

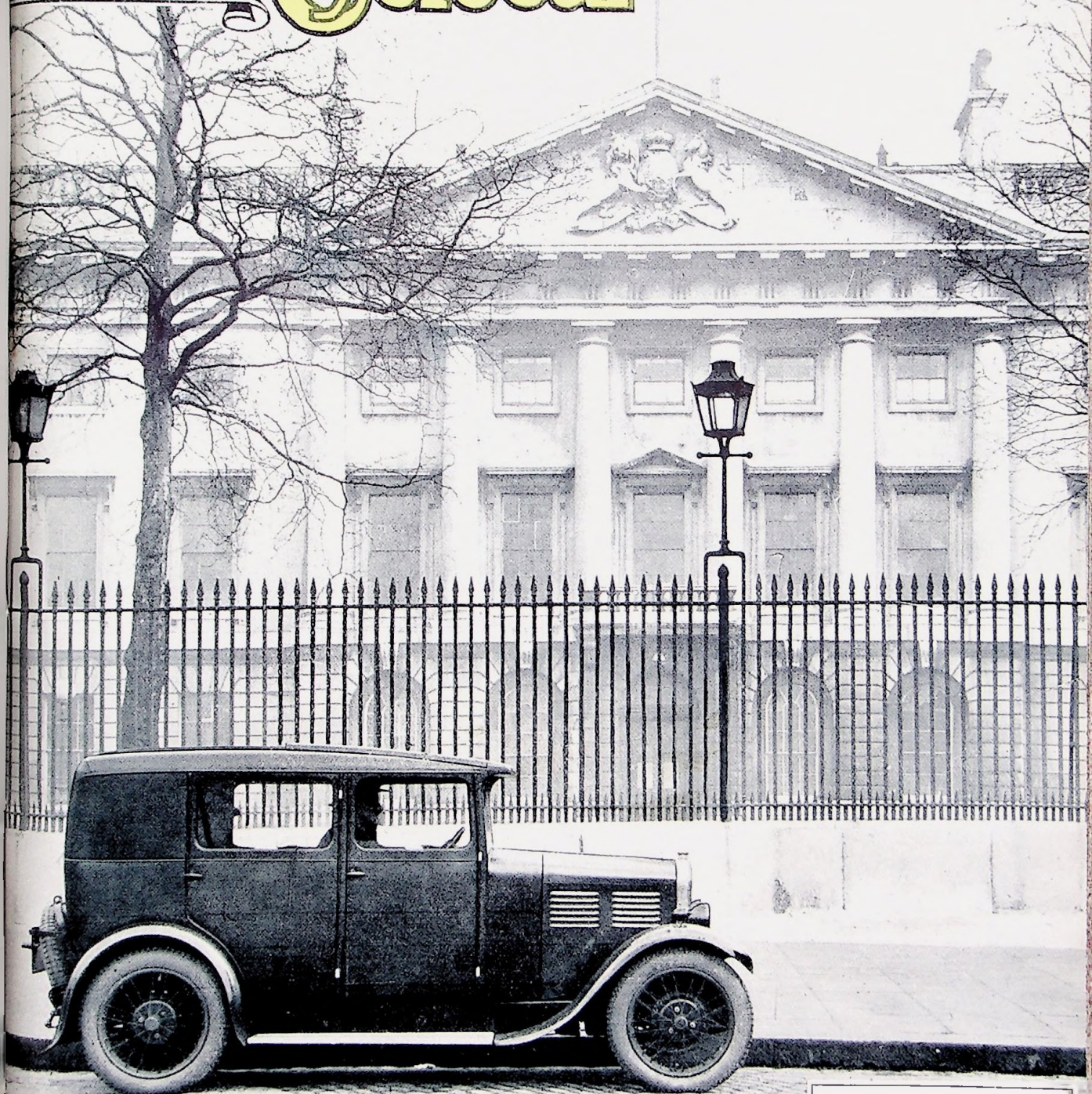
The Light Car and Cyclecar

Founded 1912

The only Small Car Journal

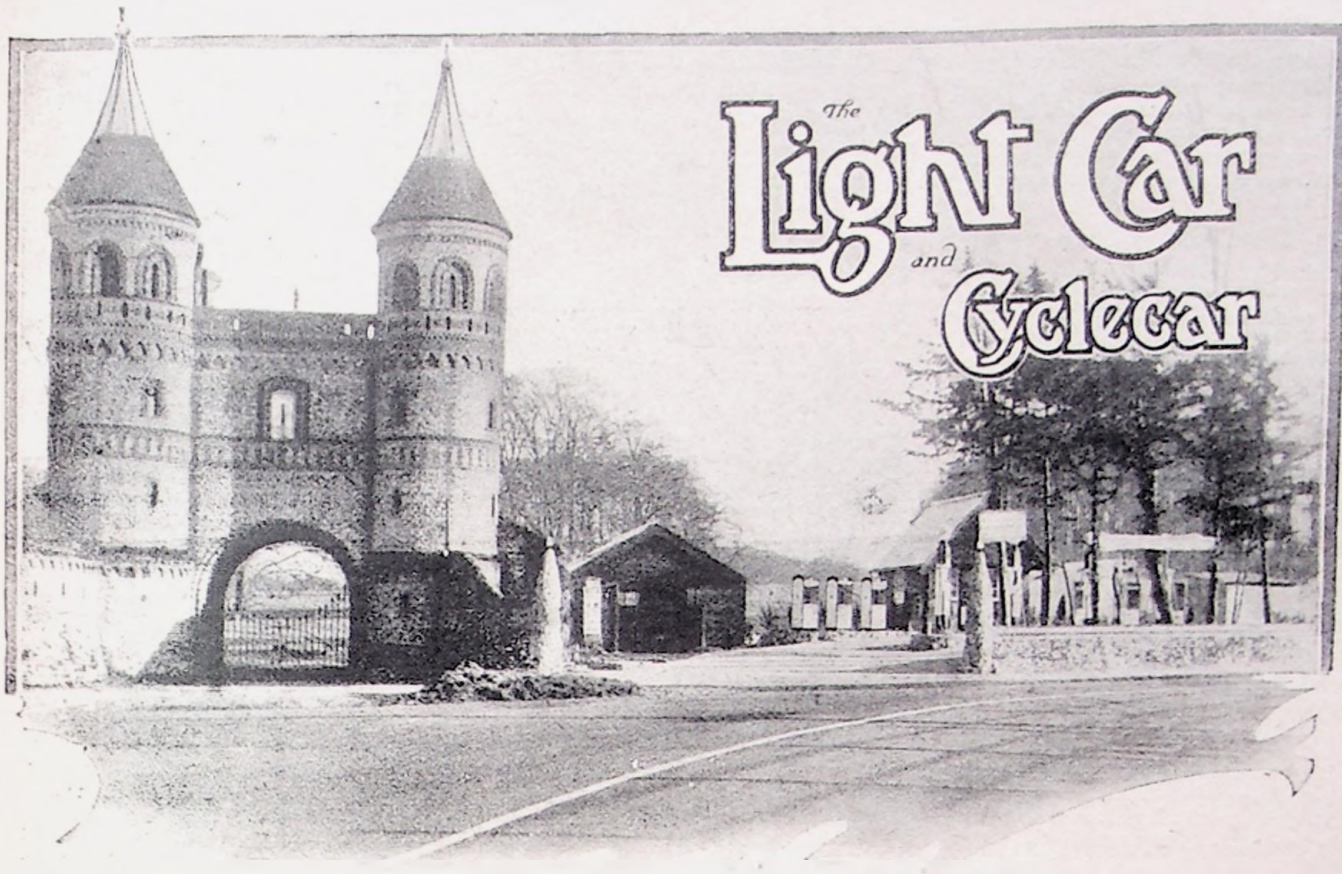
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Vol. XXXIII. No. 839
Friday, Jan. 4, 1929
*Registered at the GPO
as a Newspaper*



THE NATION'S MONEY FACTORY.

All of us are interested in making money; at the Royal Mint, Tower Hill, London, this is done literally, all the coin of the Realm being mass-produced by special machinery



AT HORSLEY TOWERS. — A distinctive service station has been erected adjacent to the entrance lodge of Horsley Towers, the former residence of the Earl of Lovelace, on the Leatherhead-Guildford road. It has been built purposely to accord with the architecture of the gate of the lodge.

NOTES, NEWS & GOSSIP *of the* WEEK

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LIGHTING-UP TIMES.

Saturday, January 5, 1929.

London ..	4.37	Edinburgh ..	4.25
Newcastle ..	4.24	Liverpool ..	4.39
Birmingham	4.39	Bristol ..	4.37

Moon.—First Quarter, January 11th.

The New York Show.

At the New York Motor Show—which opens to-morrow and closes on January 12th—one or two English manufacturers, including the Austin Motor Co., Ltd., will be represented. Americans, it is generally agreed, have "large ideas" where cars are concerned, and it will be interesting, therefore, to see how they regard the Austin Seven.

Next Week.—An Enlarged Free Wheel Number.

Just as the introduction of the free wheel created quite a furore in the cycle world many years ago, so its adoption for cars is arousing the keenest interest in all quarters, and particular significance, therefore, attaches to our enlarged free wheel number which will be published next week and which will review the whole position in detail. It might be thought that such a subject could be dismissed in a few words. We hope that next week's issue