully finished Royal Blue, fine condition throughout £59 10s.

BELSIZE-BRADSHAW, 1922/3, 9 h.p., 2-seater, dynamo lighting, extremely smart and very carefully used, electric and bulb horns, speedometer, etc. £38

ROVER, 1922, 2-seater, dynamo lighting, excellent mechanical condition, spare wheel £31
Choice of another at £27

AROUND THE TRADE.

R. A. Martin, who had fitted Premier Vortex silencers to his Aero Morgan, was noticeably quiet on the hills in the Land's End trial.

We are advised that Champion sparking plugs were fitted to the Fiat and Bugatti which were successful in the 1,000-mile cup race at Brescia, Italy, in the 1,100 c.c. and the 1,500 c.c. classes respectively.

Silvertown Lubricants, Ltd., Minoco Wharf, West Silvertown, E.16, notify us that in the recent French T.T. races run for eight days, the only competitors who finished the course in the car class were those who used their product Speedolene T.

Mr. Thomas Gillett, who was for some time a director and general manager of A.C. Cars, Ltd., advises us that he severed his connection with the concern on March 4th last, from which date he states he has had no connection with A.C. Cars, Ltd.

We have received from Messrs. Oyler and Co., 35, New Cavendish Street, Great Portland Street, W.1, a copy of their latest price list. It includes details of the well-known Oyler spring gaiters and upholstery loose covers, radiator muffs, dust covers and other products.

A publication which should be particularly interesting to the mechanically minded and to the trade is a booklet on straight spur gears, with special reference to gear-tooth grinding by A. H. Orent. The copy we have received is well illustrated and contains much technical data.

We learn that Mr. J. B. D'Ardenne, of the Ormond Motor Co., is extending his business to 96, Jermyn Street, Piccadilly, S.W.1. The new company will be known as the Ormond Car Exchange, Ltd., and Austin, Talbot, Renault and Salomon spares will be stocked.

Fort Dunlop notifies us that 33 per cent. of the cars exhibited at the All-Ceylon Motor and General Exhibition, Colombo, were equipped with Dunlop tyres. The first of the signs presented by the Dunlop Rubber Co., Ltd., for the entrances to Stratford-on-Avon has been erected.

Owners of Austin Seven, Singer Junior or other similar cars fitted with gravity-feed petrol tanks will be interested in a patent petrol indicator which is being handled by the Maluzoto Co., 9, Howland Street, Tottenham Court Road, London, W.1. The indicator is priced at 30s. complete.

Dunhills, Ltd., 359-361 Euston Road, N.W.1, are advertising a collapsable table designed to fit the knees, which it is stated, is especially convenient for use in the car, for picnics and for travelling generally. Two are supplied in a leatherette case for 18s. 6d.; one without the case for 7s. 6d.

Messrs. Metro Motors, 45, Newman Street, Oxford Street, W.1, inform us that they have been appointed sole concessionaires for the British Isles by Messrs. Cyclecars D'Yrsan, the manufacturers of the D'Yrsan three-wheeler. They say they have a useful stock of spares for D'Yrsan products and for Ruby engines, and will shortly be issuing an abridged catalogue and a new price list.

Sterns, Ltd., Royal London House, Finsbury Square, London, E.C.2, have issued two useful little booklets for motorists. The first, which is entitled "First Aid for the Car," is a trouble-tracking guide of an unusually exhaustive nature, and it includes a recommendation chart for Sernol oil. The second, "Notes on the Lubrication of Austin Cars," should prove of value to all owners of "Sernols."

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4-Cyl. Type 40
Touring Model
Chassis only.....£325

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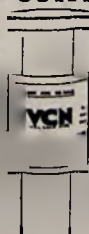
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Top section is used exclusively for food, the lid acting as a serving tray. Centre section is for saucers, plates, cutlery, milk or cream. Bottom section contains special watertight square kettle and teapot combined (1 quart), fitted with folding handle, detachable spout and tea infuser. Guaranteed to boil in 12 minutes. Spirit stove, cruet utensils, boxes for sugar and tea. For 2 persons. Can be carried on running board and secured by petrol can carrier.

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SEVEN

simplicity

IN these little talks the Directors of Pass and Joyce, Ltd., discuss various matters that intimately concern every car-buyer. Motorists and prospective motorists are cordially invited to "listen-in" and gain some useful inside information.

£25 DOWN

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