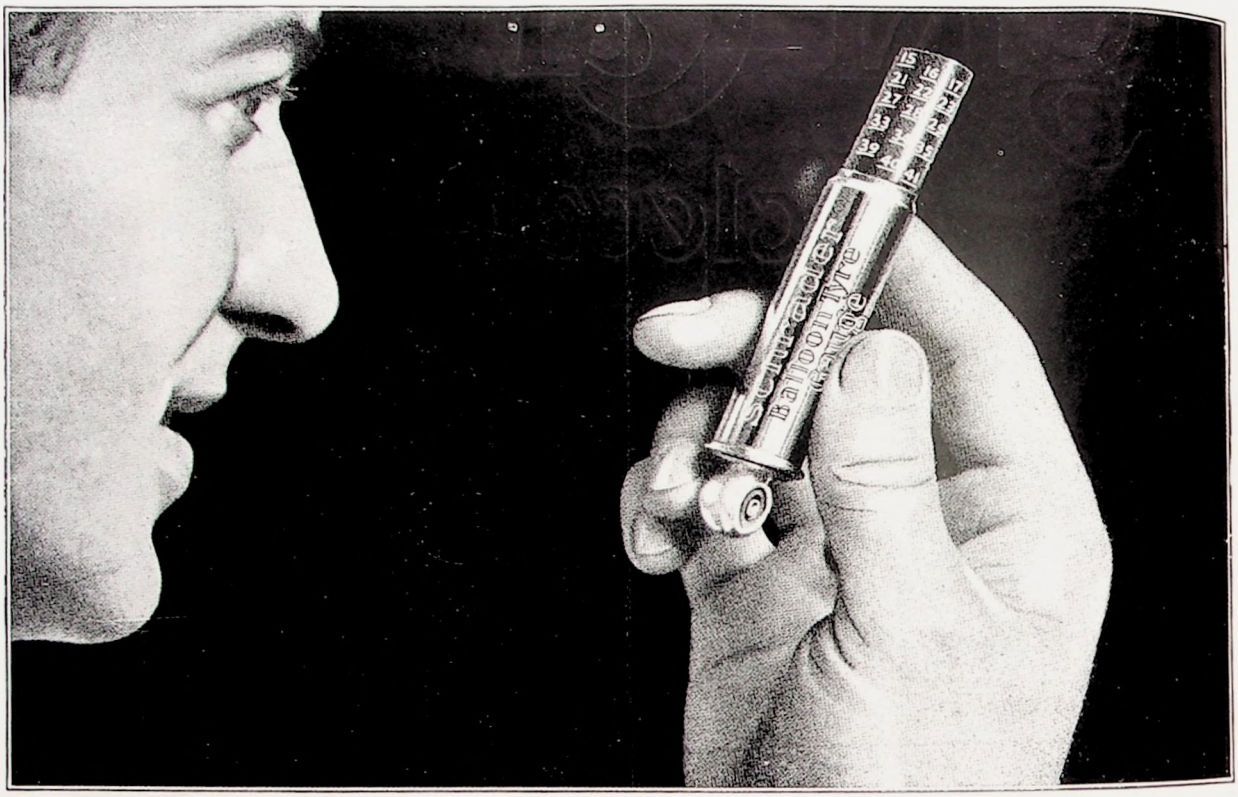
Vol. XXIX No. 735
Friday. Jan. 7 1927
Registered at the GPO
as a Newspaper

WHITE GLOVES FOR SAFETY.

By night as well as by day the most important signal is that which does not [illegible] that a driver is about to turn right. The usefulness of a white glove, which makes quite a good signal easily discernible, is clearly shown in the photograph.



USE your gauge

RIGHT in the hand, being used—that is where a tyre gauge is useful. Merely owning a Schrader Gauge is not enough. The Tyre Gauge that rests in your bureau drawer, or in your garage, or under your car seat, isn't going to help you to correct improper inflation.

Use your Gauge. Let it tell you when tyre pressures are too low or too high.

Give it a chance to warn you that you are hurting your tyres. Let it help you get even inflation. It's not so easy to drive or steer when the tyres are unevenly inflated.

Own a Schrader Gauge and USE it.

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

This Schrader Balloon Tyre Gauge is graduated in 1 lb. units. It is dependable, inexpensive, easy to carry and use. Schrader Gauges are sold all over the world—by more than 100,000 dealers. For Balloons 6/10. For ordinary tyres, 6/2.

Be sure it's a "Schrader": Look for the name
(Regd. Trade Mark.)

JANUARY—

Get in your order now before the rush begins. Do not wait until Spring.

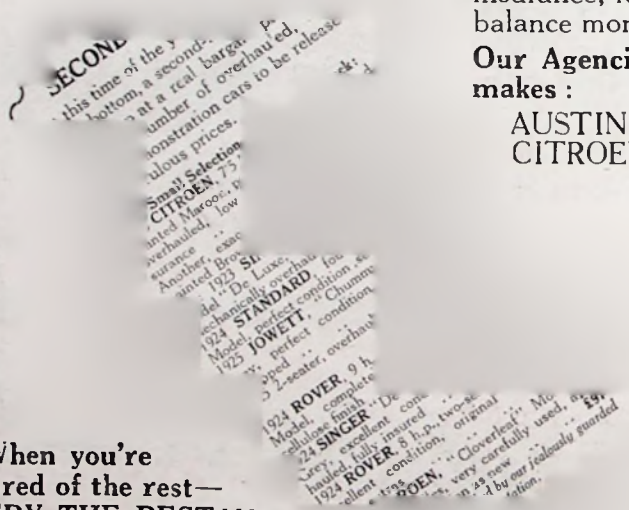
Already our large stock is thinning, but thanks to our extensive contracts reinforcements are daily arriving. We repeat—order now to avoid disappointment.

ENSURE A TROUBLE-FREE YEAR

by owning a car obtained from The Service Co., purchased the "Service Way," and backed by our well-known "Service Scheme." We have one of the largest stocks of 1927 models ready for delivery, and any make can be supplied, including accessories, tax and insurance, for a small payment down and the balance monthly.

Our Agencies include the following leading makes :

AUSTIN CLYNO PEUGEOT SINGER
CITROEN JOWETT ROVER SWIFT



When you're tired of the rest— TRY THE BEST!!!

KEEN BUYERS

We always appreciate keenness on the part of customers to obtain the very best. We lay ourselves out to see that you get the Best Car, Best Terms and Best Service before and after sale. Pay a visit to our Showrooms. See them and try them for yourselves. Our expert salesmen-demonstrators will help you in every possible way.

Remember, there is no obligation to purchase.

"SERVICE—OUR NAME AND AIM."

Telephone : Holborn 0666 (3 lines)

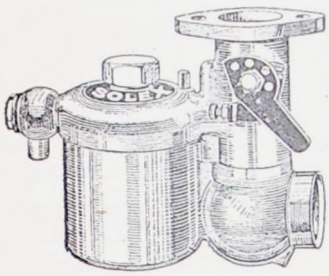
The Service Company Ltd. (LONDON)

Established 1889.

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

RD

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



Are You Wasting This Opportunity?

WE offer a genuine 30 days' FREE Trial of the "Solex" Carburettor as a guarantee of our claim to improve the results on any make of car. Our confidence is based on the simple efficiency of the "Solex" and on the unsolicited testimony of thousands of "Solex" users.
If you want more miles per gallon, added power and speed, better starting and all round improvement, send for particulars of our FREE Trial Offer without delay. The superiority of the "Solex" is indisputable.

FREE TRIAL OFFER.

Write to 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

THE NO-TROUBLE CARBURETTOR

SOLEX LTD.
Director GORDON RICHARDS.

SOLEX WORKS,
223-231, MARYLEBONE ROAD, LONDON, N.W.1.
Tels.:—Paddington 8621, 8622, 8623, 8624, 8625, 8626.
Telegrams:—"Solexcarb, London."

'fit Solex—and note the difference'

Goodall Ad.

IT PAYS TO RETREAD

Buy British Tyres.

DON'T discard your old tyre.

If the casing is sound, let us retread it for you.

We retread any make of tyre in the grooved Non-Skid pattern and make a good job of it, too.

REMEMBER! We return retreaded tyres ***"Carriage Paid" to you.***

Examples of Prices :

700 x 80.. **22/6**	30 x 3 .. **22/6**	32 x 4½ .. **55/-**	26 x 3·50.. **22/6**
710 x 90.. **27/6**	28 x 3½ .. **27/6**	30 x 5 .. **65/-**	27 x 4·40.. **30/-**
815 x 105.. **40/-**	30 x 3½ .. **30/-**	36 x 6 .. **100/-**	29 x 4·40.. **32/6**
820 x 120.. **50/-**	31 x 4 .. **37/6**	715 x 115.. **30/-**	31 x 4·40.. **33/-**
880 x 120.. **55/-**	32 x 4 .. **45/-**	730 x 130.. **37/6**	28 x 4·95.. **37/6**

All tyres for retreading and repairs should be sent Carriage Paid to :—

STEPNEY TYRES LTD., STEPNEY RUBBER WORKS, **WALTHAMSTOW, LONDON, E.17**

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

B5

"How Time flies!"

January—the 7th day—How time flies!

HAVE you thought of the days, swiftly passing, taking us towards Springtime with its renewed energy and buoyant outlook? Fortunate is one with car at hand which like a magic carpet can transport to river, dale or coast at small expense.

Think, too, of the health-giving qualities of motoring: life lived with a zest; back to the Office or Works brimful of energy and fitness. You have promised yourself a car, or change of cars, at the first opportunity. DO IT NOW AND DON'T LET TIME FLY SO FAST THAT YOU LOSE THE ZEST FOR LIFE. Live in the sunshine at every opportunity; store up energy for the Winter months.

There is a wealth of good cars at moderate prices. The best of their respective classes are the AUSTIN, BAYLISS-THOMAS, JOWETT, GWYNNE, AND ROVER CARS. Critical indeed would be the Light or Medium powered car user unable to make his choice from one of these. To those who have interest in other makes, we say we are at your service to supply whatever you require.

A WARNING! There is an acute shortage of steel due to the recent coal dispute. We are fortunate; by anticipating matters with forward contract we are able to offer almost immediate delivery of the makes specified. Your present car can be accepted as deposit and the balance deferred over a period to suit your convenience.

If you require a good second-hand car allow us to send our current list—prices range from £50 upwards. Every used car we sell is subject to R.A.C. or A.A. examination. First-class used cars backed by the old established house of MEBES & MEBES are gilt-edged investments. Whatever you desire in the world-of-motoring we are here to serve. May we hear from you?

Distributors or Agents for Austin, Bayliss-Thomas, Gwynne, Jowett and Rover, etc.

The Pick of the Best after Test of the Rest.

"Say it by telephone."
MUSEUM 4244

Mebes and Mebes
(Est 1893)
144-154-6, Great Portland Street
LONDON
"Metro" station nearest.

Established in Great Portland St. since 1893.

EVER WATCHFUL to give Service.

WHERE THE MONEY GOES.

Large numbers of London motorists call personally at the County Hall to renew their car licences at the beginning of the New Year, and cars of every type may be seen in the queues.

NOTES, NEWS & GOSSIP of the WEEK

Car Improvements.

Details of a novel plebiscite on car improvements, for which prizes totalling £100 are offered, appeared in last Tuesday's issue of *The Motor*.

Level-crossing Congestion.

There is a railway level-crossing within the Greater London area where road-traffic congestion, due to delay in opening the gates, becomes so great during certain times of the day that police control is necessary. It is by no means uncommon for the gates to remain closed to road traffic for fifteen minutes at a time.

This Week.

We include in this issue an article of more than ordinary interest entitled "The Tyre-size Muddle." It presents a very practical method of overcoming numerous drawbacks which the present system of tyre designation involves, and shows how the suggested designation would associate itself admirably with the measurement of gear ratio by inches travelled per revolution of the flywheel. Readers are cordially invited to let us have their considered views on the opinions and suggestions put forward.

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LIGHTING-UP TIMES (Rear Lamps), for Saturday, January 8th.

London	4.36	Edinburgh	4.24
Newcastle	4.24	Liverpool	4.38
Birmingham	4.38	Bristol	4.46

Commendable Ideals.

In his New Year message to the workers at Fort Dunlop, Sir Eric Geddes says: "May our watchword for 1927 be 'Full-time work and the highest quality.'" This is an ideal which we hope will be attained throughout the motor industry now that the general outlook is so much brighter.

Famous French Factories.

In an early issue we shall include the first of a short but interesting series of articles, entitled "Famous French Light Car Factories."

Motoring Honours.

Only three names of particular interest to motorists are contained in the New Year Honours list. Sir Charles Greenway, Bt., chairman of the Anglo-Persian Oil Co., Ltd., receives a peerage, whilst a knighthood has been conferred upon Mr. Duncan Watson, chairman and managing director of the Harley-Davidson Motor Co., Ltd., and upon Mr. John Smith, director of F. G. Smith (Motors), Ltd.

Next Week.

Road engineering in its highest form is exemplified by the fine new arterial roads which are spreading like an elaborate network all over the country, and the system adopted for their construction makes interesting reading. An article, with illustrations showing the progress of the work on the London North Circular road, in various stages, will appear next week. We shall also describe a novel internal-combustion turbine having distinct possibilities.

B9

White-backed Gloves.

The gloves depicted in our front-cover picture are being offered by Dunhills, Ltd., at 15s. a pair, and quite a brisk demand for them has sprung up.

Famous Race-driver "Astonished."

Mr. J. G. Parry Thomas and his record-breaking car, "Babs," were centres of interest at the Schoolboys' Exhibition held at the Royal Horticultural Hall, London. Mr. Parry Thomas is said to have expressed himself as astonished at the knowledge of motoring technicalities displayed by even quite young boys.

Fuel Limit in Racing.

In order to encourage attempts at fuel and oil economy in racing cars the vehicles competing in the race for the Coupe de la Commission Sportive, to be run on the Montlhéry road-racing course on July 2nd, will be limited to a total fuel and oil weight of 97 lb. (about 13 gallons). On this quantity 32 laps of the circuit, equal to 248.5 miles, will have to be covered. Thus a driver can elect to use 10 gallons of fuel and 3 gallons of oil, or 12 gallons of fuel and 1 gallon of oil, and so on, as previous experience with the car may dictate.

Renewing Motor Licences.

For the assistance of the owners of private motorcars and motorcycles the Automobile Association is issuing a booklet entitled "Your Motor Tax at a Glance," which shows the various amounts due for licences, either for the year or shorter periods. Full information is also given regarding the allowances obtainable in respect of old cars, refunds for surrendered licences, and the necessary procedure for renewing licences. Motorists can obtain copies of the booklet, free of charge, upon application by postcard to the Secretary, the Automobile Association, Fanum House, New Coventry Street, London, W.1.

New Welsh Road.

The new Glamorgan inter-valley road is now nearing completion. This highway, which runs from Bridgend, via Nantymoel and Treherbert, to a point between Hirwain and Glyn Neath, has

M. Paul Dumanois demonstrating his safety fuel which we mentioned last week on this page.

largely been cut through virgin country. Over a thousand men have been employed on it for more than two years, but before the original scheme is completed there is already a project for the further extension of the new road into Breconshire, where it will link up with the existing main road between Hirwain and Cymtaff.

A Dance Without Music.

American news headings are always snappy and to the point. Here is one which appeared recently in *The Journal of the Society of Automotive Engineers*: "What Cures Shimmy and Tramp?" The subheading was: "Indiana Section (of the S.A.E.) Seeks to Ban Jazz-dancing Front-wheels and Tie-rods."

A.-C.U. Silencer Trials.

The competitions committee of the Auto-Cycle Union has postponed the motorcycle silencer trials, which were to have been held at Brooklands on January 26th. The reason for the postponement is that the repairs to the track are unlikely to be completed by that date. The special tests of proprietary and experimental silencers will be held as arranged. The date of the track trials will be announced later.

Politeness in "The Force."

In a memorandum recently issued to chief constables and superintendents, the Commissioner of Metropolitan Police suggests that the manners of constables have deteriorated and states that "there is no possible excuse for incivility." We hope that this will be taken to heart, for whilst policemen as a whole are a very civil and helpful body of men, it must be admitted that many drivers have, at some time or other, had good cause to complain of somewhat overbearing behaviour.

The difficulties of repairing Brooklands race track are made clear in these two photographs, which tell their own story. Many tons of concrete are used each year in making good the surface and eliminating bumps.

Whitehaven Loop Road.

The new loop road which skirts Whitehaven was opened to traffic on Monday last. This road is only a mile and three-quarters in length and the original estimate of its cost was £34,000, but great difficulties, including several landslides due to very heavy rain, have resulted in the total cost reaching £73,000.

Keeping Warm.

At this time of the year American motor periodicals are full of advertisements of foot-warmers and car-heaters which utilize the exhaust gases. Fortunately, in this respect, for once England scores over the land of Liberty, but although such accessories are not really necessary in our climate, they might be employed a little more generally on better-class light cars where so much attention is paid to personal comfort.

Concentration.

A glance through the pages of recent issues of *The Illustrated Official Journal (Patents)* shows that so far as inventions relating to motorcars are concerned the great majority now deal with mechanical and electrical signalling devices.

Confusion Worse Confounded.

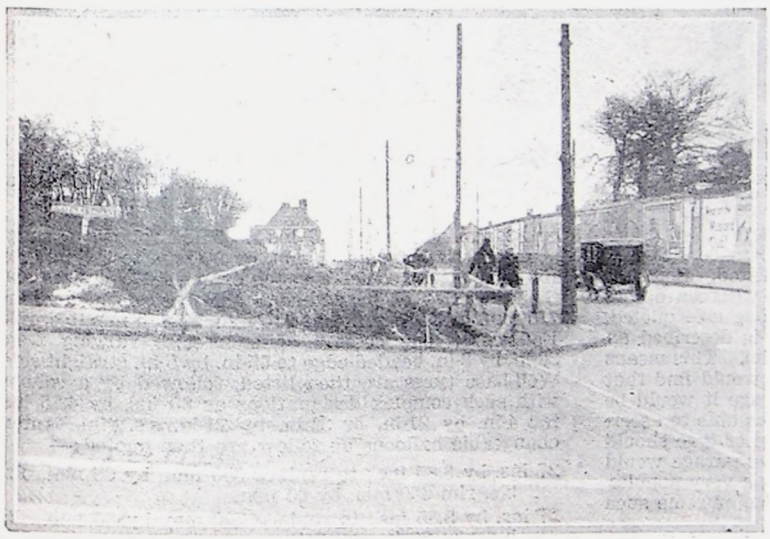
As though it was not already difficult enough for motorists to keep within the present chaotic motor laws, a writer in a London evening paper has suggested that the chief constables of each county should be empowered to make their own laws!