will dispel this illusion and will serve to impress our readers with the magnitude of the vista which free wheeling opens up. The contents will include detailed descriptions of the better-known free wheels, a series of short articles on the advantages of free wheeling, a description of tests carried out in connection with free wheels by the R.A.C., a very interesting article giving our own impressions of free wheels in actual use, and so on. The price of next week's issue will be the same as usual, but readers should certainly make a point of ordering in advance in order to avoid disappointment.

The Power of the Microphone.

We have received a very interesting letter from Col. J. A. A. Picard, of the Safety First Association, concerning the suggestion contained in our editorial article entitled "The Power of the Microphone." Col. Picard says that the Association is endeavouring to persuade the B.B.C. to take active steps on the lines we indicated.

This Week.

There must be large numbers of prospective motorists who are anxious to find out all there is to know about the Morris Minor. They represent only one section of a motoring public which is keenly interested in this new production, and we feel sure that the authoritative description of the car which appears in this issue will make a wide appeal. Not only does the article describe the car from stem to stern, but it gives readers an unbiased view of its performance on the road. Our main sporting report concerns the London-Exeter, and although the story of the run as a whole is past history, an analysis of the trial from the light car owner's point of view merits a comprehensive report in this issue.

Care on the North Road.

Widening operations on the North Road between Stevenage and Baldock are progressing somewhat slowly, and great care is necessary when approaching those sections which are now being dealt with.