Italian Motorcar Exports.

Reuter announces that in spite of the rise of the lira, over 500 more cars were exported from Italy in October last than in October, 1925. During the period January-October, 1926, 29,189 cars were exported.

New Steel Wheel.

A pressed-steel wheel in which welded joints are almost entirely eliminated has been produced by Rubery Owen and Co., Ltd. The new form of construction, which makes use of rolled and locked joints, is claimed to be very strong and to be less costly than the welded type.



WIDENING THE FINCHLEY ROAD. —— **This much-needed improvement between Temple Fortune and Church End is rapidly nearing completion.**

A Busy Month.

Next October will be a busy month in the motoring world. The R.A.C. Grand Prix race at Brooklands is down to take place on October 1st, the Motor Show at Olympia will be open from the 14th to the 22nd and the J.C.C. 200-Mile Race is arranged to be held on Saturday, the 15th.

A Much-needed Widening.

The Finchley (London) road is now being greatly improved by a widening which is being carried out for a distance of about a quarter of a mile in a northerly direction, starting from the top of Temple Fortune Hill. Local motorists are hoping that the next step will be the elimination of the bottleneck caused by the narrow bridge over the L.N.E.R. at Church End.

Measuring Surface Finish.

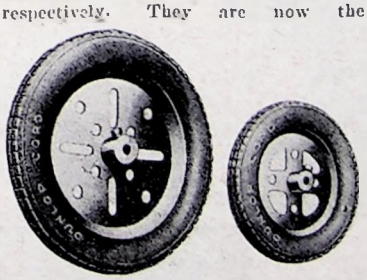
An instrument which "measures" the amount of polish on finished metal parts is in use in an American motorcar factory. Light reflected from the surface of the part under test is passed through a photo-electric cell connected to an amplifying circuit in which is a milliammeter. Minute variations in the intensity of the reflected light, which is governed by the degree of polish of the test piece, are recorded by the meter.

Longer Days—Soon.

The cuckoo has *not* yet been heard, but already optimists are expressing the view that "the days are drawing out." Actually little difference will be noticed until the end of January.

Scale Model Tyres.

Miniature tyres to fit 2-in. and 3-in. wheels are being made at Fort Dunlop, and are on sale at 4d. and 6d. each respectively. They are now the



Added realism will be given to model motorcars by the use of these tyres.

standard equipment of Meccano motorcars, which can be assembled from parts—including gearbox, clutch, differential, and so on—into scale models of all the leading types of car.

Opened on December 22nd, the new road, part of which is shown above, on the Stokesley-Helmsley route rises to 900 ft. above sea-level. It cost £13,000 to build.

Echoes of the "Exeter."

H. R. Taylor writes to say that he was not passed by other Morgans on Salcombe.

* * *

W. E. Kendrick was wrongly described in the official programme as driving a Frazer-Nash. He actually drove a Lea-Francis.

* * *

The average garage hand is not noted for a superabundance of grey matter, but the limit of stupidity was surely reached by one who filled up a Morgan oil tank with petrol.

* * *

Striking headdresses were not much in evidence this year, but we noticed one passenger wearing a large black felt wideawake sombrero, whilst another sported a sort of felt polo cap.

* * *

H. W. Baker drove his Morgan back from Salisbury with only a bicycle oil lamp to guide him and an electric torch with a piece of red paper serving as a tail lamp. Most of the Morgans suffered from lighting troubles, and H. Beart was a wise man to carry a very large accumulator bolted on the tail of his Aero.

* * *

C. Ford is surely a real enthusiast. He lives within 10 miles of Salcombe and has a hill similar, if not worse, to surmount every time he leaves his house. Nevertheless, he drove his four-year-old Rover Eight (which gained a silver medal last year) up to Staines from Devonshire, down again, back, and down again.

* * *

The Times seems to have been the victim of a little leg-pulling, for it published the following paragraph:—"Of the 1,350 competitors in the Motor Cycling Club London-Exeter trial for motorcycles, combinations and light cars 323 finished at Staines last night. . . . A. D. Stephens crashed at the summit of White Shoot Hill."

THE TYRE SIZE MUDDLE.

SUGGESTED NEW FORM OF DESIGNATION COUPLED WITH AN EASIER METHOD OF MEASURING AND DESCRIBING GEAR RATIOS.

"... One size quoted, which is a popular size for light cars, is described as 27 ins. by 4.4 ins. to fit 3½-in. by 19-in. rim. This means very little to the average man, and he would find that if he took the bare rim along to a garage it would be extremely improbable that they would be able to ascertain ... what size of tyre should be fitted to it." One example of tyre muddle as quoted by the writer of the accompanying article.

SURELY the time has come for the question of tyre sizes and their nomenclature to be thoroughly thrashed out, revised and standardized on some simple, straightforward basis. At the present time there is a perfectly amazing variety of tyre sizes which, it can be safely said, means absolutely nothing to many motorists and members of the trade.

Referring to a tyre maker's recent price list, the writer finds no fewer than 69 sizes listed. Some of these are reasonably straightforward, whereas others are very complicated. For example, one size quoted, which is a popular size for light cars, is described as 27 ins. by 4.4 ins. to fit 3½-in. by 19-in. rim. This means very little to the average man, and he would find that if he took the bare rim along to a garage it would be extremely improbable that they would be able to ascertain what size the rim was or what size of tyre should be fitted to it. Possibly somebody in the garage would recognize the size on account of it being a very popular one, but how different would be the case of some such size as, say, 815 mm. by 105 mm.

Looking through the list already referred to, one notices that the first size quoted is described as 700 mm.

"Official" descriptions. (1) 31 ins. by 5.25 ins. fits 4-in. rim and 21-in. wheel. (2) 26 ins. by 3.5 ins. fits 3-in. rim and 19-in. wheel. (3) 4½-in. for 21-in. rims, 31½-in. inflated. There are getting on for 200 different types!

by 80 mm. (26 ins. by 3 ins.). Then follows a range of metric sizes from 710 mm. by 90 mm. to 955 mm. by 155 mm. Next comes a range of special oversizes and then a series of beaded-edge balloons, designated as 715 mm. by 115 mm. to fit 715 mm. by 115 mm. b.e. rim. Follows a long column of inch sizes varying from 26-in. by 3-in. beaded-edge to 35-in. by 5-in. straight-side. Well-base tyres are then listed, followed by a column with such complex designations as 30 ins. by 4.75 ins. for 4-in. by 21-in. or 3½-in. by 21-in. s.s. rim. Interchangeable balloons as follow are then quoted:—

27 ins. by 3.85 ins., to replace 650 mm. by 65 mm., fits b.e. rim 650 mm. by 65 mm.

27 ins. by 3.85 ins., to replace 700 mm. by 80 mm., fits b.e. rim 26 ins. by 3 ins.

The list in question follows the conventional designations, which, one would imagine, were sufficiently comprehensive, but another company has recently introduced a new range of tyres, which are described, for example, as 12 by 45, the figures expressing in centimetres the cross-section of the tyre and the diameter of the rim. This would be fairly comprehensible to ordinary people, and it would also be quite useful and instructive if the tube were circular and the rim symmetrical; but, as neither is the case, the figures convey very little.

The suggestion is that car gear ratios should be measured like those of a bicycle—in terms of inches travelled for one complete revolution of the engine flywheel. Here is the equivalent of what is now known as a 4 to 1 gear, the car having travelled 22½ ins., i.e., one quarter of a revolution of the road wheel for one complete turn of the flywheel. The gear would be described as a "22½."

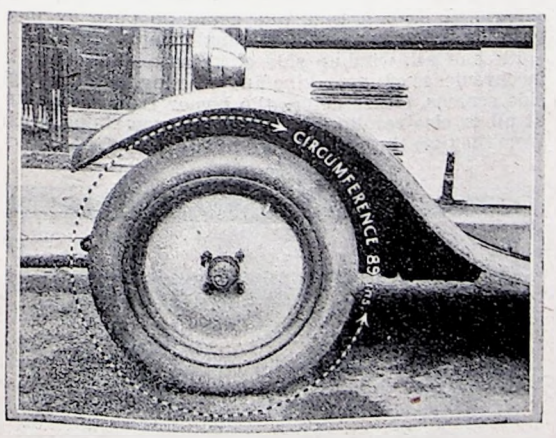
Suppose a man had a tyre of this size, and wanted to know the circumference of the cover—a very important matter when working out the question of gear ratios and so forth—the only way he could ascertain this information would be by measuring round it with a tape measure or seeing how far the tyre rolled on the road when making one complete revolution. The same applies, of course, to the various other designations in common use.

Let us investigate a scheme which would get over many of the difficulties and give a reasonably exact idea to everyone with regard to what was actually meant.

It is suggested that tyre sizes should be quoted first by naming the circumference of the tyre in inches, and secondly by quoting the cross-sectional area of the inside of the tube when fully inflated. A popular light car size would then be described as 89 by 14, and these two numbers could be easily stamped on the rim. The figures would give a very good impression of the air capacity of the tube, regardless of its shape, and would, in addition, convey really useful information. It would be obvious that the tyre described as 89 by 16 had a greater air capacity, but no larger overall size, whilst a 120 by 12 would clearly be a large-diameter tyre of comparatively small air capacity.

This scheme would be very helpful indeed when a change was made from one size of wheel and tyre to another, and it would also be very useful for determining the actual "gearing" of a car, which is, of course, the number of revolutions of the flywheel per distance travelled.

Our contributor, "Focus," took delivery of a car recently the standard tyre size of which is 28 ins. by



If the circumference of the cover and the cross-sectional area of the inside of the tube were given, it is submitted that a great deal of muddle would be eliminated. The former dimension would also be closely related to questions of gear ratio.

4.95 ins. to fit a 3½-in. by 19-in. rim; but, wishing to experiment with medium-pressure tyres, he had a set of special wheels supplied, and the tyres for these were described as 4¾ ins. for 21 ins. The figures, of course, convey very little, unless one happens to be an expert on tyre matters, but the fact is that the 21-in. (rim) tyres are very much larger in diameter than those designated as 28 ins.

Turning now to the question of gearing, it must surely be agreed that the method which has always ruled in the bicycle world is much better than that which prevails in specifications of cars. A bicycle is described as having, say, a 70 gear, which means that it travels 70 ins. for one revolution of the crank. A 50 gear is thus considerably lower and a 90 considerably higher.

In the case of cars, however, the "gear ratios" are

NOT VERY INFORMATIVE.

given, and these have no relation whatever to the distance travelled; they merely give the ratio between the flywheel and the rear-axle shafts, and provide no useful information whatever unless the circumference of the tyres used is also known.

With the method of tyre designation advocated by the writer this matter could be vastly simplified, for, instead of describing the car as having gear ratios of, say, 5 to 1, 10 to 1 and 20 to 1, and tyres of, say, 28 ins. by 4.95 ins., they could be quoted as 4½, 9 and 18, the figures expressing the inches travelled by the car per revolution of the flywheel. The exact alteration to the gear (i.e., distance travelled per revolution) which would be made when changing to a different size of tyre would then be easily ascertained, whilst speedometer corrections would be greatly simplified.

As motorists became accustomed to the new arrangement they would find it very useful. For example, if a man had a 10 h.p. car weighing 15 cwt., and having a top gear of 18, he would realize that a 10 h.p. saloon weighing 18½ cwt. and with a top gear of 20 would be geared much higher than his touring car, and garage men, too, would be much better able to advise customers than they are at present.

One can conceive, in addition, that the system might lead to a reduced number of sizes and fittings, thus allowing garage proprietors to keep a stock likely to meet all reasonable requirements. At the present time it is, of course, absurd to expect any save the very largest dealers to carry in stock even one each of the multitudinous types and sizes.

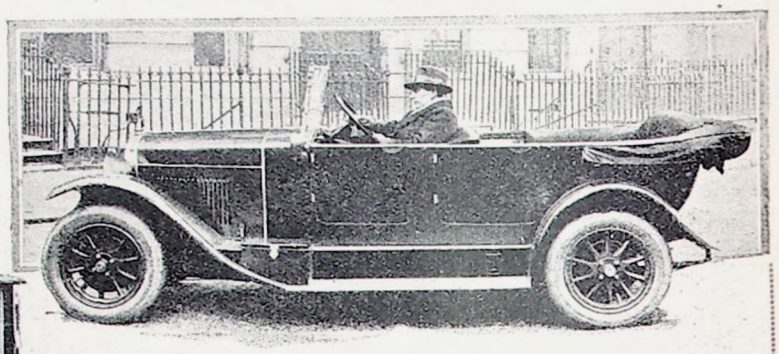
Naturally, the number of different patterns of tyre will be reduced as the beaded-edge principle drops more out of favour, and already there are indications that it has lost its hold of the market. The straight-sided type of tyre is now generally agreed to be superior from the point of view of safety, whilst the well-base type of rim has eliminated the complication and expense of demountable and detachable rims.

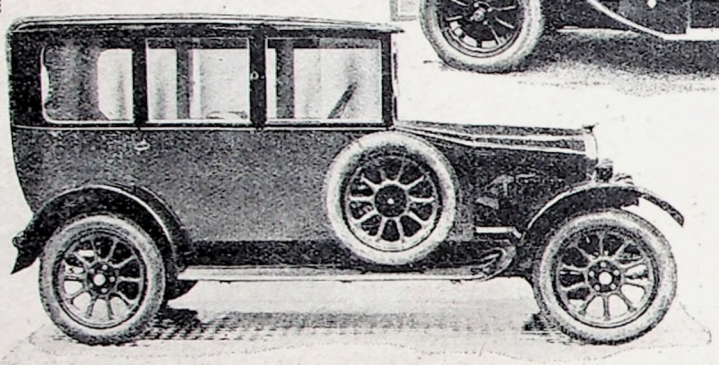
It is conceivable in the future that the obvious economic advantage of having one standard type of rim will lead to a vastly decreased number of different tyre types, and this, of course, would allow tyres to be sold at still lower prices. The position to-day is as complicated as it has ever been. This is due to the comparatively recent introduction of low-pressure tyres, together with the sudden adoption of the wired-on instead of the beaded-edge principle.

COMFORT THAT IS STILL OVERDUE.

By CRITIQUE.

OUR CONTRIBUTOR PLEADS FOR SOMETHING BETWEEN THE OPEN-TOURER AND THE SALOON AND SUGGESTS A NUMBER OF POINTS WHICH MIGHT, WITH ADVANTAGE, FIGURE IN THE SPECIFICATION.





THE TWO TYPES.

For fine weather few could grumble at the tout ensemble of any open tourer, but when winter holds us in its grip and bad weather is the order of the day, who does not sigh for the far greater comfort, convenience and weatherproofness of the saloon?

WHY should motorists in this year of grace 1927 be forced to go in for saloons in order to obtain more than ordinary comfort and weather protection in winter? There must be many prospective purchasers who have asked themselves this question since the Show and who have come to the conclusion that comfort is only for the owner of a saloon. The buyer of an open touring car, they are led to suppose, must congratulate himself on the limited degree of luxury which he obtains and be thankful that he is not more uncomfortable.

Now, this is entirely out of keeping with the trend of modern design. The sliding half-roof for saloon cars has arrived; an endeavour has been made to popularize detachable heads; pioneer concerns have already proved that wind-up side screens are practicable; a Scottish inventor has demonstrated what he calls a "sunshine" car that can be converted from fully closed to all-open in ten seconds; a rip-back hood adjustment has been devised, and flexible glass for side windows is a possibility of the future.

Surely, taking all these into account, one can say that the whole subject is receiving honest consideration by the few, and surely one can ask when the bulk of coachwork designers mean to profit by the new ideas which are at their disposal? Is it because they object to them?

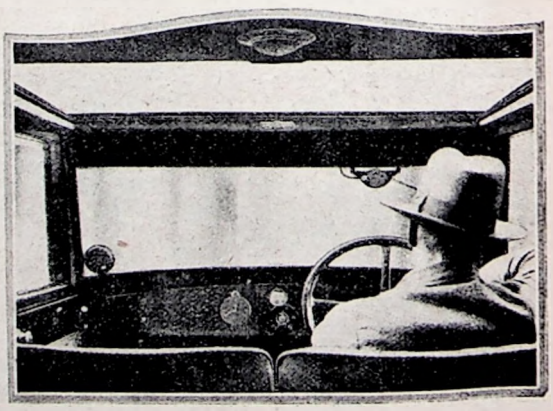
The trouble, as I have indicated, centres not in saloons—although these are frequently draughty and badly ventilated—but in open touring cars. Of course, if an owner wants comfort and has the money to pay for it, he can hunt round until he finds the saloon that suits him; but as I said in my opening sentence, why should it be necessary for a car to be all-enclosed at all times to be comfortable? Could there not be some happy medium which might be called the "saloon-tourer"?

A few years ago motorists were content if the equipment of an open touring car included a fairly serviceable hood of the Cape-cart type and a single-pane windscreen, but times have changed, the public want far more than they did, and, at the present day, open touring cars compare for comfort very poorly with saloons.

As a matter of fact, the only real improvements which are noticeable in touring cars are two-pane screens and peg-in side curtains. True, they make an enormous amount of difference to the comfort of the occupants of a car by excluding rain far more effectively, but frequently they are very draughty, and it is questionable whether it is not preferable to put up with a good breeze blowing through an open car than to suffer from the effects of insidious draughts.

Is there any reason why the open tourer cannot be converted into something more closely resembling the saloon? I suggest that this could be done by incorporating four comparatively simple improvements.

First of all, wind-up side curtains. At present, the inconvenience of unearthing and erecting, perhaps, eight side screens, either deters the owner from using them at all or else results in the curtains remaining in situ from the time they are erected at the end of the summer



The sliding half-roof of a modern light saloon shown fully open.