Essex Club's Dinner.

What will come to be known as the "Farewell Dinner" of the Essex Motor Club takes place next Friday. As we have already announced, the activities of the club have ceased, and this dinner will be the final event on its calendar. It is not yet too late to apply for tickets.

Ingenious Window Display.

Gosford Street, Coventry, drew hundreds of people on the eve of the holiday, the attraction being the very ingenious display of Singer cars in four windows of the company's showrooms. Each tableau was appropriate to the season, whilst one of the four showed the Singer Junior sports model taking one of the bends on Porlock Hill in the recent "hundred ascents" trial.

Singer Porlock Test.

Interesting data is given by the Royal Automobile Club in the official report just issued of the trial of a Singer Junior sports model, the object

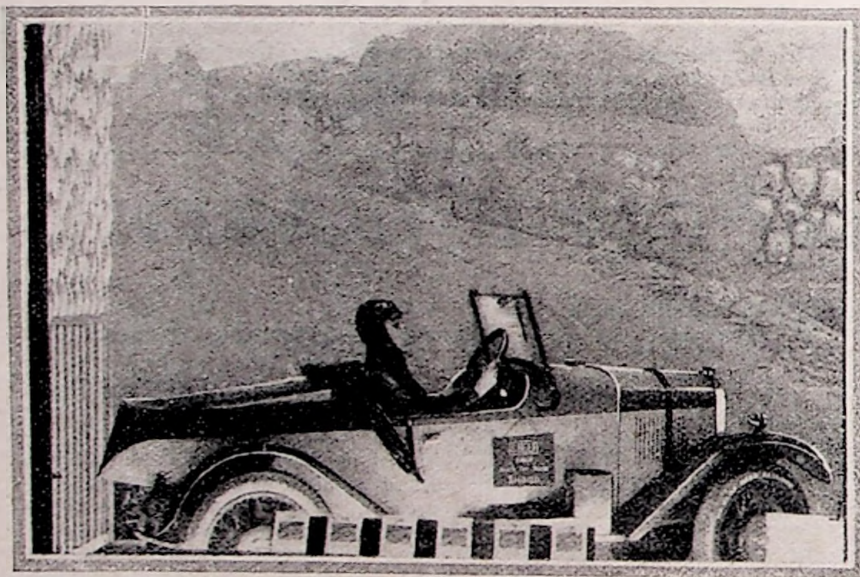
UNRECORDED HISTORICAL INCIDENTS.



Mr. and Mrs. Cheops turn out to see the "Xeter."

More Laurels for Fiats.

Several first places were obtained by Fiats in the "zig-zag" hill-climb organized by the Royal Automobile Club of Victoria at Melbourne recently.



PORLOCK IN COVENTRY! — An example of really clever window display in a Coventry showroom. (See paragraph above.)

of which was to demonstrate the ability of the car to ascend and descend Porlock Hill, Somerset, 100 times. The hill was ascended for approximately two-thirds of the distance on first speed and one-third on second speed. The engine was kept running continuously except for accidental stops on 26 occasions, when it was immediately restarted. Ordinary stops were made after each descent, the longest being for five minutes, during which replenishments and so forth were made. After the 49th descent the offside front hub was greased (1 min. 40 secs.), whilst on the 50th ascent the engine stopped owing to a choked jet. This was cleared in 1 min. 50 secs., and the ascent commenced again. It is very interesting to note that the radiator was replenished on only nine occasions.

A10

M.E.B. Lowers Record.

The following records—all in the 750 c.c. three-wheeler class—have been established by an M.E.B. at Monthlery: —On December 23rd (driver, Mrs. G. M. Stewart): 50 kilometres at 132.860 k.p.h. = 82.55 m.p.h., 50 miles at 133.871 k.p.h. = 83.18 m.p.h., 100 kilometres at 133.936 k.p.h. = 83.22 m.p.h., 1 hour at 134.050 k.p.h. = 83.29 m.p.h. On December 25th (drivers, Hawkes and Mrs. Stewart). The following are new records for both the 750 c.c. and the 1,100 c.c. class: 4 hours at 109.336 k.p.h. = 67.93 m.p.h., 500 kilos at 109.475 k.p.h. = 68.02 m.p.h., 5 hours at 108.279 k.p.h. = 67.28 m.p.h., 6 hours at 109.246 k.p.h. = 67.88 m.p.h., 7 hours at 99.017 k.p.h. = 61.52 m.p.h.

NEW EDITION OF "THE MOTOR ELECTRICAL MANUAL."

A Book for Every Motorist's Bookshelf, which sells at 2s. 6d.

A NEW edition—the fourth—of "The Motor Electrical Manual" revised and re-illustrated has just been introduced. It has long been recognized as the most popular handbook dealing with the many applications of electricity to the modern car. It is written in simple, non-technical language, and it is not assumed that the reader has any previous knowledge of the subject, as sufficient introductory matter on electrical principles and theory is given to enable the succeeding chapters to be clearly followed. This new edition has been thoroughly revised and brought up-to-date, and many of the earlier illustrations have been replaced by new line diagrams, special sectional drawings and photographs.

The book comprises sixteen chapters and 168 pages. The introductory chapters give a general outline of car electrical equipment, fundamental electrical principles and some elementary theory, then follow well-illustrated chapters on ignition systems, magnetos of all types, coil ignition, dual ignition and sparking plugs. The treatment of lighting and starting equipment comprises detailed descriptions of dynamos, batteries, cut-outs, starters, dynamotors, switchboxes, wiring, lamps, instruments. Full information is given as to general maintenance of electrical equipment, from which any owner-driver can learn how to ensure the most lasting and efficient results.

There are useful sections on the various electrical accessories, such as the windscreen wiper, electric horn, and so on, and descriptions of up-to-date labour-saving electrical devices for garages. The concluding pages contain a glossary giving easily followed definitions of all electrical terms used in connection with electrical equipment, and there are some useful tables, facts and figures relating to the subject.

"The Motor Electrical Manual," fourth edition, is published by Temple Press Ltd., 5-15, Rosebery Avenue, London, E.C.1, at 2s. 6d. net and 2s. 9d. post free. It can be obtained from the address given or any large bookseller or newsagent.



WHAT SERVICE MEANS TO-DAY. — Holland Park Hall

New Rover Showrooms.

Auto Distributors, Ltd., have now acquired up-to-date and conveniently situated showrooms at 99, Baker Street, London, W.1. These were opened on the first day of the New Year, and will be devoted exclusively to the distribution of Rover cars.

Patents Booming.

It is estimated that about 38,500 patent applications were filed at the Patent Office during last year. One firm of patent agents, Messrs. Hughes and Young, estimates that the capital invested in inventions was over 35 million pounds sterling.

1929 Exhibitions.

The following dates have been approved by the S.M.M. and T. for motor and other exhibitions for the



Paris traffic cops. Note the all-powerful badge on the driver's left arm.

1929 season:—International Aero Exhibition, Olympia, July 16th to 27th; Motor Show, Olympia, October 17th to 26th; Commercial Motor Transport Exhibition, November 7th to 16th; Shipping and Engineering Exhibition, Olympia, September 12th to 28th; Scottish Motor Show, November.

The Society will not give its approval to the British Industries Fair in so far as the exhibition of motoring goods by bond signers is concerned, but the British manufacturers' section will conduct at the Birmingham centre of the Fair an Information Bureau in the interests of these members.

Business as Usual.

Despite an extensive fire at the Hill Street (Birmingham) branch of the Colmore Depot, which occurred on Tuesday, December 18th, business is being carried on as usual, thanks to the extensive organization of the firm concerned.

Blocked by Snow.

Folk who looked forward to a "white" Christmas again this year were somewhat disappointed. In certain parts of the country, however, heavy snow fell just previous to the holiday, the Braemar-Blairgowrie road, for example, being completely blocked by snow at Cairnwell.

Rallies Banned.

The S.M.M. and T. states that although the Society gave its approval to the two rallies and Concours d'Elegance held in 1928, it has been decided that no event of this character shall be approved for trade support during the coming season. The Council will, however, give its sanction, as usual, to certain trials and competitions, and up to the present the following have been approved:—All races and observed performances at Brooklands; the Ulster Tourist Trophy Race, August 17th, and the Shelsley Walsh open hill-climb, September 14th. Decisions affecting other events will be given in due course.

Death of Mr. G. F. L. Sharp.

WE have to record with deep regret the passing of Mr. George F. Laundy Sharp, who had been associated for 32 years with various journals published by Temple Press Ltd. He had been connected with the Editorial staffs of *Cycling*, *Motor Cycling*, *The Motor* and *The Motor Boat*, and at the time of his death was Editor of *The Commercial Motor*. He was seized with illness quite suddenly while carrying out his duties on Tuesday afternoon, December 18th, and passed away through heart failure, following pneumonia, on Sunday, December 23rd. We extend our sincere sympathy to his widow and family.

The Monte Carlo Rally.

For the Monte Carlo Rally, which takes place from January 23rd to 27th, over 70 entries have been received, of which 17 are British.

New President of Benevolent Fund.

Mr. W. E. Bullock, the managing director of Singer and Co., Ltd., has



Mr. W. E. Bullock.

been elected president of the Benevolent Fund for 1929 in succession to Mr. W. R. Morris.

Vagaries of the Weather.

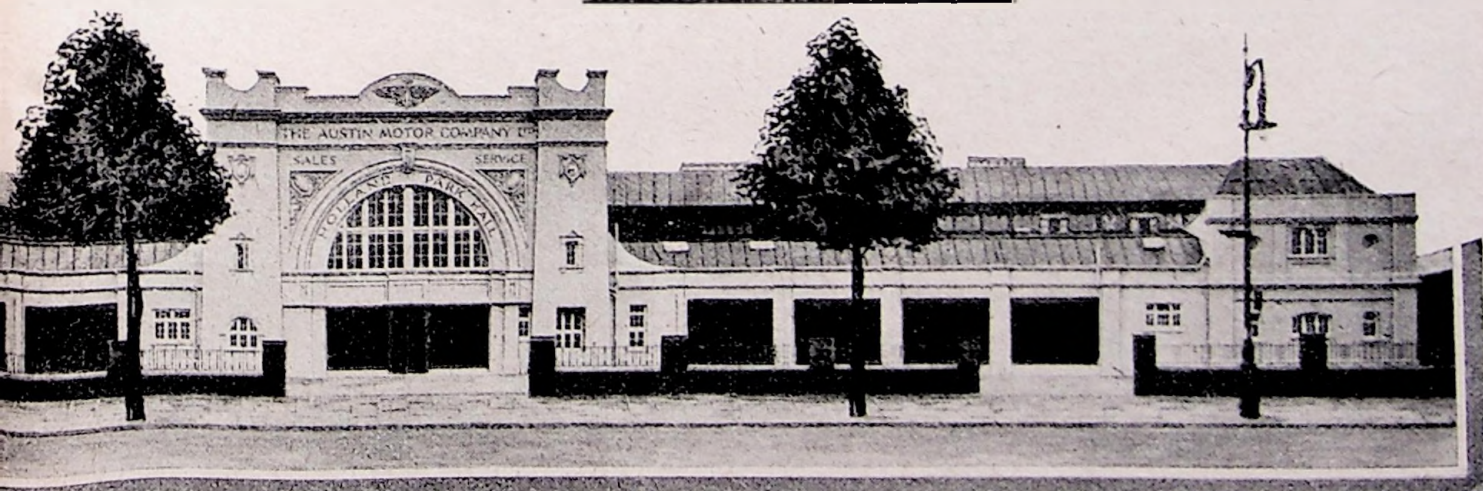
During a run down the North Road on Sunday last a member of our staff encountered heavy snow, sleet, comparatively thick fog and then rain—all in a 60-mile run.