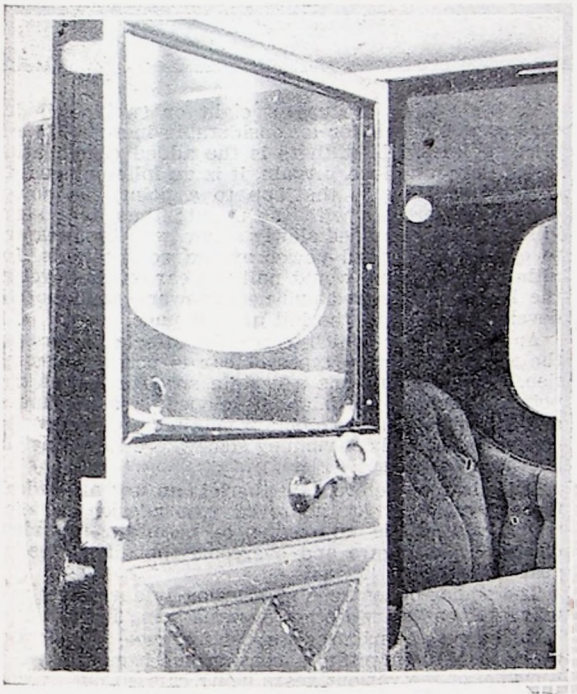
to the advent of spring, which, in this country—despite the rulings of the calendar—does not appear to arrive until the end of May.

Often the side curtains have to be stored behind the seat squab or under cushions, where they are not only somewhat inaccessible but are liable to be scratched. One light car manufacturer has advanced a step by

housing the side screens in the shell of the sides of the body—that is, between the metal panelling and the upholstery. Would it not be an easy step from this to the introduction of a quite simple winding mechanism for lifting or lowering the screens?

A suggestion of this sort goes hand in hand with a plea for more easily erected, sturdier, and tidier hoods, incorporating some simple means whereby draughts, particularly along the horizontal joint between the hood and the side screens, could be eliminated.

The best that can be done nowadays, apparently, is



(Above) A glimpse of saloon comfort. (Right) Showing the weatherproofness of the V-screen as used on sports models and (below) how the hood of the "sunshine" car folds down.

to provide a kind of weather flap in the hood itself, but it is seldom very effective. The difficulty could be overcome largely by having press-buttons on the weather flap engaging with studs on the screens; but how much better it would be if the rip-back type of fastener, or the principle of the "sunshine" car, were employed.

The former figured on one car at the Show, and in operation it was simplicity itself. Readers are familiar with the idea, which first found favour with motorists when applied to tool bags; later it was incorporated in the all-weather equipment of a cyclecar. It results in a joint which is not only weatherproof but very neat.

The Sunshine Car.

In the case of the "sunshine" car, there is a permanent hood "skeleton," which consists primarily of two hood rails each carrying a concealed but stationary chain, so that sprockets carrying the hood material itself can be engaged by a handle and the whole hood rolled up, as it were, with ease and convenience. The side screens sink into the sides of the body.

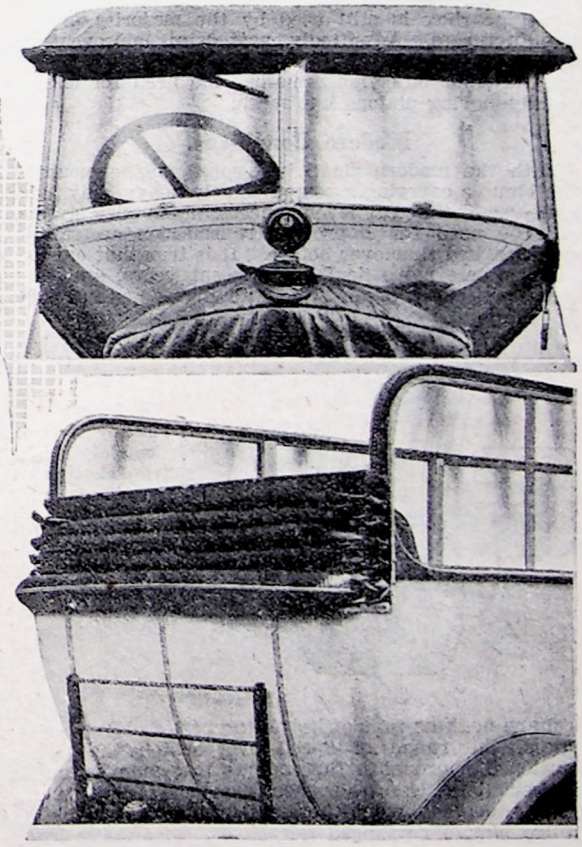
Celluloid side screens have a short life so far as clear visibility is concerned, but with that I am not intimately concerned; en passant, however, it may be pointed out that flexible glass side screens would be far preferable.

There is one snag with a really weather-tight car, namely, the difficulty of ensuring adequate ventilation. In the case of saloons, roof lights have been found effective, but, like practically every other ventilating appliance, they serve to create draughts. Possibly, however, their evil effects would not be so noticeable if some form of interior heating were arranged. This might take the form of a combined heater and foot warmer for the rear passengers, the heat being obtained by the simple expedient of tapping the exhaust. The degree of warmth could, quite obviously, be controlled from within the car by a valve.

The only argument against improvements such as I have mentioned is that the cost of an open touring car would be greater than it is at present—but would this matter a very great deal? A man who is prepared to lay down, say, £200 for a car would willingly add another £10, even £20, for the added comforts which such improvements would give.

Detachable Tops.

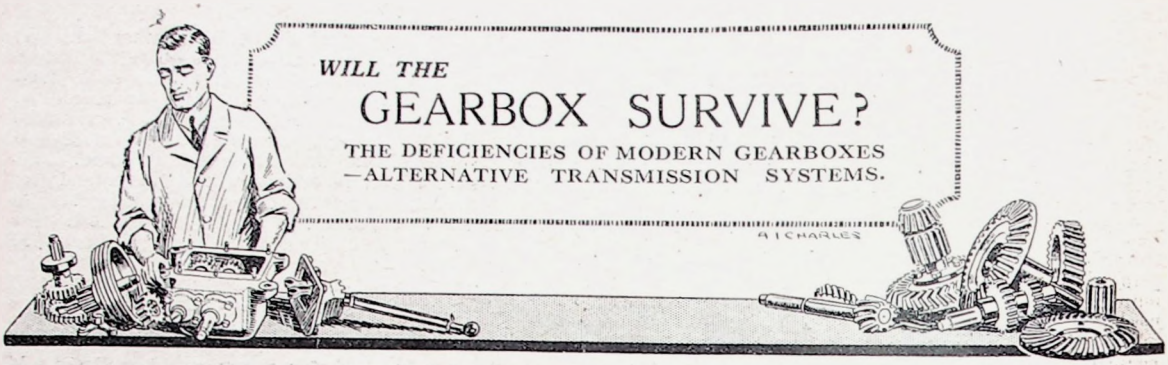
I have not, so far, dealt with the advantages of detachable tops. These have been tried and, judging by the degree of success which they have attained, have been found wanting. Their principal drawback is not so much in the design as in the difficulty of storing the top when it is not in use, whilst the somewhat inconvenient task of placing the top in position or removing it must not be overlooked.



As I have emphasised, what is wanted, and wanted urgently, is a nearer approach to saloon car comfort in open touring cars. If £20 will secure it, then it is my conviction that car manufacturers will be perfectly safe in going ahead with it.

Perhaps the next Olympia Show will reveal something on the lines I have indicated—there is still plenty of time.

B15



WILL THE GEARBOX SURVIVE?

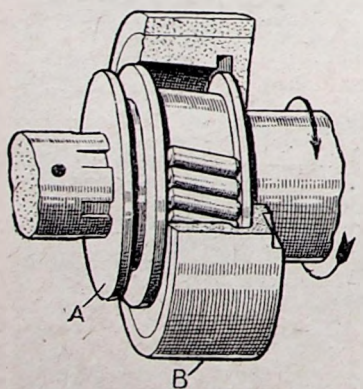
THE DEFICIENCIES OF MODERN GEARBOXES —ALTERNATIVE TRANSMISSION SYSTEMS.

THERE is no question that one of the chief difficulties in driving a car is changing gear, and this is only to be expected when one considers what a comparatively unmechanical device the average present-day gearbox really is. For a driver to have to slide two rapidly revolving gearwheels into engagement, relying solely on his judgment to gauge their speed so that they may be meshed silently, is surely inconsistent with the present stage of development of the motorcar as a whole.

Further, the gearbox was regarded by its original designer, M. Levassor, merely as a makeshift until some more satisfactory device could be produced. This was nearly 40 years ago, and the principle of the sliding-pinion gearbox is still used by the majority of car manufacturers. Admittedly, vast detail improvements in design, manufacture and materials have been made, but the chief objection remains—the need for sliding rapidly-moving pinions into mesh.

Modern Conditions.

With the modern small high-speed engine mounted in a chassis carrying a comparatively heavy body, constant use of the gear lever is necessary in busy streets, and the need for improved transmission systems is more marked that ever before. It is true that engines have become more flexible of recent years, and that the power curve of an up-to-date engine has not such



A cutaway view of one of the roller clutches incorporated in the new constant-mesh gearbox now available on Lea-Francis cars.

a sharp peak as that of its prototypes of old—in other words, the range of speed over which the power developed approaches the engine's maximum output is greater than was the case previously; still more flexible engines would make it quite practicable to utilize simple two-speed gearboxes, thus doing away with much of the need for frequent gear changing.

Eight or even twelve-cylinder engines would obviously have a much smoother torque and provide much greater flexibility than those used in small cars at present. In the same way the development of two-stroke engines, a feature of which is their good pulling power at low speeds, would achieve the same end, but there are several difficulties which prevent the problem from being tackled satisfactorily from this standpoint.

To begin with, the use of eight or twelve-cylinder engines would call for a considerable increase in the prices of cars, whilst there is the added complication which they introduce. Again, it is an inherent quality of the petrol engine that, up to a point, the power developed increases with the speed; thus, if a steep hill has to be ascended slowly a low gear is necessary to obtain the desired power at the road wheels, for although the engine would pull the car on the level at the low speed desired sufficient power would not be developed to ascend the hill at that pace.

Another factor which certainly affects buyers of the more inexpensive types of car is petrol consumption. Every engine has a certain speed at which the petrol consumed per b.h.p. developed is a minimum, and it is obvious that to obtain maximum economy the engine should be kept running somewhere in the neighbourhood of this speed.

It is clear, therefore, that there is an urgent need at the present time for improved transmission systems which will enable an engine to maintain the most efficient r.p.m. figure and overcome the difficulties of gear changing.

The sliding-pinion type of gearbox is absolutely not universal, one or two other systems being in use.

In the case of motorcycles, for instance, practically every manufacturer fits a constant-mesh gearbox, the selection of the various gears being carried out by dog clutches; this certainly makes gear changing easier, but one of the disadvantages is that extra weight is introduced.

There is also a slight loss of efficiency, and very careful workmanship in the manufacture of the pinions, if silent running is to be obtained, is called for.

A Silent Third Speed.

It is noteworthy that in the new Riley Nine constant-mesh wheels with helical teeth are employed for the third speed of the four-speed gearbox. This gear is engaged by internal dogs. The direct drive is retained for top gear, whilst first and second are engaged by sliding the pinions into mesh in the usual way.

Another type of drive, which is really in the constant mesh class, is that employed on some of the London buses. In this design, instead of the gearwheels being meshed directly, the wheels on the main and layshaft are connected by silent chains similar to those used in some engines for driving the camshaft and magneto. The various gears are selected by means of dog clutches, so that changes are fairly easy to make.

A very silent drive is obtained in this way, but a disadvantage is that it is difficult to arrange this type in a compact form.

A very promising design of four-speed gearbox, known as the Humphrey Sandberg constant-mesh gear, is now available on Lea-Francis cars. It has not at present been standardized by the manufacturers, but can be fitted at an extra charge. In this design the gears on the main and layshafts are in constant mesh, but, instead of being selected by dogs, special clutches, one of which is employed for each pair of pinions, are used.

An accompanying illustration shows one of these clutches in detail, and it will be observed that it takes the form of two tapered members, having between them a race of parallel rollers set at a slant. The outer member (B), and the pinion to which it is fitted, ride freely on a bush on the shaft when no drive is being transmitted; when, however, the inner member (A) is pressed to the right by its selector fork, it is drawn towards the outer member and pressure between the components increases until an absolutely positive drive is provided.

In the reverse direction, however, no drive is transmitted; that is to say, when A overruns B the mechanism can free-wheel. Thus, when the foot is taken off the accelerator pedal, the roller clutch is automatically disengaged, but so soon as the engine is speeded up again the drive is re-established.

This arrangement normally prevents the engine from being used to slow down the car, so that increased work is thrown on the brakes. In order that the engine may be used as an emergency brake when very steep hills are being descended a locking device, which can be brought into operation by the driver and which prevents the low-gear clutch free-wheeling, is incorporated. It should be pointed out that these roller clutches do not in any way supersede the ordinary clutch, which is still necessary for starting away from rest and for gear-changing.

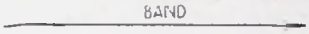
A Fool-proof Design.

The advantages of the design are considerable. As the pinions do not slide into mesh, the teeth cannot be damaged by a misjudgment in gear changing, whilst the fact that the drive is taken up progressively, although very rapidly, makes skill in gear changing unnecessary and adds considerably to the life of the whole transmission system.

Another very interesting method of overcoming the difficulty of changing gear was invented and patented some months ago by Mr. Percy O. Rowland, of Birmingham. This device is intended as an adjunct to the conventional sliding-pinion type of gearbox, and in the diagrammatic illustration it is shown as an auxiliary to an existing unit. Obviously a more businesslike mechanism could be arranged if the gearbox were specially designed to include the device.

The principle is to employ friction wheels (of sizes corresponding to the various pinions in the gearbox) to bring the speed of the layshaft to that required for the correct and therefore silent engagement of any of the gears. It will be seen that one set of friction wheels is slidably mounted on an extension of the mainshaft, whilst the other set is carried by an additional shaft driven by the layshaft through a spherical coupling. It is thus free to swing through a small angle so as to bring the friction wheels into or out of engagement.

Normally they are held out of contact, so that wear should not take place rapidly. Full depression of the clutch pedal brings them into engagement and considerable ingenuity is displayed in the manner in which the correct pair are selected. A special gate for the gear lever is employed, the slots being staggered, so that when changing from one gear to another the lever has to move slightly sideways. This movement is conveyed by suitable rods and levers to the friction wheels.



A diagram illustrating the principle of epicyclic gearing. S is the sun-wheel, R a toothed drum, and P one of the planet-wheels.

Epicyclic gearing is employed in a few cases, the Trojan being a notable example among light cars. The system has the advantage that the gears are in constant mesh, various ratios being obtained by means of friction clutches. The change is, therefore, simple and it is impossible to crash the gears. On the other hand, it is difficult to provide three forward speeds and a reverse without some complication, and it is for this reason that an epicyclic gear is usually arranged to give only two forward speeds and a reverse.

The principle is illustrated in the accompanying diagram. The gearwheel (S), which is known as the sun wheel, is driven by the engine, a small pinion (P) meshing with this and with an internal-toothed drum (R). Around this is a brake band by which the drum can be held rigidly.

When the drum is fixed, P, which is known as the planet-wheel, will revolve round the drum in the same direction as the sun-wheel (S), but at reduced speed, the reduction depending on the size of the sun and drum gears. It will be seen that by suitably connecting the arm carrying the planet-wheel to the propeller shaft low gear is obtained.

(Below) The chain-type gearbox fitted to some of the London buses, and (right) an interesting device designed to ease gear changing; it is described fully on this page.

Top gear is direct and is produced by locking P and S together so that the whole assembly revolves as one unit. If the arm connecting P and S is held stationary the drum (R) will be driven in the opposite direction, and this gives a reverse gear. The layout shown is only intended to convey the principle, for actual designs differ considerably.

In the foregoing, various gearboxes, which do not employ the system of sliding gearwheels into mesh to effect a change of ratio, have been described; in the concluding article next week we shall deal with transmission systems of entirely different principles.

B17

MODIFYING A JOWETT LIGHTING SYSTEM.

HOW A FIVE-LAMP SET CAN BE INSTALLED ON MODELS FITTED NORMALLY WITH A THREE-LAMP SYSTEM—WIRING INSTRUCTIONS FOR LUCAS AND BROLT SWITCHBOARDS.

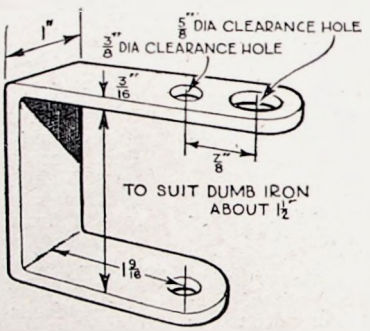
OWNERS of Jowett cars fitted with three-lamp lighting sets will be interested in the following hints, which explain how a secret control switch may be fitted in the circuit and how a five-lamp system may easily be arranged.

Dealing first with the secret switch, the procedure is to remove the negative-battery lead at the switchboard (terminal 7, Brolt diagram No. 51; terminal B-Lucas diagram 1606-3), lengthen it as necessary and connect it to one side of a tumbler switch, which may be of the house-lighting type and capable of carrying about 5 amps. The other side of the switch is connected to the switchboard terminal from which the battery lead was removed. The switch should be placed on the dashboard and the positions of the fixing holes marked thereon; these are drilled through and the switch mounted behind the board with small bolts.

For the five-lamp installation as shown in the Brolt diagram No. 51 (1924-5 models), the following method will be found to be comparatively simple, although the detailed description may seem involved.

Two clips, as shown in the accompanying sketch, are made and fitted to the dumb-irons just in front of the radiator and with the large holes inwards. The headlamps are now transferred to these clips, packed with ⅛-in. spring washers as necessary and a pair of small side lamps fitted to the screen brackets. There appears to be a number of these at present on the market at clearance prices. The existing wiring can be used for the side lamps, but it should be connected at the switchboard to the two terminals marked T (H2 red is already so connected). These lamps will now respond to the same control as the tail lamp.

The off-side headlamp is wired to the proper terminals in the usual manner. One lead of the near-side headlamp is wired to the terminal marked H1, as before; the other lead is taken to one pole of a tumbler switch fitted similarly to the one described previously, the other pole of the switch being connected to terminal H1 H2. About 12 ft. of twin flex is required.