The Period of Grace.

Motorists who intend to renew their car licences for the New Year but who have not already done so, should bear in mind that the period of grace—14 days—will expire on Monday week. If it is not intended to take out a fresh licence, an owner is not permitted to use his car during the period named.

Two-wheel Attachments.

We are informed by Mr. W. D. T. Gairdner, the inventor of the two-wheel attachment for Austin Sevens, which was described in our issue dated December 7th, that the arrangement has been provisionally protected in connection with all cars up to and including 10 h.p. Incidentally, during the course of a further test of the actual vehicle which we illustrated, a load of 13 cwt. was carried.



ed many exhibitions and will also be remembered with affection by roller-skate enthusiasts. It has now been converted into a thoroughly up-to-date London service depot for Austins.

First Official Details of—

THE BRITISH DOUBLE TWELVE-HOUR RACE.

A Very Big Event Organized by the J.C.C. to Take Place in May.

THE Junior Car Club have now issued the supplementary regulations for the British Double Twelve-Hour Race which will be held at Brooklands on May 10th and 11th. Copies of the regulations may be obtained by applying to the Junior Car Club, Empire House, Thurloe Place, Brompton Road, London, S.W.7.

As the title implies, the race will be over a period of 24 hours divided into two sections of 12 hours each. It will be held over a course similar to that which we recently suggested as being ideal for the 200-Mile race; that is to say, cars will travel in an anti-clockwise direction down the finishing straight, under the paddock bridge, then, swinging left through a safety bank at the junction of the straight with the home banking, will carry on down the railway straight under the Byfleet bridge and, coming off the Byfleet banking, enter the finishing straight once again at the fork.

The circuit is, therefore, a practically "straight" one, as we recommended, and it will give spectators in the public and members' enclosures an opportunity of witnessing some really high-speed work at close quarters.

Types of Car Eligible.

The race is open to the type of car generally known as a sports, super-sports or speed model which complies with certain detailed regulations, one of which is that it must be a four-wheeled vehicle.

Another important stipulation is that cars shall not be of a type commonly known as racing cars. To qualify for an award a car has to do two things, namely, run over the two periods of

12 hours and, during each of the four consecutive periods of six hours, cover a minimum distance set by a curve, the basis of any part of the curve applying to a particular car being the swept volume of the engine concerned.

To give some idea of the hourly average speeds which will have to be maintained in the various classes, the following may be quoted: Up to 750 c.c., 45 m.p.h.; up to 1,100 c.c., 49 m.p.h.; up to 1,500 c.c., 52 m.p.h.; whilst at the other end of the scale the 12,000 c.c. cars will have to maintain an hourly mean speed of 60 m.p.h.

Superchargers Handicapped.

Engines fitted with a supercharger will be considered to have 30 per cent. more than their actual cylinder capacity, and they will be classed accordingly.

The winner of the race will be the car with the highest figure of merit, as the result of a calculation obtained by dividing the set minimum into the distance actually covered and thus arriving at a figure of merit which will be worked out to three places of decimals.

This sounds exceedingly complicated, but a formula of this kind is essential in a race where it is not the fastest car that wins, but the one which—according to engine capacity and so on—puts up the best performance. Thus there is just as much possibility of a 750 c.c. car winning the race as there is of a 12,000 c.c. car obtaining the victory.

Incidentally, the public need not concern themselves with the formula just given, for it is anticipated that it will be possible to give the actual leaders of the race, on formula, at

regular intervals, probably as close as one hour.

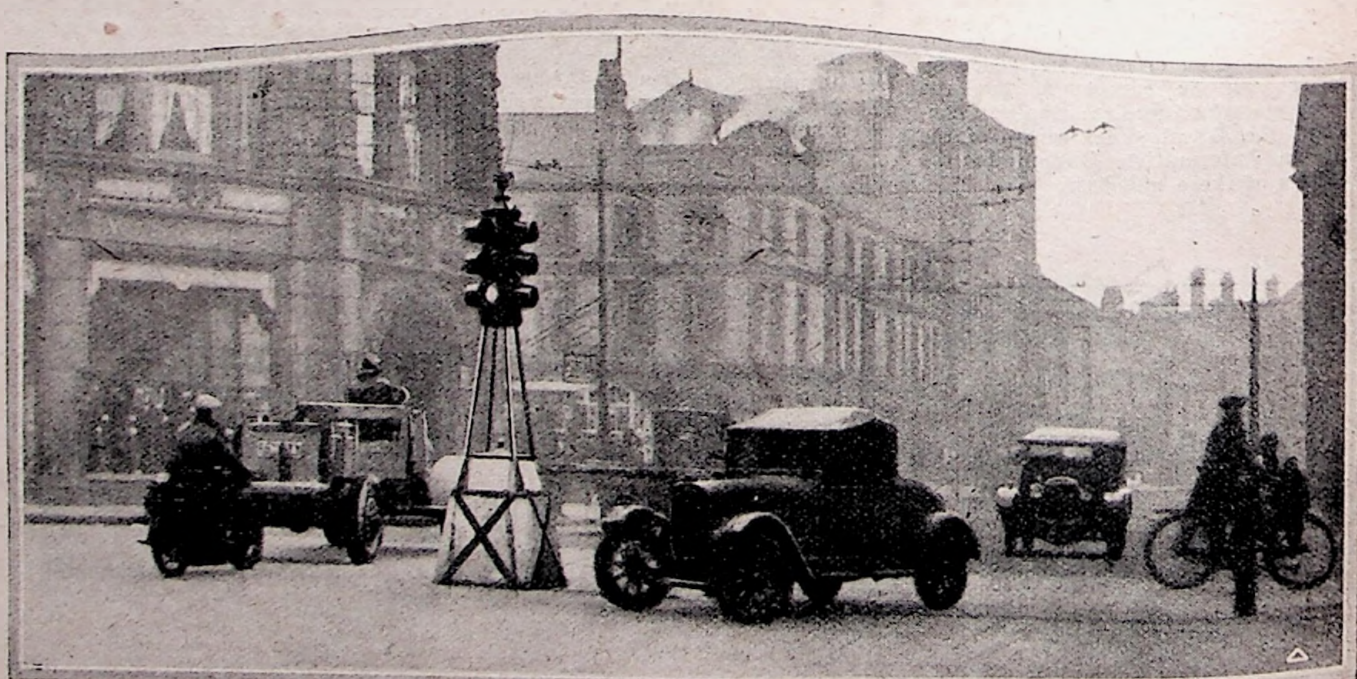
Entries can be lodged with the club prior to mid-day on Tuesday, January 15th, accompanied by a fee of 15 guineas per car, but without actually nominating a make of car, provided that the entry is completed before mid-day on Monday, March 18th. After the last-named date the fee for entry is 30 guineas per car, entries finally closing on Monday, April 8th.

The start of each day's racing will be at 8 a.m., and on the first day the start will be similar to that which characterizes the 24-hour Endurance Race at Le Mans; that is to say, drivers and mechanics will take up their positions opposite their cars and at the starting signal they will sprint across to their vehicles, raise and secure the hoods of open cars and start the engines, using only the starting motor. Closed cars may, of course, be driven off directly the engine starts.

Ten Laps With Hoods Up.

For ten laps the open cars must be driven with their hoods up, then each car must be stopped at its replenishment pit and the hood furled and secured. On the second day the cars will be towed to the starting area, the engines not having previously been run since the end of the first day's race. Drivers and mechanics will again be lined up opposite their cars, and when given the signal may do everything possible to start their engines except by means of towing.

The entrant of the winning car will receive a cash prize of £1,000 presented by the proprietors of the *Daily Telegraph*, and a number of other valuable awards will be made.



TRAFFIC ROBOT
IN WOLVERHAMPTON.

A12

Methods for controlling traffic by mechanical means are rapidly being perfected and the traffic robot is gradually being adopted in all parts of the country. Here is the latest type as erected at Wolverhampton.

THE PASSENGER WHO KNEW IT ALL BY HEART.



A humorous sidelight on the M.C.C.'s London-Exeter winter run which broke much new ground this year.
The event is fully reported elsewhere in this issue.

Light Cars of 1929 Reviewed in Detail.

The Morris Minor

ALL ABOUT A MUCH-TALKED-OF CAR PRODUCED IN A WORLD-FAMED FACTORY. ITS BEHAVIOUR ON THE ROAD.

THERE are some men who possess unusual ability, a remarkable amount of foresight and boundless energy which will carry them through, once they have set their mind on anything. Any venture they undertake turns out a success, even though their activities may be many and various. Such a man is Mr. W. R. Morris, who from a modest beginning as a maker of bicycles has risen to the position of guiding spirit to the great concern known as Morris Motors (1926), Ltd.

The public having come to regard Mr. Morris in this light, he had a doubly hard task when he decided to launch a model which would come not only within the economy class, but in the front rank of that class. Already it was catered for by more than one small car with a well-established reputation, and much more was expected of a small model from the Morris factory than would have been expected had the majority of other car manufacturers decided to turn their attention to this market.