This sketch shows the dimensions and shape of the two headlamp brackets. They should be made of mild steel, bent hot.

The conditions are now as follow:—

(a) With the headlamp switch off and the lighting switch at "dim," the side lamps and tail lamp are "on." These are unaffected by subsequent operations until switched off.

(b) When necessary, the tumbler switch is closed and the headlamps are added, dimmed.

(c) When the lighting switch is put at "full," the headlamps respond. To dim the lamps, the lighting switch is thrown back to "dim" and the conditions become, of course, as in (b).

(d) It is possible, by having the lighting switch "full" and tumbler switch off, to have the near-side headlamp extinguished and the off-side one "full" on, but this is of doubtful value.

In the case of 1926 model Jowetts with Lucas equipment, the existing red and black leads are connected to the side lamps, the end of the blue lead being covered with insulating tape and carefully tied out of the way.

Remove the blue leads from terminal H on the switchboard and treat it in the same manner, then transfer the two red leads from S to T.

About 12 ft. of triple flex, preferably coloured blue, red and black, will be required for the new positions of the headlamps. The leads should be joined to the same lamp terminals as at present, the blue and red leads being joined to terminals H and S at the switchboard. The two black leads should be joined to one side of the tumbler switch; the other side of the switch is connected to the terminal on the switchboard marked "Lamps." This will give the same results as mentioned before, excepting that condition (d) is not obtainable.

WHY CARS LOOK SHABBY.

CARS of to-day get shabby for many reasons, chief of which, of course, is neglect. But do car designers really care what a car is going to look like after it has run 20,000 miles? I do not think they do. Nevertheless it seems hardly fair to the man who has put his money down for an article which is sold largely on its appearance, because not one buyer in a hundred is competent to judge of the technical merits of a car.

It was very noticeable at Olympia last year that no effort was made to show the mechanical side of the exhibits. Stripped chassis, especially on the British stands, were mostly conspicuous by their absence. The interior details and the exterior lines were the chief selling points. The new cellulose "finish" was shown to be "just as good" to look at as the older type and, apart from this, no special effort was made to demonstrate the ability of a car to keep its pristine appearance.

Why cars look shabby is not so much a matter of the paintwork as most people imagine. A radiant radiator will give an air of seeming prosperity to an ancient car that is remarkable. "Spit and polish" in the Army is based on a true knowledge of human psychology. The same kink in human nature applies to car owners. A nice-looking car reacts both on its owner and its owner's friends. Everybody likes to be in a smart-looking car. But most people have very little time to do the work that is necessary, and still fewer care to pay to have it done.

The vogue of the sports car is based mainly on its appearance: the chance to show its performance is so rare that it hardly matters. More and more are lines talked about, and these undoubtedly help to make a car look smart; but brightness and finish are still the main factors. Hence, what matters is not the things that make a car look smart but those that make it shabby. What are they? It is chiefly the mass effect of a lot of little things and the trouble lies with all the various excrescences on a car that are so easily affected by exposure, mud, rain and neglect.

A big, plain sweep of panel or mudguard, provided

its surface is smooth, looks well even if it has no gloss, but a headlamp which is bright only in parts is an eyesore.

In this connection the polished brass radiator, lamps and body fittings which were the fashion some years ago had one great advantage—no amount of polishing would spoil their finish. The same cannot, unfortunately, be said of the nickel-plated parts of many modern low-priced cars where too energetic polishing soon wears the plating through in places and reveals ugly patches of the metal beneath. It is not suggested that polished brass is an ideal finish, and most motorists will agree that good nickel-plate has a much more pleasing appearance and, in addition, will harmonize with any colour scheme adopted for the body, a quality which cannot be assigned to brass. Whichever finish is used, the need for constant polishing, which is the chief disadvantage, remains.

Ugly Excrescences.

Anyhow, why four lamps on a car when two might do? And then spidery brackets to carry them, little fittings to adjust them, and odds and ends of wires to connect them! They all deteriorate rapidly and help to make a car look shabby. Exposed dumb-irons, shackles, greasers, radiator caps, mascots, horns, mirrors, licence holders, spot lamps, number plates, outside battery boxes and petrol carriers, luggage grids, tail lamp, direction indicator and so forth. There is no possible kind of finish—unless the new chromium plating is going to do it—that will keep these things from showing rapid signs of use; chipped paint, dents, dirt in inaccessible crevices, and the demon of rust will attack them all, while a plain panel still retains an air of well-being.

Then the hood is a big problem; detachable curtains, interior rear-seat screens, all deteriorate by exposure more easily than the mere bodywork itself with its smooth lines and plain surfaces. Far too many of all these details which are so susceptible under exposure are neither designed nor placed with due regard to their effect on appearance.

Smooth Lines Desirable.

A more determined effort is needed on the part of the designers of cars and car fittings either to make more of them integral with the car itself or alternatively to place them so that their smooth lines and rounded contours are less obstrusive. Angles, bends and corners need smoothing out and cleaning up. This particularly applies to running boards, valances and most mudguards.

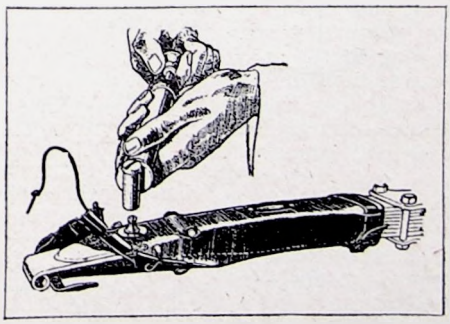
Where a part cannot be so treated it should be concealed. The smooth exterior of some of the newer and enormous super chars-à-bancs are fine examples of the proper way to tackle the subject. If they look clumsy to us now, it is because we are not yet accustomed to the simplicity of their lines. Quite probably the cars of the future will look very different from those of to-day. With smooth exteriors, no ugly excrescences, stone-hard paintwork, and rustless fittings, they will wear out long before they look worn out! A.L.O.

LUBRICATING ROAD SPRINGS.

NOTHING is more detrimental to the efficient action of road springs than rust and grit, which not only make the suspension of a car very harsh, but may cause annoying squeaks. This trouble was very prevalent a few years ago when springs were invariably exposed and suffered from the effects of mud and dust. A considerable amount of trouble had to be taken in the course of a year to keep the springing system working efficiently.

The advent of spring gaiters has done much to eliminate these troubles, for they keep out dirt and retain oil or grease. Most gaiters have provision for adding more lubricant from time to time and need never be disturbed. If the gaiters have to be unlaced before fresh oil or grease can be injected, the job, although a messy one, should not be put off until the springs begin to squeak.

The treatment of a rusted spring is a quite simple, although—it must be admitted—a somewhat tedious job.



A typical spring gaiter, showing the method of attachment and the provision for adding lubricant.

In cases where gaiters have to be removed to gain access to the springs it will be practically essential to take off the road wheels. After one wheel has been removed the gaiter may be unlaced and taken off, then the jack should be removed from the axle and placed under the chassis frame so that, as the car is lifted, the weight of the axle will tend to open the leaves of the springs.

If the weight of the axle is not sufficient to separate the leaves, the sides of the spring should be cleaned with a stiff wire brush to remove rust, and paraffin should be applied and allowed to soak in. This will probably have the desired effect, but if it does not a screwdriver blade should be inserted between the leaves and lightly tapped, preferably with a wooden mallet; alternatively, a leaf spring separator, which can be purchased from any large accessory dealer, may be employed. Several types are available and they are by no means expensive.

The next job is to scrape off all rust, and this can usually be done with a putty knife or an old table knife. The springs should then be cleaned thoroughly with paraffin and a stiff brush, wiped clean and well smeared with lubricant.

Graphite grease is very suitable, and lubricants of this type are sold for motorcycle chains. Another excellent preparation can be made up by the owner; it consists of a warm mixture of white lead and tallow in equal parts, and can be applied with a stiff brush.

Springs treated in this way and protected by gaiters should not want further attention for a very considerable period. Those owners who do not feel inclined to go to the expense of buying proprietary gaiters can, with a little trouble, make quite an efficient substitute out of American cloth and felt. A paper pattern should first be made and the American cloth cut to the requisite size. A strip of felt soaked in oil should be wrapped round the springs afterwards, the gaiter then being placed in position and secured with straps or tape.

Puttees are also excellent for protecting springs, a pair of old Army puttees or any similar material being very suitable for the purpose; the material should be cut into long strips about 1 in. wide, soaked in oil and bound tightly round the springs, the loose end being secured with string. To keep out the wet an outer puttee of American cloth is desirable.

In connection with the efficiency of the suspension system considerable importance attaches to the adequate lubrication of shackle pins, which should always receive attention when a car is being greased.

B19

RICH MIXTURE

LIGHT CAR COMMENT AND ADVICE

By "FOCUS."

A Personality.

Mr. J. F. Crundall.

TO lead the M.C.C.'s procession of motorcycles and cars from London to Exeter and back might well cause the bosom of any enthusiast to swell with pride, but Mr. J. F. Crundall modestly disclaims any such sensation, and tells me with a twinkle that it was merely "jolly cold getting in and out to interview marshals and re-erect the direction arrows which had fallen down." This is not by any means the first time he has driven one of the official cars in what I might call the winter Lord Mayor's Show of the motor world; in fact, he is an untiring official of the Motor Cycling Club, and often acts as one of the chief marshals in the events which the Club promotes.

Mr. Crundall is the manager of the Humber Repair Depot at Kilburn, London, and has been connected with Humbers for the past 26 years. Genial and good-tempered—how could he be anything else with such a tidy little car as the Humber Nine to look after?—he is always ready to welcome you and have a chat about old times—than which he is quite sure there will never be any better!

Handy in Fog.

ONE very foggy night a week or two ago I watched a procession of cars creeping towards a Midlands town at speeds varying between four and eight miles an hour, the leading car being a Trojan. The driver of this car sometimes sat in the driving seat, sometimes stood on the running board and sometimes walked alongside the car, steering with his left hand.

Those who were driving more conventional cars could not understand how he managed to keep control of the car, especially when walking beside it. To anyone who knows the Trojan, however, the matter is quite clear. By setting the slow-running adjustment of the throttle to give a fairly fast idling speed, the accelerator pedal can be ignored. The car can be started by pushing the gear lever into first, the driver being outside the car, and when visibility permits it is simple to hop on to the running board, move the gear lever into top and travel along at about six miles an hour on the level without bothering about engine control. When the fog permits, the driver regains his seat and speeds up.

For stopping it is necessary merely to pull the gear lever from top back into reverse, which acts as a brake, and then push it forward to neutral, holding the car by the hand brake.

This method of progress seemed to work well, as the car in question covered six miles in the hour and landed safely in town for the night without a single mishap. Truly is the Trojan dubbed a utility car.

The Latest Jowett—Official.

A READER living in South Africa has sent me a cutting from *The Cape Argus*, which describes a trial run in "The 1927 Air-cooled Jowett." Here are some extracts:—

> Taking a four-seater into the country for a short trial spin, it was hard to believe that the power plant . . . . was . . . . a twin. . . .
>
> At the conclusion of a long and severe test it was astonishing to find that the water at the bottom of the radiator was only slightly warm, and this on an air-cooled engine.
>
> The attractiveness of the car was added to by the nickel radiator—not a shell, but solid. . . .

I can only suggest that the writer would have been much better pleased with the car if he had left the solid radiator at home—it must have been frightfully heavy and of mighty little use, considering that this unique Jowett is described as being air-cooled. Jowett owners, I feel sure, will be disgusted to learn that a "short trial spin" was considered to be a "long and severe test." If I were asked what would comprise such a test for a Jowett, I should be inclined to speak in terms of a round-the-world tour.

Not Everlasting.

BECAUSE they are out of sight, fabric disc universal joints are often entirely forgotten. A few days ago I came across a case of a man who had covered 20,000 miles in 18 months and who during that period had never attempted to tighten the bolts securing the propeller-shaft spiders to the fabric discs. He then became troubled with a very bad vibration period. First

he suspected the rear main bearing of the engine, but finding this to be O.K. sought the assistance of a garage.

It so happened that the garage in question had an experienced foreman in the repair shop who suspected the propeller shaft immediately, and found that both the fabric joints badly needed renewal. It may pay others who have cars which appear to run roughly and which vibrate more than they should, to check their universals. The discs can easily be renewed at home.

Driving Blindfold.

AN advertiser of radiator thermometers at one time employed the slogan "Do You Drive Blindfold?" the implication being that a man who had no idea of the temperature of the water in the radiator was at a big disadvantage. Usually the blame for this lies with the maker of the car, not necessarily for omitting to fit a thermometer, but for so placing the radiator overflow pipe that every drop of water can boil away without the driver having any visible or audible warning.

Some years ago when touring amongst the Pyrenees in an under-cooled car which was very addicted to boiling, I bent up the radiator overflow pipe in such a manner that one could see it from the wheel by peering round the side of the screen. This arrangement, of course, was far from ideal, because the radiator overflowed its rusty contents all over the valances and bonnet, but it served to warn me when the danger point drew near.

Would it not be possible to fit overflow pipes with a whistle? They have been fitted to kettles to my certain knowledge, so why should they not work equally well on a radiator?

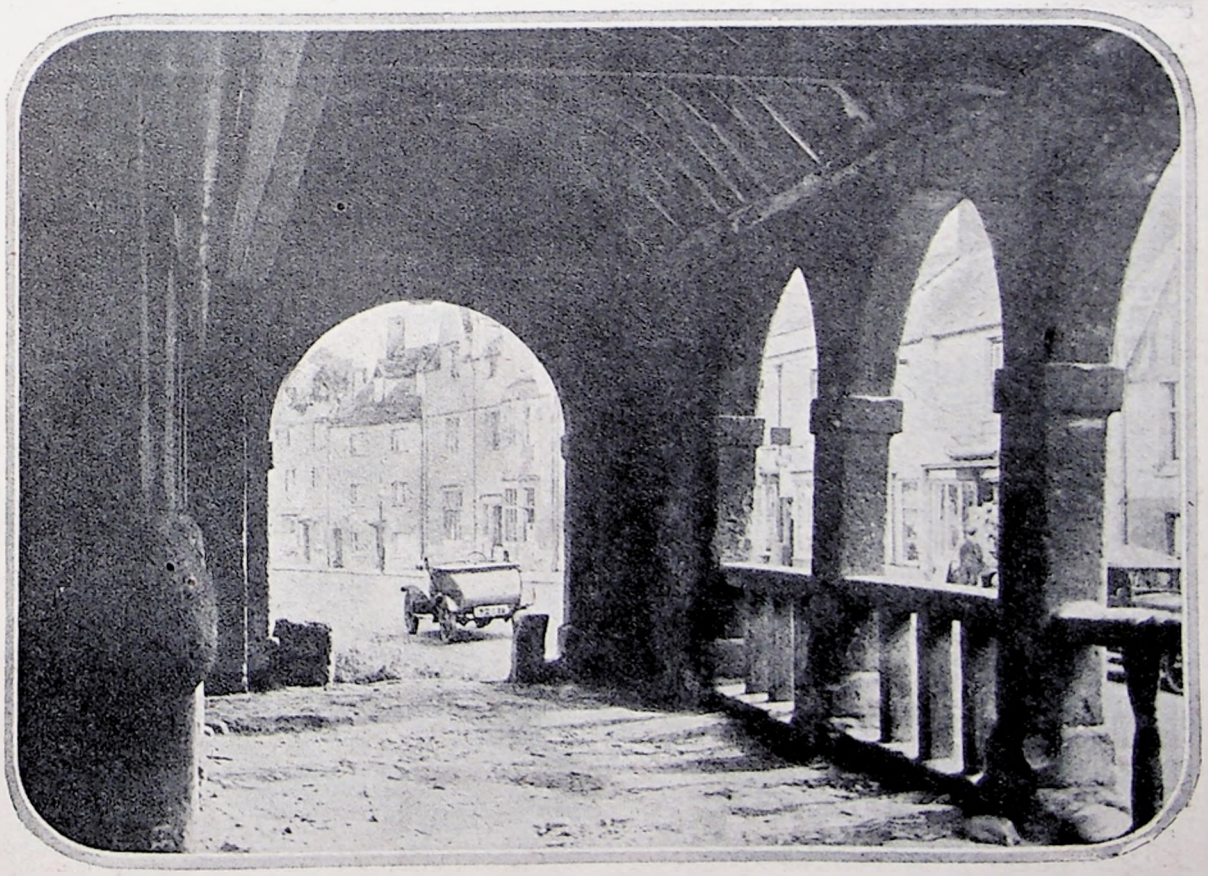
A good plan with a car which is prone to boiling is to fit a small coil of very small bore copper tubing to the radiator filler cap. So soon as boiling point is reached, steam and moisture escape from this and warn the driver by settling on the windscreen.

Decidedly Under-cooled!

INCIDENTALLY, in this connection two or three cases have come to my notice recently of drivers who have run considerable distances in their cars with the radiator cosy flap closed, and have not been aware of the fact until warned by jets of steam issuing from the filler cap. I myself was guilty of such thoughtlessness recently, and I am sorry to admit that I discovered what was happening, not by the radiator thermometer, which was certainly doing its duty nobly—the red line being right at the top—but by steam coming from the leaky filler cap, which just shows how doubly thoughtless one can be at times.

When the Water Boils.

NOW, the natural tendency is for a driver to stop his engine and remove the filler cap so as to "let off steam," but this, in my opinion, is not only the wrong way to go to work, but may easily result in hands and face being scalded. The



AT CHIPPING CAMPDEN. — This 16th-century building, known as the Wool Market, provides not the least of the antiquarian interests of this old Gloucestershire market town.

B21

best thing to do, especially where there is a fan or water pump, is to leave the engine running, open the flap and get away with all haste. Stopping the engine does not stop the water from boiling, and to remove the filler cap merely results in a sort of miniature geyser effect. To keep going, however, means that the cold air drawn through the radiator soon has the desired effect, and in my case I found that the red indicating line of the thermometer had dropped to normal again after five minutes' running.

Sliding Doors?