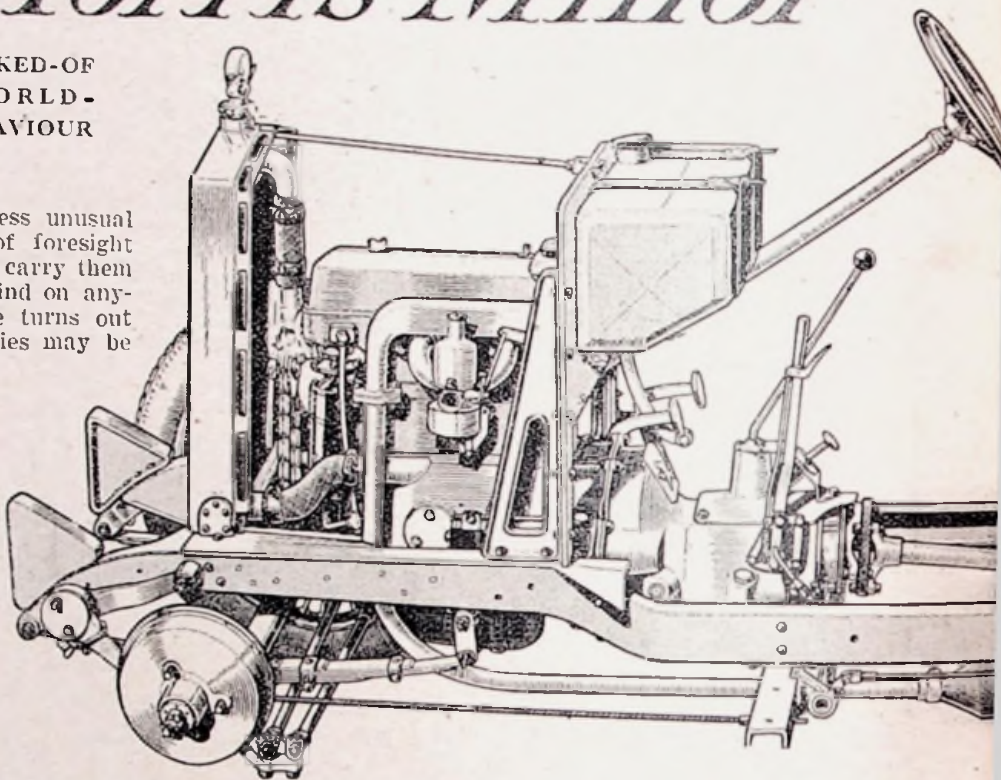
Having now supplemented our examination of the car when it first came out with actual experience of one of the saloon models over about 1,000 miles, we can say without qualification that the public will not have any cause to find themselves disappointed in their expectations when the Morris Minor comes into their hands in large numbers.

The main specification of the car will already be familiar to most readers, but the chassis is interesting enough to merit a detailed description. One of the most noteworthy features of the whole vehicle is its amazing compactness; every inch of space has been turned to good account. In this matter the cleverness of the designer is particularly striking, for to produce a car of such modest overall dimensions that it can be housed in quite a tiny garage but at the same time to provide comfortable accommodation for four adults, is not by any means an easy matter.

It has been done with astonishing success in the case of the Morris Minor, however, and the car boasts of quite as much comfort as many distinctly larger vehicles.

Turning now to a consideration of the chassis, we naturally come to the engine as the starting point. Throughout, it has been built with careful attention to detail and, above all, with an eye to keeping its overall size as small as possible. Of the four-cylinder overhead-camshaft type, it has a bore and stroke of 57 mm. and 83 mm., giving a capacity of 847 c.c. and an R.A.C. rating which brings it within the £8 tax limit.

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THE MECHANISM OF THE MINOR—A special drawing of the sturdy and business

The cylinder head is, of course, detachable, the cylinders, barrels and crankcase are one casting and the sump, together with a gauze filter which covers its entire upper area, is a separate unit. The valves are operated by an overhead camshaft, the drive for which is one of the most interesting features of the whole car. The vertical shaft which drives the camshaft via a pair of helical gears also forms the armature shaft of the dynamo which, of course, is vertical.

On the near side of the power unit are the exhaust and induction manifolds—which, by the way, are cast in one and so arranged that an efficient "hot spot" is provided—an S.U. constant-vacuum carburetter and a Lucas six-volt starter. The latter is spigoted direct into the clutch housing and is provided with a removable plug through which the pinion may be examined. The cut-out and fuse, which are mounted on the front of the dash, are also revealed by lifting the nearside of the bonnet.

On the off-side of the engine are the oil filler orifice and dip stick conveniently close together and readily accessible. Adjacent is the distributor, which is mounted at a particularly convenient angle for

inspection. Unlike the well-known Morris-Cowley, the Minor is fitted with coil ignition—a system which is rapidly gaining favour.

The lubrication system gives a key to the thoroughness with which the engine has been designed, a pressure-feed system to all bearings and to the valve gear being employed.

Cooling is, of course, on the thermo-siphon principle,

AT A GLANCE.

ENGINE: Overhead valves and camshaft, 57 mm. by 83 mm. (847 c.c.); R.A.C. rating 8.05 h.p. Tax £8.

TRANSMISSION: Single plate clutch, three-speed unit gearbox, central control, spiral-bevel axle with full differential.

DIMENSIONS: Wheelbase 6 ft. 6 ins., track 3 ft. 6 ins., ground clearance 7 ins., turning circle, right lock 31 ft. 5 ins., left lock 32 ft. 6 ins. Overall length 10 ft., overall width 4 ft. 1½ ins.

MODELS and PRICES: Chassis, £100. Tourer, £125 (with Triplex screen, £127); Saloon, £135 (with Triplex screen and windows £141 10s.).