WITH doors getting wider and wider one has visions of salesmen at future Olympia shows opening them all and claiming that the car when viewed from the side becomes invisible! Seriously, though, the development is not altogether an unmixed blessing, for these doors, if accidentally left open or unsecured when the car is stationary, can really be a danger to other traffic. I have seen a saloon standing with both off-side doors wide open, thus occupying the whole fairway on one side of a set of tramlines and forcing cyclists and motorcyclists to go on the greasy track. With present body design sliding doors are impracticable—although their many advantages may make them a possibility in the future.

Half-hearted Instruction.

BOOKS of instruction always seem to skim over essentials and deal at great length with non-essentials. They try to teach a man who appears to need instruction in gear changing how to carry out elaborate repairs and adjustments, but omit to tell him how to drain the radiator in frosty weather.

A case in point was provided by a man I met in a hotel last week. He was grumbling because his engine was addicted to stopping at inconvenient moments. The car had done only 600 miles and the trouble had been getting steadily worse. I diagnosed a throttle stop screw which was bedding itself against the fixed stop, and this proved to be the trouble. Why not have a note in the instruction book advising owners to look to this adjustment from time to time? Every car of that make must develop the same fault.

Pity the Beginner.

HAND throttle controls really ought to be so designed that the throttle stop screw setting is not so all-important as it is. The 8 h.p. and 10-23 h.p. Talbots and the Windsor come to mind as having hand throttles which are adequately sensitive for the first part of their travel. Why does not every designer take the same pains to protect himself against the abuse of novices and the scorn of those who appreciate where the fault lies?

I myself know the annoyance of having to fiddle with the accelerator to keep the engine going in cold weather; how much worse must be the lot of the man who does not know that such a thing as a throttle stop exists, and must needs Charleston on the accelerator in every traffic stop which he encounters.

Apart from this, a too-sensitive hand throttle is also a great nuisance when starting up. One has to move it perhaps $\frac{1}{16}$ in., and if this is exaggerated or underestimated a difficult start results. I commend to manufacturers the real advantages which we should gain by having a hand throttle designed primarily to fulfil its most important function in an efficient manner.

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Topics of the Day

Tyre Types.

THE case is put forward in this issue for simplified nomenclature for tyres, and in the same article emphasis is placed upon the need for reducing the present ridiculous multiplicity of tyre sizes and types. This makes it difficult, if not impossible, for retailers to maintain stocks adequate to meet any save the most frequent demands, and it adds to the price of tyres. It was revealed at a lecture recently given to the staff of an important tyre-manufacturing concern that we have in England some fifty times more tyre types in everyday use than they have in America. Across the Atlantic last year there were four; here there were two hundred!

If the number of types of tyre could be reduced proportionately the need for simplifying nomenclature would not be so important as it is at present, but it would still exist. Present designations are not informative in the slightest degree to the man in the street: they tell him nothing. Given two tyre "sizes," he cannot even tell which is the larger, whilst if he is curious concerning the circumference of a tyre, the only method he knows for determining it is to use a tape measure. The article to which we have referred puts forward a method of describing tyre sizes which gets away from all these difficulties. If it were adopted, a car owner could compare different tyre sizes, and without taking measurements or making calculations. For this reason alone the proposals which are put forward merit the careful consideration of those concerned, whilst if some such system were adopted the economical advantages would be far-reaching.

The Need for Better Gearboxes.

FEW industries have offered such a scope for inventors as the motor industry, and in few spheres have the products of their brains met with such signal and rapid success. It is all the more remarkable, therefore, that the one component which was regarded by its original designer as barbarous and only a temporary makeshift should still be in use to-day, and, moreover, that it should have been improved only in detail, its principal disadvantage remaining. The component which occupies this anomalous position is, of course, the gearbox. Gear changing is unquestionably the most difficult part of driving a car. To steer, the driver has only to turn the wheel; to check his speed he has only to depress a pedal. Why should he have to manipulate a lever and two pedals in a manner calling for considerable skill when ascending a hill? Admittedly, expert drivers may derive a certain amount of pleasure from gear-changing — perhaps because it is a subtle compliment to their skill — but that does not justify the need for it.

It is the anathema of the novice and the bugbear of many quite experienced drivers; it is the cause of dangerous driving, for many a corner is taken too fast because the driver dreads making a change into a lower gear, whilst it causes the engine to be maltreated by being forced to stagger up a hill with top gear engaged when second or third are called for. The day will dawn when the "clash" gearbox will disappear, but how far off is it? The whole question is reviewed in an informative article, the first part of which appears in this issue.

Dangerous Stopping Places.

ON several occasions we have drawn attention to the practice of arranging stopping places for trams and buses at the near instead of the far side of a busy cross-roads, thereby causing a blind corner for traffic emerging from the side road and tempting drivers on the main road to draw out and pass in an area where they would be wise to keep well to the left. The case for the trams and buses is obvious. They are often pulled up by the cross-stream of traffic, and this compulsory stop enables time to be saved by allowing passengers to enter or alight, whereas when a stopping place is on the far side of the crossing two enforced stops may result. The question, however, seems to centre in the need for studying the convenience of the majority, and we appeal very earnestly to the appropriate authorities to consider the advisability of transferring all such stopping places to the far side of crossings. We also suggest that steps should be taken to prevent buses and trams from stopping at the same point.

The matter is brought into prominence by the fact that a certain local authority has transferred a tram stop from the far side to the near side of a quite busy North London road junction, and the result has been that motorists living in the district have voiced emphatic protests.

RACING CYCLECARS OF 1913—BELT DRIVE AND HIGH SPEED—LESSONS FOR TO-DAY.

Two cyclecars which took part in the 1913 Cyclecar Grand Prix at Amiens. The machine on the left is the winning Bedelia, whilst an Automobilette is shown above.

RECENT recruits to the ranks of cyclecar enthusiasts will be interested in the accompanying two photographs of 1913 racing cyclecars. The machines depicted were built specially for the French Cyclecar Grand Prix of that year, and the Bedelia, shown in the lower picture, won the four-wheeled class over a difficult road circuit of about 162 miles at an average speed of something over 40 m.p.h. The other machine is an Automobilette, which does not appear to have been "placed" in the race.

The photographs are reproduced from issues of this journal dated July 2nd and July 16th, 1913, and a description of the machines, as indicating the most advanced practice in those days, will, I think, be very instructive.

* * *

In the first place, one is impressed by the surprising length of the two cyclecars. The need for this was due, partly, to the use of centre-pivot steering, which was apt to be rather dangerous when cornering at high speeds, unless the wheelbase was fairly long.

The seating arrangement of the Bedelia must appear strange to modern eyes, but there were various points in its favour—one of which was, of course, that the body, although accommodating two people, could be as narrow as a single-seater. In the photograph the engine appears to be of the three-cylinder type; actually, however, it was a 90-degree V-twin air-cooled, with a bore and stroke of 82 mm. and 100 mm. respectively; what looks like a middle cylinder is the magneto.

* * *

The engine was mounted on rails, which allowed it to be moved in a fore and aft direction by worm gearing operated from the driving seat. This was for the purpose of altering the tension of the two 15-ft. raw-hide driving belts, but the tension could also be altered by swinging the hinged rear axle.

The drive from the engine was direct to the road wheels, gear-changing being effected by automatically expanding and contracting pulleys mounted on extensions of the engine crankshaft. The inner flange of each pulley was fixed to the shaft, but the outer flanges were controlled by centrifugal governors, so that when the engine speed decreased the pulley flanges opened and lowered the gear ratio, and vice versa.

* * *

By sliding the engine rearwards neutral was obtained; by moving it forwards the pulleys gripped the belts, which took up the drive in the ordinary way.

The sliding engine made it necessary to use flexible oil and petrol pipes and to arrange a telescopic exhaust pipe, as the total movement was about 4 ins.

In common with many other cyclecars of the period wire and bobbin steering control was used on the Bedelia, the wires being duplicated to give added safety.

* * *

The Automobilette racer was fitted with an 1,100 c.c. four-cylinder water-cooled engine having chain-driven timing and forced-feed lubrication. A propeller shaft conveyed the power to a bevel box containing two crown wheels mounted on a countershaft.

The driving pinion could be meshed with either of the crown wheels, which were arranged one on each side of it, thus providing forward or reverse movement. On each end of the countershaft was a variable pulley, in which ran an ordinary V belt to each rear wheel.

Two bonnets were used on the Automobilette. One covered the engine and the other, butting on to the first, served to protect the centre portion of the machine. Non-detachable wire wheels were employed and, as in the case of the Bedelia, steering was of the centre-point wire-and-bobbin type, but there was a modification regarding the suspension. The normal single helical spring was used on the centre pivot, but, in addition, there were two auxiliary springs anchored to the pivot support and to the axle. These springs, which were in tension, allowed the axle to tilt on an uneven road, but ensured that side sway was controlled. With a cyclecar of this type every precaution against overturning when cornering fast had to be taken.

* * *

Reading through the issues in which the race in question was described, I could not help thinking that if some of the cyclecars which competed could be brought to life to-day, they would give a wonderful 'fillip to the movement. Nearly all of them—there were about 30 in the race—were belt-driven, and the majority used 650 mm. by 65 mm. tyres; yet they performed in a manner which would not be discreditable to-day.

* * *

The Duo cyclecar which I owned in 1919 ran in this classic race and finished fourth amongst the four-wheelers.

The Duo was fitted with a "90 bore" twin-cylinder, o.h.v., water-cooled J.A.P. engine, which drove by chain to a countershaft, from which belts, running in expanding pulleys, conveyed the power to the rear wheels. Ackermann-type steering was used, but the control was by wire and bobbin, which never gave a moment's trouble.

The machine had seen its best days when it came into my hands, but I overhauled it very thoroughly—even to rebuilding parts of it and fitting a new body. When finished, it appeared to have regained all its original vim and was very fast, but delightfully easy to handle.

The chassis frame was of wood reinforced with a zig-zag strip of thin spring steel on each side member. Quarter elliptic springs were used.

In a future issue I hope to give full details of its construction, together with sketches of the more important parts, for the benefit of those who are looking for a good layout for a home-built cyclecar.

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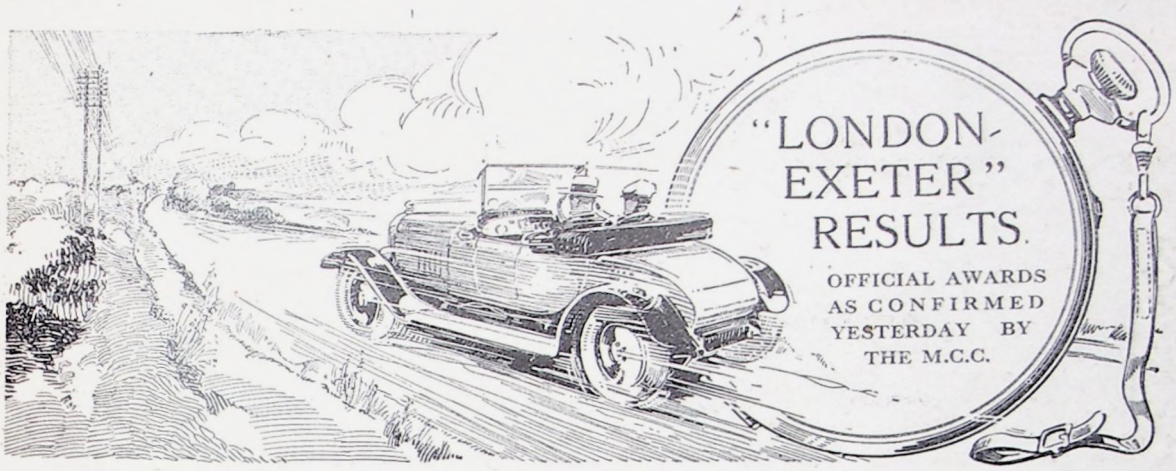
TO THE READER.—By mentioning "The Light Car and Cyclecar" when replying to advertisements, the progress of the small car movement will be assisted.



THE proportion of gold and silver medal winners set out below will not come as a surprise to the large number of readers who have taken a keen interest in the Motor Cycling Club's big Christmas classic.

It is well known, of course, that the standard of performance demanded was based upon figures in the possession of the club which have been gained in past London-Exeter events. The accuracy of these was naturally somewhat undermined, however, by the fact that this Exeter run was the first in which no trade competitors took part.

For the benefit of those who are not conversant with the rules and regulations of the event, it is necessary to point out that the gold medal winners covered the 337-mile course from Staines, via Salisbury and Yeovil to Exeter and back via Sidmouth, Axminster, Dorchester and Salisbury at an average speed of 20 m.p.h. They were never more than 10 minutes early or 10 minutes later than their prescribed schedule, and they made clean ascents of Peak, Marlpits, Salcombe and White Sheet Hills.

In the case of the last two hills named they also restarted from a compulsory stop on the gradient, whilst on Salcombe they were timed over a half-mile stretch with a gradient of 1 in 5 at the worst, and had to average the following speeds:—

Three-wheeled cyclecars	19½ m.p.h.
1,100 c.c. cars	14 m.p.h.
1,500 c.c. cars	16 m.p.h.
Unlimited cars	17 m.p.h.

To win a silver medal, competitors had to make clean climbs of all the four hills and otherwise comply with the gold medal performance, except that they were allowed to be up to 2 m.p.h. slower than their proper speed (three-wheelers 2½ m.p.h.) on Salcombe, whilst they were also allowed a late margin at any of the checks or controls of 20 minutes instead of 10.

An award always offered by the club which is, of course, principally in the nature of a souvenir, is a bronze medal, which can be won by any competitors who are not more than 10 minutes early or 30 minutes late at any place named on the route card.

The event for which the undernoted awards were won was popularly agreed to be one of the easiest runs in the series, of which it was the twelfth. This was due to the weather being exceptionally good, a clean, dry, frosty night being followed by a fine, sunny day.

Awards Gained by Car and Cyclecar Competitors.

GOLD MEDALS.

246 *H. E. K. Sawtell (Morgan).
250 F. A. Boggis (Aero-Morgan).
252 H. W. Holmes (Aero-Morgan).
253 S. A. McCarthy (Aero-Morgan).
257 H. W. Baker (Morgan).
260 J. S. Thurlby (Morgan).
262 R. D. Smith (Morgan-Special).
263 R. A. Martin (Aero-Morgan).
264 E. C. Fernihough (Morgan).
266 G. C. Harris (Morgan-J.A.P.).
267 M. W. Stokes (Morgan).
269 *C. B. Moss-Blundell (9.5 h.p. Salmson.)
271 C. L. Clayton (8.9 h.p. Amilcar).
273 P. D. Clegg (8.2 h.p. Sénéchal).
274 C. Anthony (8.2 h.p. Sénéchal).
278 J. Eddy (7 h.p. Austin).
279 F. B. Baker (9 h.p. Rover).
280 A. Eccles (9 h.p. Fiat).
283 H. J. Lovatt (7 h.p. Jowett).
284 H. G. Russell (7 h.p. Jowett).
285 J. Richardson (7 h.p. Austin).
286 T. L. Carrington (7 h.p. Austin).
289 T. R. Berry (9.5 h.p. Salmson, Grand Prix).
290 P. A. L. Meyrat (7 h.p. Austin).
292 G. H. Martineau (10 h.p. Salmson Special).
293 G. H. Symonds (7 h.p. Austin).
294 J. W. Barber (10 h.p. Salmson).
295 C. D. Conradi (9.5 h.p. Salmson).
296 I. J. Higgs (10 h.p. Salmson).
299 P. A. Warter (10 h.p. Salmson).
300 S. L. Engel (8 h.p. Talbot).
301 G. H. Bucklo (8.9 h.p. Amilcar).
309 D. J. C. Prizeman (7 h.p. Austin).
311 N. R. White (9.5 h.p. Salmson Special).
316 H. Jefferis (11.9 h.p. Frazer-Nash).
317 A. G. Gripper (12 h.p. Alvis).
318 G. T. Gamble (12 h.p. Lea-Francis).
319 C. H. Komp (11.9 h.p. Palladium).
322 O. H. C. Cornish (11.9 h.p. Frazer-Nash).
323 Richard Twelvetrees (11.9 h.p. Frazer-Nash).
324 W. E. Kendrick (11.9 h.p. Lea-Francis).
326 J. Hobbs (10.8 h.p. Riley).
327 N. Miller (10.8 h.p. Riley).
330 *W. Urquhart-Dykes (11.4 h.p. Alvis).
332 F. A. Jaques (11.9 h.p. Frazer-Nash).
333 H. J. Aldington (11.9 h.p. Frazer-Nash).
336 H. H. S. Keogh (10.8 h.p. Riley).
341 J. V. Brady (12 h.p. A.B.C.).
353 G. L. Jackson (12.5 h.p. Alvis).
355 F. Clifton (16 h.p. Diatto).
358 G. E. Gather (13.9 h.p. M.G.).
361 H. Slater (15.9 h.p. Bentley).
364 V. A. Bruce (16 h.p. A.C.).
365 P. H. Manners (15.7 h.p. A.C.).
366 J. O'Donnell (15.9 h.p. A.C.).
370 A. W. Wood (11.9 h.p. Morris-Special).
371 C. A. B. Broomhall (12 h.p. Phœnix-Special).

SILVER MEDALS.

251 C. J. Turner (Morgan).
258 H. R. Taylor (Morgan-J.A.P.).
261 E. A. Marks (Aero-Morgan).
270 S. H. Collier (10 h.p. Talbot).
277 S. J. Clutterbuck (9 h.p. Rover).
302 W. V. Beach (9 h.p. Rover).
304 D. W. F. Bonham-Carter (7 h.p. Jowett).
307 J. A. Driskell (9.5 h.p. D.F.P.).
325 G. F. Smith (10.8 h.p. Riley).
328 R. A. F. Clark (12 h.p. A.B.C.).
335 S. E. A. Watson (10 h.p. Surrey).
338 C. W. Gallifient-Holmes (11.9 h.p. A.C.).
340 J. J. Boyd-Harvey (12 h.p. Lea-Francis).
342 L. T. E. Clark (10 h.p. Windsor).
344 E. S. Hutchence (11.9 h.p. A.C.).
347 C. R. B. Chiesman (13.9 h.p. M.G.).
348 W. Cooper (19.8 h.p. Paige-Jewett).
349 N. H. Keep (13.9 h.p. Delage).
354 W. C. Treloggen (11.9 h.p. Riley).
359 H. G. Reigato (12.45 h.p. Metallurgique).
367 C. C. Griffith (11.9 h.p. Morris-Cowley).
369 L. A. Sandford (13.9 h.p. M.G.).
372 A. S. Llewellyn (12 h.p. Alvis).
375 H. S. Carpenter (12 h.p. Swift).

BRONZE MEDALS.

255 A. T. Pryor (Omega).
256 R. J. Martin (Omega).
268 H. Beart (Morgan-J.A.P.).
276 D. Duncan-Smith (8.7 h.p. G.N.).
303 C. Ford (8 h.p. Rover).
308 G. H. Strong (7 h.p. Austin).
312 E. J. Kehoe (7 h.p. Austin Cup).
314 *W. E. Bliss (10 h.p. Fiat).
315 F. Broomfield (11.9 h.p. Palladium).
320 W. E. Castello (11.9 h.p. Palladium).
331 E. Hillary (11.9 h.p. Frazer-Nash).
354 R. Francy (10.8 h.p. Clyno).
357 N. A. Taylor (11.4 h.p. Standard).
345 *P. W. White (14.4 h.p. Armstrong Siddeley).
346 R. H. White (13.9 h.p. Morris).
350 A. L. Greenhill (15.9 h.p. Berliet).
357 C. G. Fitt (14 h.p. Delage).
360 F. G. Jones (12.1 h.p. Metallurgique).
363 *S. C. H. Davis (19.5 h.p. Invicta).
368 H. Newton (14 h.p. Standard).
374 R. C. Rowland (19 h.p. Austro-Daimler).

NO AWARDS.

247 J. L. Goddard (Morgan).
248 V. J. Hartley (Aero-Morgan).
249 D. S. C. Macaskie (Morgan-J.A.P.).
254 D. F. Heybourn (Aero-Morgan).
259 B. B. F. Russell (Morgan-J.A.P.).
265 A. C. Maskell (Morgan).
272 S. Hellen (9.5 h.p. Salmson).
275 J. V. Hay (8.7 h.p. G.N.).
281 H. S. Barton (7 h.p. Austin).
282 F. C. Everett (9 h.p. Rover).
287 C. M. C. Turner (8 h.p. Gwynne).
297 S. C. T. Littlewood (10 h.p. Swift).
298 P. H. Shaw (8.3 h.p. Renault).
306 A. T. Clark (4.9 h.p. Nomad).
313 O. Clark (8 h.p. Sénechal).
343 H. S. Stevens (12 h.p. Lea-Francis).
373 J. Wilson (11.9 h.p. Morris-Cowley).

Non-starters.

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

* Indicates travelling marshal.

Complimentary awards were made to Messrs. L. A. Baddeley, J. F. Crundall and R. O. Webster as officials preceding the competitors.

AMONG THE BY-WAYS.

(Above) The fine effect of trees arching overhead is not often to be found on main roads. The delicate tracery of the leafless branches forms a pleasing contrast with the dense summer foliage seen on the right.

OUR COUNTRYSIDE IS WOVEN WITH A NETWORK OF QUIET OLD BY-WAYS WHICH ARE CHARMING AT ALL TIMES OF THE YEAR. WHY NOT EXPLORE THEM?

IN the course of short out-and-home trips there is nothing more delightful than to delve into hidden by-ways and to explore little-used roads. The pleasures of these lanes are manifold, and the lover of Nature will be amply compensated for his temerity in venturing along ways that are devious and abound in blind corners and concealed turnings.

The birds and other creatures of the wild, the flowers on the bankside, the glorious trees that overhang and give welcome shade in summer, and the knowledge of being away from the bustle of the highways, all make for true enjoyment, but such runs are more for the potterer than for the motorist whose ambition is distance.

Personally, the writer has something more than a sneaking regard for the quiet old by-ways that lead to anywhere and everywhere. There may be no sign-posts to tell in which direction lies the next town or village: each abrupt bend appears to lead only to another sharp corner, the lane winding on and on indefinitely, but—and herein lies the charm—one is frequently rewarded by sudden and unexpected glimpses of old-world hamlets nestling in snug hollows, of beautiful age-old churches with squat towers and hoary walls stained with Time, of ancient manor-houses or pretty thatched cottages tucked away under the woodland.

The broad highway is excellent when you desire to see the milestones chasing each other, as it were, so quickly do they slip by when the lively car is opened out. If, however, it is your pleasure to see rural England at its best, then it is to the "little winding road that leads to the hills and back again" that you should turn.

On main arterial roads there is seldom any desire to linger by the way, but in the lane there is every excuse for travelling slowly. Nothing is calculated to fill one with so much pleasure as the beautiful vistas that at times burst upon the eyes on breasting a short rise in the winding road; the high banks fall away on each side, and there, below, lies a wonderful panorama—an exquisite picture of fair countryside that tempts one to pull up at the roadside for a while to gaze upon such scenes as only England can show.

Even at this period of the year, when "Winter's hand spreads wide her hoary mantle o'er the land," the by-way is full of charm. Given a bright, sunny day after a night of frost, when the surface of the road is hard and firm, and you will see beauties that the main road never affords. Fewer visitors invade these lanes in winter than at any other period of the year, and for many a mile the road is deserted; and how beautiful it is! Frost transforms the winter land-

scape into scenes of wonder and delight. Very charming are the drooping wayside trees when enlaced with sparkling silver-dust. The effect is quite dazzling when the sun shines and countless microscopic gems scintillate and glitter on every twig and slender bough.

Jack Frost weaves his fantastic designs on the holly leaves and silvers all things; every blade of grass and the fronds of the crumpled ferns and bracken are edged with feathery lustre, and the sun glows on a world of white shimmery dust shot with rainbow reflections. Such typical winter scenes are as delightful to the eye as any we meet with in summer.

IN SNOW OR SUN.

(Top) A fine snow scene in the Forge Valley Woods, near Scarborough. (Centre) The ancient gibbet post, near Gopsall Hall, Leicestershire, a little-known relic which, used in 1801, was probably the last gibbet used in this country. (Below) A picturesque creeper-clad cottage in Devon.

At all periods of the year the by-ways are full of charm. It is to the tree-shaded lane that the first migrant comes in spring; it is here that the first primrose gives Old Man Winter notice to quit. The snow may lie a little longer in the old by-way than it does on the high road and winter may linger in the hollows; but it is here, in the lane, that you will see the first signs of the awakening year.

In summer, when Nature "paints the landscape with her brush," and the lane is transformed into a bower of foliage and flowers innumerable strew the banks with silver and gold, it is a place to linger in, for the songs of birds make the heavens ring musically from dawn until dusk. You cannot find this on the highway, which has little to offer the true Nature-lover.

Indeed, the by-way is well worth exploring at all periods of the year, and the more fully one explores its charms the tighter is the spell of enchantment woven. The little by-road that winds and climbs and dips its way through woodland and by meadow, over gattling trout stream and beneath shady trees, offers a field of promise to the country-loving motorist with a small car.

Although the road surface may not be altogether perfect, it is often quite good, and in some instances compares very favourably with the average main road. Many by-ways are very narrow, and it is often difficult to pass other vehicles, but with their comparative freedom from traffic this trouble is not serious and the charm of the lanes is ample compensation for the slight inconvenience.

It is rather good fun exploring the old country by-ways that radiate from most villages. Indeed, a novel and interesting day's run can be planned from a local Ordnance map by marking out the by-roads that will allow a circular out-and-home route to be followed. You will be sure to meet with particularly interesting scenery, and will probably find yourself in some ancient hamlet hidden away in the wilds and forgotten by the hurrying world outside—a place where the oldest inhabitants still think of all cities beyond the nearest market town as "foreign."

The little winding by-way, with its innumerable delights, its beautiful vistas, its untrammelled and unspoilt greenery, is always and altogether charming. It is easily accessible to the owner of a small car who is happy enough when pottering along, and who, in addition to being a motorist, is a lover of Nature and the beautiful countryside. A.S.

Snow

This 11.4 h.p. Standard was driven to this point (above), where it was stopped by a drift. The photographs (2) and (5) show it en route.

THERE are few people who willingly take out a car when snow is lying deeply on the roads, but occasions come when one is compelled to drive under these conditions, and it is wise, therefore, to be armed with a knowledge of the pitfalls.

In some parts of America snow lies on the roads for several weeks each year, and the local motorists come practically to disregard it. This is simply because they have accustomed themselves to driving on very slippery surfaces and, consequently, can do so with safety.

The most important thing, of course, is to have reliable non-skid chains fitted on the rear wheels. They not only prevent skidding, but aid braking to a very considerable extent and allow hills to be climbed and drifts negotiated which otherwise would be impossible.

Many people who would find non-skid chains useful do not buy a pair because they believe them to be extremely difficult to fit. Actually, however, when the knack has been acquired they can be put on in a very short time. The best plan is to lay them out on the road behind the car and then secure their forward ends with string or wire passed through the spokes.

The car can then be pushed back so that the chains wrap themselves around the wheels, when the fasteners may be secured. After driving a few hundred yards it is wise to stop and adjust the circumferential chains so that they are a little tighter.

With disc wheels the fitting of chains is not so easy, but, even so, it presents no real difficulty to a practised hand.

If the cost of chains is objected to, or if they are unobtainable, an alternative plan is to wrap a fairly stout rope around the tyre, securing one end to a spoke and winding the rest round in spiral fashion. The rope will wear quite well on fairly deep snow, but is not very serviceable on roads where the snow has frozen hard.

With disc wheels roping tyres is more difficult than with spoke wheels, but rope can be made to serve by first preparing two rings a little smaller in diameter than the rims for each wheel, and securing to them cross-pieces which pass over the tread, the arrangement being similiar to the method which is commonly adopted for securing non-skid chains.

It is essential, when driving over snow-bound roads, to keep the speed as low as possible, and this applies particularly in the case of a car which has no front-wheel brakes. At 10 m.p.h. there are few circumstances in which it would not be possible to pull up quite easily, but at

When chains have to be fitted to the rear wh bridge, where the driver and

Showing (above) how risky it is in snowy weather to venture along by-roads. Drifts, several feet deep, may be encountered. See also (4).

20 m.p.h. the lightest touch on the brakes may provoke a skid which would end in disaster. When snow is lying on the roads a bad skid is almost impossible to correct, as locking over the steering merely causes a front-wheel skid, so that the last condition is generally worse than the first.

When descending hills it is wise to engage a low gear and keep the speed down literally to not more than five miles per hour or thereabouts, but for climbing them it is best to keep the speed fairly high.

A hill with snow lying thickly upon it can often be climbed quite easily when rushed, whereas an attempt to crawl up it slowly in bottom gear would result in the car coming to rest with wheel-spin. If a slow climb must be attempted, however, use the hand throttle rather than the accelerator, as this allows a more steady drive to be transmitted to the rear wheels.

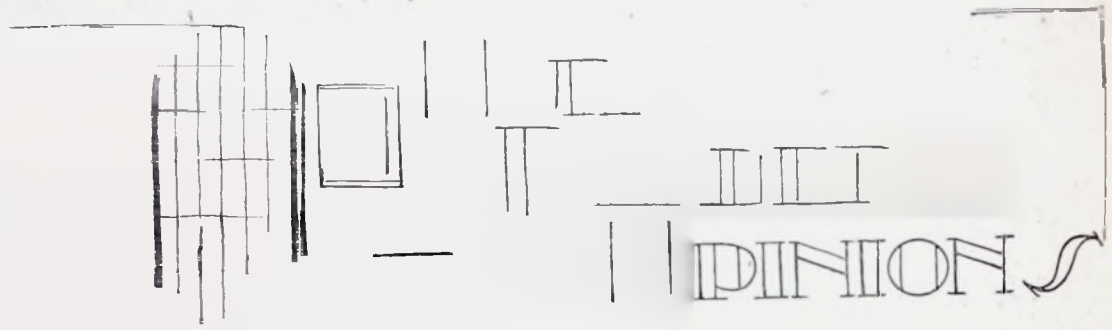
When snow lies as deeply as it is shown in the accompanying photographs it might be thought that progress would be absolutely out of the question; but, in point of fact, the party depicted managed on the day that the photograph was taken to cover upwards of 200 miles, more than 50 of which were under the conditions shown. Of course, one's progress in these circumstances is more a matter of luck than judgment, but, even so, a knowledgeable driver will make much better progress than one who has no experience of driving under difficulties.

A good rule to remember is to keep to main roads and to keep well to the centre of them. It is best, however, not to run in the ruts caused by other vehicles, as these, when frozen hard, are extremely rough on the tyres and put very heavy loads on the various parts of the steering gear.

When the snow is lying soft and deep it is well to take a shovel, as any bend in the road may reveal a drift which, even when vigorously charged, will bring the car to a standstill. In these circumstances the passengers have to turn out and dig, and the larger the shovel they have the sooner will they be under way again. If there is no shovel available the floorboards of the car can be made to serve, but they are far from satisfactory for the purpose and make hard work of a job which, with proper shovels, can be made enjoyable rather than the reverse.

Sound advice for beginners is to leave the car in the garage, unless they must use it, when snow lies on the roads or a storm appears to be imminent. The negotiation of a considerable depth of snow calls for really expert driving.

s; wise to do the job under an archway or railway rm are sheltered from the storm.



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

THREE *versus* FOUR SPEEDS.

A Question of Power-weight Ratio—The Ideal Car.

Three Speeds Favoured.

I am in hearty agreement with many points contained in Mr. L. B. John's letter, published in last week's issue of *The Light Car and Cyclecar*. Personally I have had considerable experience with what I consider an ideal light car. It weighs 14½ cwt., has a three-speed gearbox (the ratios being: top, 4.4; second, 7.75; and bottom, 14 to 1) and its engine is an 11.9 h.p. side-valve Anzani. This car will carry its full load easily, speedily and economically throughout most day's runs entirely in top gear, second being used for starting; it will attain close on 60 m.p.h. without distress and, roads permitting, will cruise along at 45 m.p.h. indefinitely. This performance is obtained with a petrol consumption of 38-40 m.p.g.

Over-bodied Cars.

The balance of power of the engine is delightful and if it is necessary on occasions to drop to second on severe hills, or in traffic, the "pep" and speed are there and to spare.

My contention is that such a combination of engine, gears and chassis yields infinite satisfaction to a discriminating driver and that it is usually the under-powered or over-bodied car which needs a four-speed box. I am not speaking of stunt cars, but of normal, everyday pleasure vehicles.

EDWARD FORDE.

Reaching 60 m.p.h. in 20 secs.—

By plunging into the old controversy of three speeds or four, it would seem that your correspondent, the Hon. Victor Bruce, has become rather unpopular with several four-speed enthusiasts. Such, I fear, will always be the fate of people who attempt to generalize on such a wide subject. Can it be possible to find an answer to a question involving so many independent points? Power-weight ratio; proportion of the intended variable weight (or load) to the total weight of the car; for what purpose the car is required; whether the engine is designed for high revving or pulling power, and many other weighty problems are all involved. I have driven three-speed cars on which a fourth ratio would have been a godsend, and others where it would be a mere encumbrance.

—Without Changing Gear.

Regarding your correspondent's ideal of reaching 60 m.p.h. from rest in 20 secs. without change of gear, I happen to have a 1½-litre three-speed car which will do this on its middle ratio, so I presume that by driving in this gear all day I am enjoying "light carring" in perfection! Personally, I prefer to get into "top" occasionally.

This is a car on which a fourth speed would, for ordinary road use, be quite wasted. For speed trials or hill-climbs it would, of course, be an asset, but in any case by use of bottom and second my car would probably reach 60 m.p.h. as quickly as "Lea F.'s" four-speeder. Regarding one or two of the points mentioned by that writer, perhaps he is unaware that Mr. Eldridge put up some quite respectable speeds with a side-valve engine, that the 1,500 c.c. class of the "Production" Car Race was won by one and that Capt. Frazer Nash has just lowered a record in the 1,100 c.c. class? Also, what of all the wonderful little Austins we see at Brooklands—have they o.h.v. engines? Further, I can assure him that quarter-elliptic springing, when properly applied, is perfectly satisfactory for either front or rear suspension.

But to solve the problem of three, or four speeds when two-thirds of the drivers on the road only change gear as the very last resort! Do let us start with something easy, such as perpetual motion or the fourth dimension.

R. ATIOS.

Four-speed Gearboxes and Engine Design.

I am glad to see so experienced a motorist as the Hon. Victor Bruce expressing in your columns the courageous opinion that the ideal car is one which will have no gear-box. The controversy as to the relative advantages of three or four-speed gear-boxes is an old one. When it periodically breaks out afresh it inspires some of us who have been motoring for a good many years to reflect upon how comparatively small is the progress made in car design in recent years.

"Humouring Inefficiency."

There are always enthusiasts who claim many advantages for four-speed gearboxes, but it is significant that such arguments should appear in the very issues in which you have of late so convincingly demonstrated the wastefulness and comparative inefficiency of the modern petrol engine. Every experienced motorist knows that, things being as they are, the four-speed gearbox enables a skilled driver to do better under many conditions than does the three-speed, and that with some designs of engine the four-speed gearbox is practically essential if the best performance is to be obtained. But in being satisfied with providing four-speed gearboxes, are not designers working from the wrong aspect by humouring inefficiency? I thoroughly agree with Mr. Bruce that a car which can give the necessary acceleration on one gear is what the public wants, and I contend that this must be the ultimate ideal from an engineering point of view.

Mr. Bruce's opinion presents a strong temptation to me to air that advocacy of the steam-driven light car which has so much amused some of my petrol-fettered friends. I will not trespass upon your space in this direction now, for the question involved in the present discussion is the efficiency of the internal-combustion engine, but I do invite certain of your readers to keep an eye on the British Steam Car Association for I feel sure that more than talk will be forthcoming from that vigorous infant before long.

OSCAR E. SEYD.

OUR READERS' OPINIONS (contd.).

Exhaust Gas Turbines.

In your issue of December 31st you publish a very interesting and intriguing article pointing out the possibilities of a turbine driven by the exhaust gases. In your editorial comment you state that an increase in engine power of about 15 per cent. is possible by driving, as your contributor suggests, the auxiliaries (dynamo, fan, etc.) by this turbine. This appears to be a fallacy, because these auxiliaries, unless in a state of extreme mechanical inefficiency do not absorb more than 5 per cent. of the engine power (as opposed to thermal efficiency), and the gain in power available at the crankshaft cannot therefore be greater than 5 per cent.

Their Limitations.

As your contributor points out, the surplus power may be used to drive a supercharger; but I believe I am correct in saying that to drive a blower which will "boost" a 1,500 c.c. engine only about 5 per cent. nearly 8 h.p. is necessary. This implies that the exhaust turbine must generate power to the extent of, roughly, 40 per cent. of normal engine power in order to produce a gain of 5 per cent., or at the most 10 per cent., in engine power at the crankshaft.

It is true that the surplus power of the turbine could be used to generate more electric power, but since the modern dynamo is already capable of doing all that it is asked, and in addition overcharging its battery unless the driver is careful, there does not appear to be much gain here. The main possibility of the scheme seems to be along the lines of your contributor's last suggestion—that the extra current might be used to actuate electro-magnetic brakes.

HILTON SKINNER.

Competitions and the S.M.M. and T.

As one who was strongly against the "trade ban" when it was inflicted on competitions some months ago, I was very pleased to read your article, "Wanted—a Real Test," and also the letters in support from several manufacturers who have sufficient confidence in their productions to wish to enter such events once again. I am in agreement with several of your correspondents that there were too many trials being run before the ban came into operation, but what I consider would benefit the trade and general public alike is that the S.M.M. and T. should give their consent to, say, 12 trials in the year, these to be well-known events organized by the best clubs. They should provide a stiff and sensible test and should be given the necessary publicity.

Twelve Recognized Trials Suggested.

To suggest a few suitable events, I would name the Colmore Cup, Victory Cup, London-Land's End and London-Edinburgh, a six-days' car trial with no special award but "golds" for 100 per cent. performances, the Scottish Six Days', and the Travers Trophy; the remaining five could easily be selected according to district. I consider the events should be allocated equally, as far as possible, to Midland, Northern and Southern districts.

I quite agree with "Commercial Traveller" that it is essential to have the trade driver at the wheel of his firm's car to give a fair idea of its performance; further, he can report any weak points which may only become apparent under the conditions of an arduous trial. It is up to the manufacturers to get ahead with the "lifting of the ban" as soon as possible and let us see what their cars can do in 1927's big trials.

ANTI-BAN.

The Five-day Week.

We have noted a good deal of comment in the Press lately on the recent adoption by Mr. Henry Ford of the five-day week in all his establishments all over the globe, and it may interest your readers to know that we have been running a five-day week in our body-building works for the last four months and have found no ill-effects from the change; in fact, so far as we can ascertain, none of our staff has any wish to go back to the old régime.

Beneficial Results.

Our output has been steadily rising per man ever since its introduction, and while we do not necessarily suggest that the five-day week is the sole cause of this increase in our output, we are confident that it does play an important part.

In our opinion, there is a great deal to recommend the five-day week, for it must be borne in mind that modern conditions demand a very much higher rate of output per individual, and therefore greater concentration, with the increased tendency to staleness. Further, owing to modern housing conditions, when a man leaves work, by the time he has returned home there is not much of the day left which he can devote to such interests as gardening, games, etc. A long week-end does give every individual an opportunity of having some amount of time to himself, and it seems to us that the test of the success of the five-day week depends solely on whether or not each individual can increase his actual output in the five days to equal that which he did on the old system in five and a half days, and we have little doubt that this can definitely be done.

If it can be done, surely—regarded from the economic standpoint—nothing has been lost and a considerable gain to the well-being of the community will have resulted by the application of a five-day week, so far as it can be applied to the varying types of industry and undertakings in the country.

For GORDON ENGLAND, LTD.
E. C. GORDON ENGLAND.

Do We Want Special Motor Roads?

Spoiling the Countryside.

Mr. Elias Toser's argument against special motor roads seems to me to be singularly off the point. He states that novices with no mechanical perception would ruin their cars by excessive speeding, but surely that is entirely their own business and such an argument is useless against a proposal which affects the whole of the motoring community. If the novice cannot detect signs of distress in an engine he should content himself with sober speeds, and, in any case, there are plenty of opportunities for ruining a car on our present roads; we are all familiar with the spectacle of a car labouring uphill in top gear, accompanied by a loud knock from the engine (as likely as not the ignition is fully advanced), followed by a rending crash when at last the driver summons up courage to change gear. This kind of treatment, at any rate, would be almost eliminated on a long straight road with easy gradients.

No Objections to Tolls.

The only sensible arguments against special motor roads are, that, if undertaken by the Government, there is a possibility of taxation increasing for a time and that the countryside would inevitably be spoiled by the petrol stations, refreshment houses and so forth which would grow up alongside.

"E.L.G." has no legitimate grievance against the tolls if the roads were in the hands of a private company; there would still be ordinary public roads, but for many the payment of a toll would be quite worth while; it would probably be less expensive than a fine for speed or dangerous driving, and the freedom from side turnings, horse traffic, lorries, animals and school children would be no small blessing.

A. N. SPOTTISWOODE.

The Existence of Motor Roads Not Justified.

The problem of whether or not special motor roads are desirable is certainly a very difficult one, but I personally do not think their existence at the present time would be justified; if their construction and maintenance were financed by a private company fairly heavy tolls would have to be charged, and I think most drivers would favour the old routes, unless they were on very urgent business. In the case of many of the existing roads connecting large towns it is possible on weekdays to drive quite as fast as is consistent with economical running in the case of the average light car. The result, I am afraid, would be that only motorists in a very great hurry would use the new roads, and, as a result, the concern financing them would soon get into difficulties.

Present Roads "Fast" Enough.

G. G. H. SMITH.

TO CORRESPONDENTS.—Please write clearly on one side of the paper only and leave a wide margin. It helps!

OUR READERS' OPINIONS (contd.).

Cautious Disabled Drivers.

I thoroughly agree with the contents of the letter by Mr. Fred Ashley in your December 31st issue. I also lost my left arm through wounds, and, having driven cars since 1919, have had one accident, on which occasion I ditched my car in a fog. I shall be pleased at any time to undergo a test in driving, and I consider that if a driver is disabled he takes more precautions on that account.

ANOTHER DISABLED DRIVER.

The Coming Motor Bill.

With the new Motor Bill in view it would be interesting to hear the various points that your readers would like to see embodied in the Act. I, for one, should select the following:—(1) Stationary cars must not stand with headlamps full on at night so as to dazzle other traffic. (2) All traffic must stop on its proper side of the road and not cut across and pull up on the wrong side. (It is very puzzling to a driver on a strange road to find a car on the wrong side with all the headlamps full on, especially in foggy weather.) (3) Only magistrates with a sound knowledge of motoring and motorcycling should try cases relating to offences under the Motor Act. (4) All cars and lorries should be compelled to carry an efficient mirror, this being especially desirable in the case of enclosed vehicles.

Suggested Clauses.

R. B. BIRCH.

Easy Starting in Cold Weather.

In a recent issue of your journal we notice a suggestion that to facilitate starting twin-cylinder engines in cold weather it is helpful to inject a few drops of paraffin oil through the compression taps at the conclusion of a run whilst the engine is still warm. This suggestion is excellent up to a point, but does not take into account the tendency for paraffin to evaporate and very soon dry up.

Cycle Lamp Oil Useful.

Our cycle lamp oil is strongly recommended as a far superior alternative to paraffin for this purpose. It not only has no tendency to dry up, but actually, by virtue of the fatty matter it contains, it is an excellent lubricant. With our cycle lamp oil, which is rich in fatty matter, there is no risk of scoring the cylinders. This might happen where an excessive quantity of paraffin has been injected and has in consequence washed dry the cylinder walls. This tip is known and esteemed by plenty of motorists. Our cycle lamp oil is handled by the majority of cycle and motorcycle agents and is therefore easily obtainable.

PRICE'S PATENT CANDLE CO., LTD.,
J. W. G. BROOKER.

Reclaiming Used Oil.

We have read with much interest the letters passing in your publication on the subject of reclaiming used oil, and none with more interest than that appearing under the signature of Mr. Bowrey, of our friends, Messrs. Alexander Duckham and Co., Ltd. We fully endorse what Messrs. Duckham say, and we do not think there can be any two opinions amongst those who know as to the undesirability of the private motorist endeavouring to refilter his oil and use it over again.

Amateur Attempts Undesirable.

Some very interesting tables appearing in *The Commercial Motor* a few weeks ago showed the total running cost of lubrication to be infinitesimal as against the other costs. It is always a marvel to us that the motorist owning a high-class and expensive machine should hesitate for one minute as to buying the best oil for his car, packed in such a way as to ensure that he is obtaining the article for which he pays and in the same condition as it left the hands of the manufacturers.

For STERNS, LTD.,
H. REYNOLDS, Manager, Motor Dept.

A Mysterious Loss of Compression.

Perhaps one of your readers could advance a solution of the following trouble, which I am finding extremely puzzling. I own a Bayliss Thomas, which I have decarbonized three times. On the first occasion the car started up easily and subsequently ran perfectly, but after decarbonizing the second time the engine ran for a few revolutions and stopped suddenly. I turned the starting handle and found that there was a total loss of compression. The engine would not start on turning by hand, but eventually started with vigorous use of the starter, whereupon the compression returned.

What is the Cause?

After I had done the job the third time the compression was perfect at first, but exactly the same thing occurred as before—a total loss of compression was noticeable after a few revolutions—but, unfortunately, the starter was out of action this time. I thought this out, over my lunch, and on returning to the engine found that compression had also put in an appearance. On attempting to restart the engine, however, I found that it did nothing but blow back into the carburetter. The tank was filled with petrol, which came through all right, the carburetter was thoroughly cleaned, the valves were adjusted carefully to their usual settings, and sparking plugs were in perfect condition. The engine simply repeated its previous performance, and was finally started by pushing the car to the top of a steep hill and running in gear for about 300 yards. The valves were not sticking, and the stems had been polished with emery paper. The car is run every day, and decarbonizing was finished the same day. Can any readers suggest the cause of this curious behaviour, which has puzzled me considerably?

A. W. MORRISH.

Motoring Conditions in Java.

Being a regular reader of your excellent journal I have been very much interested in readers' opinions of different makes of car. In this connection I think that some of your readers may be interested in my experience with a 1926 Jowett full four-seater model in Java. To start with I should like to point out that formerly I have had experience only with cheap and medium-priced American cars and I certainly much prefer the Jowett.

Advantages of a Light Car.

On arrival it was unpacked entirely by myself, although I am no more than an amateur, with a little mechanical knowledge. The car arrived in perfect condition, being extremely well packed. Fixing the wheels proved to be very easy, three coolies lifting first the back of the car, whilst I fitted the rear wheels, and then the front. The engine fired on the second swing of the starting handle.

I have covered 7,000 miles and have experienced no trouble at all—not even a puncture (touch wood). I have always attended carefully to the lubrication of all parts and kept all nuts and bolts tight. The valve tappets have been adjusted twice, and after covering 6,000 miles I decarbonized the engine and ground in the valves. This was not actually necessary, but I did the job as I was about to undertake a long tour.

Java is extremely hilly, and when touring through the country altitudes change from sea-level to 4,000 ft. very quickly, the roads abounding in long and stiff climbs; by long I mean continuous ascents of 5 to 10 miles. The gradients are generally 1 in 10 to 1 in 15 on main roads, but on smaller roads a gradient of 1 in 4 is often encountered. The Jowett takes them all and never boils, notwithstanding the tropical temperature. I can easily average 25 miles an hour over our roads. Of course, lots of cars can do this, but not with a petrol consumption of 50 m.p.g., which is quite normal for my Jowett and which speaks well for the efficiency of the engine.

The big advantages of the Jowett compared with the former cars I owned are economy, ease of maintenance, seating comfort and leg-room (I am 6 ft. 3 ins.), road-holding qualities (Smith shock absorbers are fitted), vibrationless running, quietness at high road speeds and freedom from boiling.

Our roads are fairly rough, but the suspension of the Jowett, especially at speeds above 20 m.p.h., is excellent. I admit that on hills I am often passed by American cars (90 per cent. of all cars in this country are American), but I generally repass them at the top of the hill, when they are filling up with water! None of them, moreover, can approach a petrol consumption of anything like 50 m.p.g. I am thoroughly satisfied with my Jowett and hope to keep it for many years to come.

O. SIELCKEN.
Java.

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

OUR READERS' OPINIONS (contd.).

Six Years with Incorrect Number Plate.

A Remarkable Experience.

I have had a curious experience with my car licence. In 1919 I bought a new 9.5 h.p. Standard and the agent who supplied the aluminium plates evidently made a mistake when he ordered them. The plates bore the number 3297, whereas the licence reads 3279. I did not find this out until I got my new licence a week ago, and, of course, I have had to buy a new set of plates. The joke is I have run the car six years, been through three controls and the error has not been noticed, but, in the end, it has been left to me to find out the mistake. H.C.B.

The Fire Risk.

Hot Exhaust Pipes.

The point raised by "Focus" in the issue of *The Light Car and Cyclecar* dated December 31st on the all-too-frequent association of fire and collision deserves serious consideration. Although I have had no experience (touch wood!) of car fires, I have had more than sufficient of aeroplane fires. This experience has caused me to form a very strong opinion that fire is frequently caused by petrol from a broken pipe coming in contact with a hot exhaust pipe. On an engine running for any length of time on full load or thereabouts the exhaust pipe is hot enough to ignite petrol. On some light cars the petrol pipe and the exhaust pipe are close neighbours, and it might be worth while considering the shielding of the one from the other. In one case, however, in which I was quite certain of the origin of the fire, the initial cause was the back-firing of the engine into a flooded carburetter.

A crash does not always put an engine out of action immediately. In one aeroplane crash of which I was a very close spectator the machine descended too steeply and struck the ground with some force, breaking off both blades of the propeller. The engine, however, was undamaged, and, relieved of the load of the propeller, raced violently until someone climbed over the wreckage and earthed the magneto. Fortunately, no fire resulted from this crash, but the conditions were "asking for it."

The suggestion that fire may originate by a fuse igniting the gases given off by the accumulator is not an impossible explanation, but these gases are only evolved in any quantity when the accumulator is being overcharged, which, in most cars, is not a very frequent occurrence. In any case the blazing aeroplanes with which I have had experience did not carry accumulators. LATE CAPTAIN, R.A.F.

CONDENSED CORRESPONDENCE.

Messrs. H. R. Godfrey Motors, Vitesse Works, Manor Road, Richmond, London, S.W., have received a letter from a Mr. A. W. K. Beche inquiring about a G.N. chassis. Unfortunately, Mr. Beche omitted to give his address, and the concern will, therefore, be glad to hear from him again.

INFORMATION WANTED.

ERIC-CAMPBELL.—Any reader who is willing to lend or sell an instruction book for the 1922 10.9 h.p. sports model is asked to communicate with Clement M. Leslie, 22, Meadowside, Dundee.

COVENTRY-PREMIER.—The loan or opportunity to buy an instruction book and spare parts list dealing with the 1922 8 h.p. four-wheeled model would be appreciated.—Harry Worth, 16, Greenside, Pudsey, Leeds.

FOUND.

In Searle Road, Wembley, a wheel-brace suitable for a Clyno or Morris car. The owner is asked to write, giving a description of the tool, to N. A. Lovelace, 33, Searle Road, Wembley, Middlesex.

CLUB ITEMS AND SPORTING EVENTS.

WOODFORD AND D. M.C.C.

The annual general meeting of the Woodford and District M.C.C. will be held at the George Hotel, South Woodford, on January 17th, at 8 p.m. Points for discussion should reach the hon. secretary, Mr. L. J. Hugo, "Belvedere," Montalt Road, Woodford Green, three days beforehand.

TO CLUB SECRETARIES.

Reports and announcements intended for inclusion in next Friday's issue of "The Light Car and Cyclecar" must reach us by the first post on Monday morning.

MORGAN CLUB.

The annual general meeting of the Morgan Club will be held at the Service Luncheon Club, Tichbourne Court, High Holborn, London, W.C., on Friday, January 21st, at 8 p.m. In response to numerous requests, a whist drive has been arranged to take place at Ye Mecca Cafe, 140, Cheapside, E.C., on Wednesday, February 9th. Many handsome prizes are to be won and there will be time for music and dancing; a very enjoyable evening is therefore anticipated. All are welcome, and the tickets, which are 3s. 6d. each, and include refreshments, may be obtained from the hon. secretary, Mr. W. E. A. Norman, 422, Upper Richmond Road, Putney, S.W.15, or from any of the leading London Morgan agents.

CARDIFF-LEICESTER-CARDIFF TRIAL.

The Cardiff M.C. and C.C. points out that women drivers are not barred in the Cardiff-Leicester-Cardiff trial (to be held on January 28th and 29th) and they may enter in any of the car classes which are closed for the members of the East South Wales Centre of the A.C.U. The total entry fee for these classes is £1 17s. 6d., and this includes the 7s. 6d. subscription to the Cardiff club. Entrants of four-wheeled cars must be enrolled as members not later than 21 days prior to the date of the trial.

A prospectus and entry form may be obtained on application to Mr. M. K. Roberts, 31, Longspears Avenue, Cardiff, who will also undertake to arrange for hotel accommodation if desired.

FORTHCOMING EVENTS.

January 9.

Wood Green and D. M.C. All-Ladies' Trial.

January 13.

Woodford and D. M.C. Annual Dinner and Dance.

January 14.

Essex M.C. Annual Dinner and Dance.

Sutton Coldfield and N. Birmingham A.C. Annual Dinner and Dance.

January 15.

Catford M.C. Annual Dinner.

January 16.

City of London M.A. London-Stratford-London Trial.

Wood Green and D. M.C. Social Run to Reading.

January 17.

Woodford M.C.C. Annual General Meeting.

January 21.

J.C.C. Yorks Centre. Annual Dinner and Dance at Leeds.

Belsize-Bradshaw L.C.C. Annual General Meeting.

Morgan M.C. Annual General Meeting.

January 23.

Wood Green and D. M.C. Social Run to Leighton Buzzard.

January 26.

J.C.C. Annual General Meeting.

January 28-29.

Cardiff M.C. and C.C. Cardiff-Leicester-Cardiff 24-Hour Trial.

Combined M.C.s. Charity Dance at Alexandra Palace.

January 29.

Woking and D. M.C. and C.C. Winter Trial Starts.

February 1.

J.C.C. Yorks Centre. Annual General Meeting.

February 19.

J.C.C. Yorks Centre. Hatted and Masked Event.

ALL-LADIES TRIAL.

A good number of entries has been received for the Wood Green and D. M.C.'s All-Ladies Reliability Trial which starts from the Alexandra Palace, London, at 10.30 a.m. on January 9th. The competitors will take a fairly direct route so far as Tring, and the first real test will be on Waterworks Hill, Whyteleafe Hill and the descent of Kop Hill following in quick succession. The lunch stop will be at Princes Risborough, and in the afternoon the competitors will return up Kop Hill and back to the Alexandra Palace by a very similar route to that followed on the outward journey. Mrs. Le Vack will start the competitors.

"LONDON-STRATFORD" ENTRIES.

January 9th is the last day for the receipt of entries at ordinary fees for the City of London Motoring Association's forthcoming London-Stratford Trial. Entries at double fees will be accepted up to January 13th, and entry forms may be obtained from Mr. N. E. Hollis, 14, Blenheim Gardens, Cricklewood, N.W.3.

The club will hold a reunion run to the "Rose and Crown" Inn, Tring, on February 6th. Any interested motorists are invited to attend. The second dance of the season will be held at the Stationers' Hall, London, on February 26th. Tickets (3s.) may be obtained from Mr. S. C. Attwood, Swan Chambers, Copthall Avenue, E.C.2. Motorists wishing to join the club should communicate with the hon. secretary, Mr. T. C. Coombs, 27, Allen's Buildings, Leonard Street, E.C.2. The annual subscription is 10s. 6d.

"LONDON-GLOUCESTER" AWARDS.

In the recent London-Gloucester-London trial the best performance by a car team was put up by the North-West London M.C. team "C," composed of H. Jefferis (Frazer-Nash), R. M. Hughes (Austin Seven) and C. J. Burton (Austin Seven); they received silver spoons. Other light car awards are as follow:—Silver cups: H. F. S. Morgan (Morgan) and H. J. Lovatt (Jowett); silver spoons: W. A. Carr (Morgan), M. W. Stokes (Morgan), G. C. Harris (Morgan), H. Jefferis (Frazer-Nash), R. M. Hughes (Austin), Mrs. Dykes (Alvis), R. Dalton (Austin) and H. J. R. Kent (Austin); bronze medals: H. E. K. Sawtell (Morgan), C. J. Burton (Austin), Miss Roper (A.C.), V. H. Tuson (Amilcar), K. G. R. Bagshawe (Lea-Francis) and E. J. Kehoe (Austin); certificates: R. T. Horton (Morgan), F. A. Boggis (Morgan), A. G. Gripper (Alvis), J. C. Cotton (Jowett), M. W. B. May (Talbot) and V. L. Brooks (Lagonda).

Only 17 of the car competitors failed to qualify for an award.

Ideas for Owners

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.

Battery Charging.

Owner-drivers who do a fair amount of daylight driving may save some of the cost of recharging wireless and other small accumulators by extending the leads from the car battery to a set of cells of the same voltage and charge rate, which may be placed in any convenient position in the car. Care must be taken to connect the cells in series with the positive dynamo lead attached to the positive terminal of the cells. The car battery must be disconnected (or a change-over switch fitted), otherwise one accumulator will exhaust itself into the other, when the engine is idling below charging speed. It is not advisable to charge batteries in this manner when the car is stationary in the garage, for the engine may overheat.

Illustrating how oil may be filtered through an old felt hat.

An Effective Oil Filter.

The oil which is drained from the sump from time to time can be used for a variety of purposes if it is first filtered carefully. A cheap but very effective filter can be made by inverting a discarded soft felt hat over a suitable drum. The dirty oil is poured into the hat and drips slowly into the drum, being well cleaned in the process. Filtration is slow, but all the more effective; it takes about two days for a pint of oil to find its way through thick felt. It is important, of course, to see that there are no vent holes in the hat through which the oil could flow without being filtered.

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Curing Headlamp Rattle.

It sometimes happens that the rims of headlamps work loose and cause annoying rattles, apart from the likelihood of the glasses breaking. A simple cure is to obtain a length of cycle acetylene lamp tubing and to lay it round the inside of the rim next to the glass, securing it with a touch of glue. When the rim is pushed on to the body of the lamp the tubing acts as a buffer and stops all possibility of looseness.

A Cooling Hint.

A reader who was troubled with his 11.4 h.p. Standard overheating made a successful cure by cutting away the drilled portion of the exhaust pipe which projected about 6 ins. into the expansion chamber at the engine end. The holes were choked with carbon and considerable back pressure resulted. The effect of cutting away the pipe was a much cooler engine, with no appreciable increase in exhaust noise.

Entering the Garage.

Owners sometimes like to keep their cars in one particular position in the garage, usually to allow room on each side for other articles, such as a bench, oil drums, bicycles and so on. In order to do this, two white lines should be painted on the wall at the end of the garage. One should be vertical and in a direct line with the driver and some convenient part of the front of the car, such as the off-side headlamp, when the car is standing in the required position. The second line should be horizontal and should be level with the top of the radiator, as viewed from the driver's seat. On re-entering the garage it is necessary only to drive so that these "bearings" are re-assumed.

Jacking-up Simplified.

Owners of jacks which are operated by a square-section bar, fitted with T-handle, sometimes find that the bar is too short for convenient working and barked knuckles are the result. The handle socket should be cut off and the bar rounded for an inch at one end and a thread cut on it to take a nut similar to those holding the wheels to the hubs. If this nut is screwed and pinned or riveted to the bar it is a simple matter to operate the jack with the wheelbrace.

Brass wire laid in one flute of a tap will cause it to cut a larger thread than when used normally.

Easing Tight Threads.

It is necessary sometimes to open out the threaded hole in, say, a nut to enable it to be screwed on to an oversize bolt. This can easily be done by placing a piece of brass wire in one of the tap flutes and then using the tap in the ordinary way, as shown in the accompanying sketch. The wire will have the effect of increasing the diameter of the tap, thus causing it to cut a larger hole, but, of course, the pitch of the thread is unaffected. The cutting diameter of a reamer may also be increased by using brass wire in this manner. It is important not to use steel or iron wire, as this is too hard and would spoil the job. An oversize thread on a rod or bolt must be eased by filing down the tops of the threads and rescrewing with the dies, the process being continued until the correct diameter and thread depth is reached.

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.

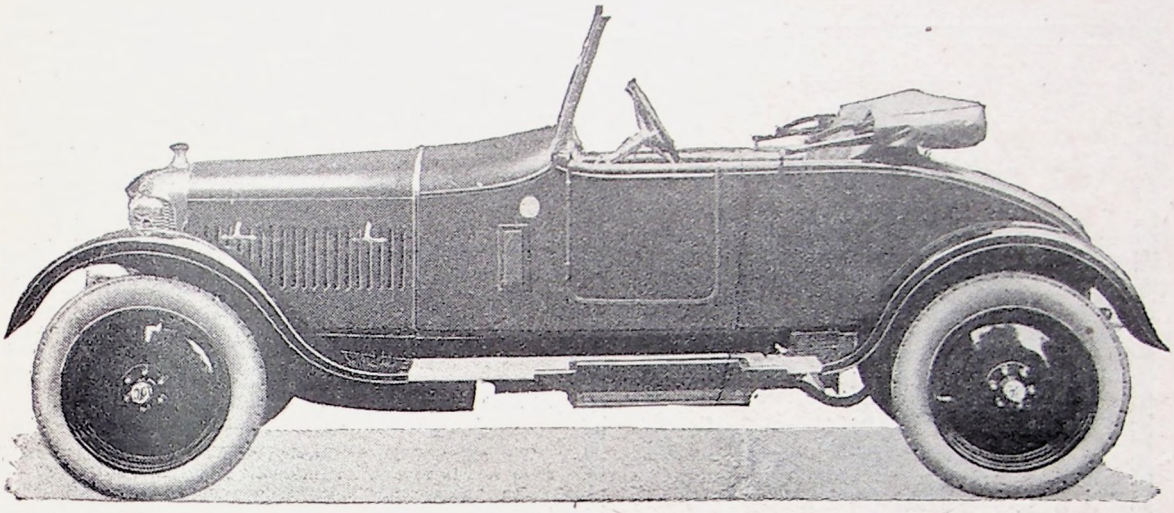
H.M.S. (Stepney).—Set your plug points to the gap recommended by the makers, usually about ½ mm. There is very seldom any advantage in a wide gap.

E.R. (Manchester).—In order to cure the squeaking of your Ariel Ten brakes remove the wheels and insert three or four (not more) drops of engine oil in the holes in the hubs.

S.C. (Wigan).—Your idea was carried out several years ago in the impulse starter. Several small cars were fitted with this easier-starting device, but it is now considered entirely unnecessary.

T.T. (Brighton).—Early 8 h.p. Rovers had only one oil sight feed and drip control—to the near-side cylinder. You could, no doubt, equip the other cylinder in a similar manner if you consider it essential.

H.G.T. (Newcastle).—The gearbox of your 1923 Eric Campbell was designed for grease—not oil. A thick oil can be used, but leakage may take place through the main and clutch shaft bearings.



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Try an A-C Car of any price. See identical cars being built in our works. We have no secrets that we guard from those interested. Make a really searching road trial of the car. The harder the test you impose, the better we shall be pleased.

Examine and test A-C Cars by every possible criterion, remember that they cost less per mile to run than any other car of equal road-performance and carrying-capacity, and—finally—remember the A-C three-year guarantee!

4-CYLINDER, 12-24 and 12-40 h.p. .. from £285

Payments over 3 years if desired.

AC CARS, Limited.

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Full Range of A-C Cars at

A-C LONDON CONCESSIONAIRES, 55-56, Pall Mall, London, S.W.1.

(Opposite Marlborough House.)

Dunlop Cord Tyres are best, and we fit them on all A-C Cars

WE CAN SUPPLY PERFECT USED CARS, UNDER GUARANTEE.

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.

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AROUND THE TRADE.

Fort Dunlop advises us that 85 per cent. of the three-wheeled cyclecars taking part in the London-Exeter run were fitted with Dunlop tyres.

The December number of *The Accessory*, a monthly journal issued by Brown Bros., Ltd., contains, as usual, a number of interesting descriptions of new and original "gadgets."

We have received a copy of a striking window display poster advertising the success of the Marelli magneto fitted to the 800 h.p. Fiat-engined mono-seaplane which recently won the International Schneider Cup race.

The story of the production of National Benzole mixture from coal is told in an interesting and attractive brochure which has recently been issued by the National Benzole Co., Ltd., Wellington House, Buckingham Gate, London, S.W.1.

Price's Patent Candle Co., Ltd., Battersea, S.W.11, point out that heating and liquefying their greases does not affect the lubricating properties, consequently grease guns and cups can easily be filled by melting the grease and pouring it into the receptacles.

The Christmas number of "Our Magazine," the bright staff journal of The Motor Union Insurance Co., Ltd., United British Insurance Co., Ltd., and Federated British Insurance Co., Ltd., is full of good things and makes extremely interesting reading.

The increased demand for the straight-cable front-wheel brakes manufactured by Hydraulic Cable Brakes, Ltd., has enabled this concern to make a considerable reduction in the retail prices. The cost of a set suitable for Jowett cars (H-section axle) is now £7 10s.

The Wellins-Higgins Co., Ltd., Morley House, 314-322, Regent Street, London, W.1, the makers of Fabrikoid leather-cloth, inform us that they have opened an additional store at 18, Ludgate Hill, Birmingham. Their London store at 38, Eastcastle Street is being retained.

Mr. A. W. Dougill, who, until recently, was assistant works manager to the Wolseley Motor Co., Ltd., with which concern he had been associated for the past 15 years, has now joined the staff of Imperia Motors, Ltd., and is in charge of the construction of Imperia and G.W.K. cars.

The Goodyear Tyre and Rubber Co. (Great Britain), Ltd., announce a further reduction in the price of Goodyear tyres. For example, the 27-in. by 4.40-in. balloon cover now costs only £2 8s., a saving of 12s., and the new price of the 30-in. by 3½-in. high-pressure cord cover is £2 10s. 3d., as against £3 3s., a saving of 12s. 9d.

Barimar, Ltd., of 14-18, Lamb's Conduit Street, London, W.C.1, advise us that their high-speed repair squad is now at work at their London factories and branch depots, dealing rapidly with fractured cylinders and radiators caused by the frost, so that owners may have their cars in use again within 24 hours. Every frost-fractured repair carried out by Barimar is guaranteed.

Romac Motor Accessories, Ltd., Romac Works, The Hyde, Edgware Road, London, N.W.9, advise us that they have appointed Mr. Jordan, 15, Hillside Gardens, Hyndland, Glasgow, to represent them in Northern Scotland, and Mr. A. MacKay, 15, Gymnasium Hall, Fettes Row, Edinburgh, to look after their interests in Southern Scotland. Mr. Birket E. Foster, late of Accessories (Edinburgh), Ltd., has taken over the ground south of the Thames.

REMY HORNS

CLEAR THE WAY

HORNS illustrated aid to safe motoring. They are dependable in any emergency. On open country roads, in crowded city traffic, the slightest touch suffices to send forth a vibrant penetrating warning note (not a startling or unnerving blast) peremptory yet pleasing, which may be heard far ahead above the din of the city noises.

REMY HORNS, apart from mere mechanical efficiency, are handsome high-grade products, and look equally "at home" on the highest or lowest priced car or motorcycle. They can be easily fitted in a few moments, and will give years of service with no involved mechanism to go wrong.

REMY HORNS are obtainable in five types as illustrated below, so that there is one for your particular purpose. They are obtainable in the usual way through any dealer in high-class motoring accessories or may be ordered direct, see below.

Model 25, 75/- Post 1/-.

Model 18, 55/- Post 9d.

Model 15, 30/- Post 9d.

Model 8C, 16/- Post 9d.

When ordering Electric Models State 6 or 12 volts.

HAND OPERATED Model 3V. 19/6 Post 9d.

The CARDINE SPRING SUSPENSION MODERATOR

ENTIRELY BRITISH MADE!

reduces the number of oscillations of the rear leaf springs from about 120 per minute to about 60 per minute, and it does this irrespective of the number of passengers or the condition of the road or the speed. "Whatever the load, whatever the road, whatever the speed—SMOOTH RIDING."

PRICE, complete with fittings for LIGHT CARS £4; MEDIUM CARS £5.

Free Advice and Literature on request

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Fill in, cut out and attach P.O. or Cheque.

POST YOUR ORDER OR ENQUIRY TO-DAY

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Attached please find P.O. or cheque for.....Or enquiry regarding..... (cross out words not required.)

- ☐ Delco-Remy Coil Ignition Magneto Replacement Unit for Morris and other cars.—"Better Spark—Instant Start." Grounded, £4 10 0. Insulated £5 5 0. Postage 1/6
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- ☐ Syphon Thermostat gives warm engine in 60 seconds, suitable any pump-cooled engine, 22/6 Postage 9d. Give pipe diameter.
- ☐ Remy Horns. Electric: Model 25, 75/-, postage 1/-. Model 18, 55/-, postage 1/-. Model 15, 30/- Model 8C, 16/-, postage 9d. Model 3V (hand operated) 19/6, postage 9d. Special Prices Irish Free State.

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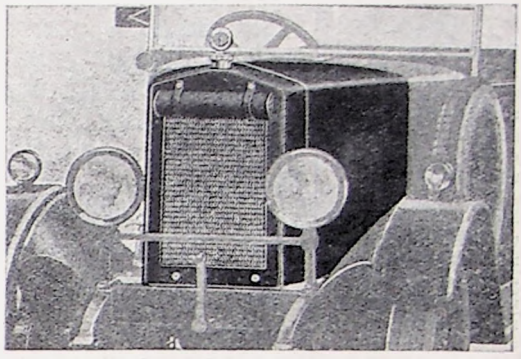


"DUCO" Combined RADIATOR and BONNET MUFF

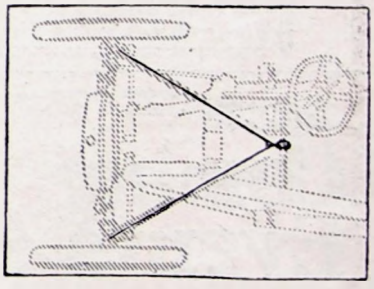
provides just sufficient warmth to keep the engine responsive. Made from good quality leather cloth material, lined thick, warm felt, these muffs look well and wear well. All types of cars can be fitted, and roll-up front curtain permits of heat regulation.

No. R2/23. Radiator and Bonnet Muff combined, from 42/- each.
No. R2/24. Radiator Muff only, from 13/6 each.

List of stock patterns and supply of measurement forms gladly forwarded on application.

"BODELO" BRAKE ATTACHMENT FOR AUSTIN SEVEN.

Leave your hands free for steering and signalling by fitting a "Bodelo." This provides four wheel brake control from existing foot pedal, yet still leaves the front brakes to be used by means of hand lever only if necessary. Can be easily and quickly fitted without interference with car mechanism.
No. B27/70. Price 30/-



"DUCO" RUBBER STEP MAT.

MODEL 75.—Good quality bristle pattern mat fitted to strong, neat aluminium frame, with valance protector and scraper. No. M12/75. Size 13 x 9 in., each 11/6
MODEL 76.—No. M12/76. Size 17½ x 8 in., each 11/6

BULB HORN for AUSTIN SEVEN

A substantially made and neatly finished horn for through the dash fixing. Provides a pleasant, clear sounding note, and is fitted with dustproof gauze. No. H4/141 Each 12/6

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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.

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SATISFACTION

To give SATISFACTION is our great ENDEAVOUR ! ! Further than this it has become our great ACHIEVEMENT ! ! In this alone lies the secret of our SUCCESS ! ! Not only here in London and throughout the British Isles does our SUCCESS lie, but it extends to the other side of the World.

The following is an extract from a letter received by KIRK & CO. from one of their clients in COLOMBO :—

" Dear Sirs—Last December I purchased a Morris Chummy Model from you, and I want to tell you what an excellent car it has proved. I believe you have treated me as well as though I was in your showrooms, instead of 7,000 miles away. I shall always recommend you to my friends," etc. (Original copy is in our possession.)

PURCHASE YOUR CAR FROM KIRK & CO. AND HAVE SATISFACTION.

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