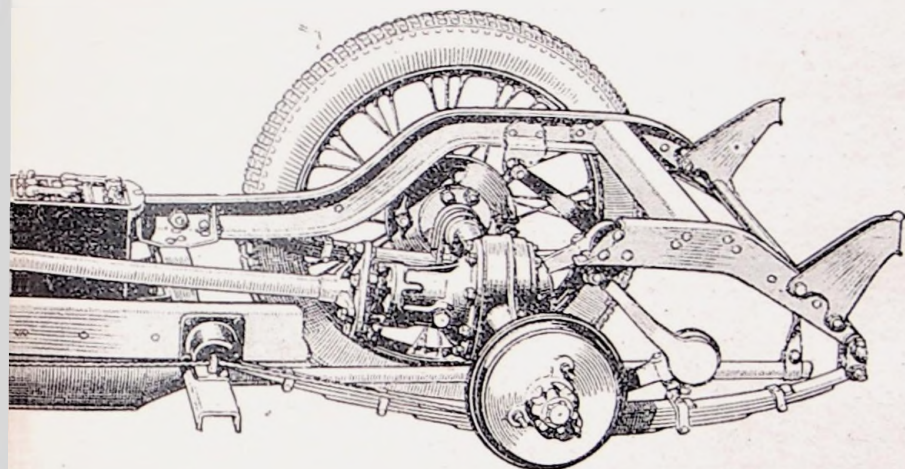
MAKERS: Morris Motors (1926) Ltd., Cowley, Oxford.

the engine being placed low in relation to the radiator head tank to promote good circulation. A two-blade fan driven by belt from the front extension of the crankshaft is provided and has the usual eccentric mounting to give ready adjustment. Other points in the engine specification which have not already been mentioned are aluminium pistons and a two-bearing crankshaft of robust design.

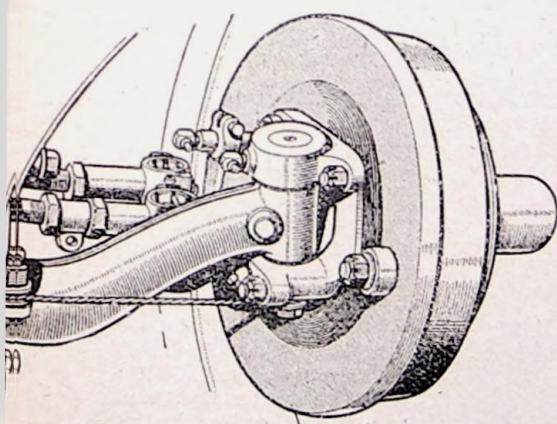
In the layout of the transmission conventional ideas have been followed out, a single dry-plate clutch with fabric lining and a three-speed gearbox being bolted up in unit with the engine. The gear ratios are 4.9, 8.97 and 17.5 to 1. Just behind the box is the speedometer drive and the hand transmission brake; thereafter an open propeller shaft, supported at each end by a Hardy fabric universal joint, transmits the power to a spiral-bevel back axle with full differential. No torque stay is used, the semi-elliptic springs being

In the design of the brakes the needs of the bulk of present-day drivers are met by the pedal being coupled to internal expanding shoes on all four wheels, whilst the hand brake is mounted on the transmission and is intended more for parking or for emergencies than as a "service" brake.

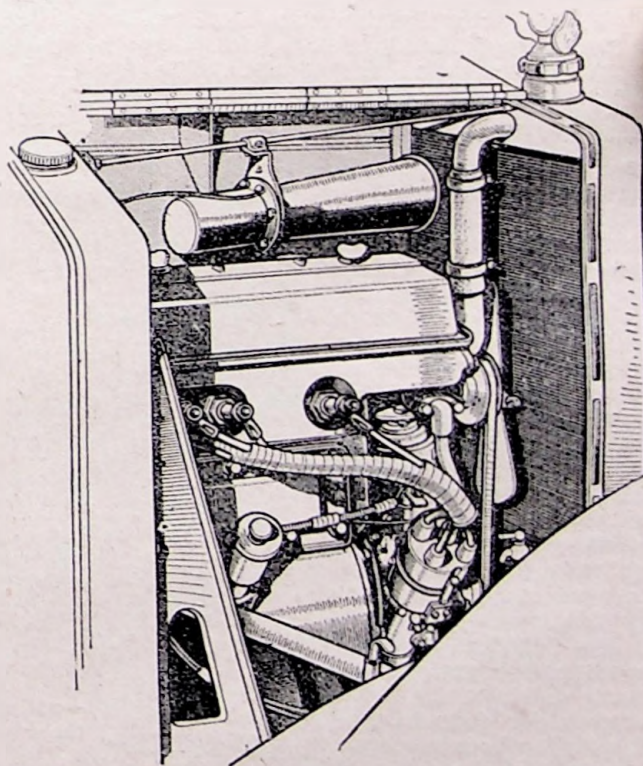
Cable operation is employed for the four-wheel brakes, the system having the advantage of simplicity and freedom from those annoying rattles which so often develop after a few seasons' use in systems employing rods. The brake pedal, which in common with the clutch pedal is mounted on the clutch housing, is connected to a cross-shaft mounted just behind the cross-member which passes under the rear end of the gearbox, the shaft carrying arms above and below it which transmit the pull to the cables for the rear and front brakes respectively. Particular care has been taken to ensure that the braking effect is not



Morris Minor chassis, showing practically all the more important features.



(Left) The steering head and front-brake-operating gear. (Right) An off-side view of the engine, showing the compact arrangement and the accessible position of the distributor and oil filler.



The rear spring anchorage and neat shock absorber mounting.

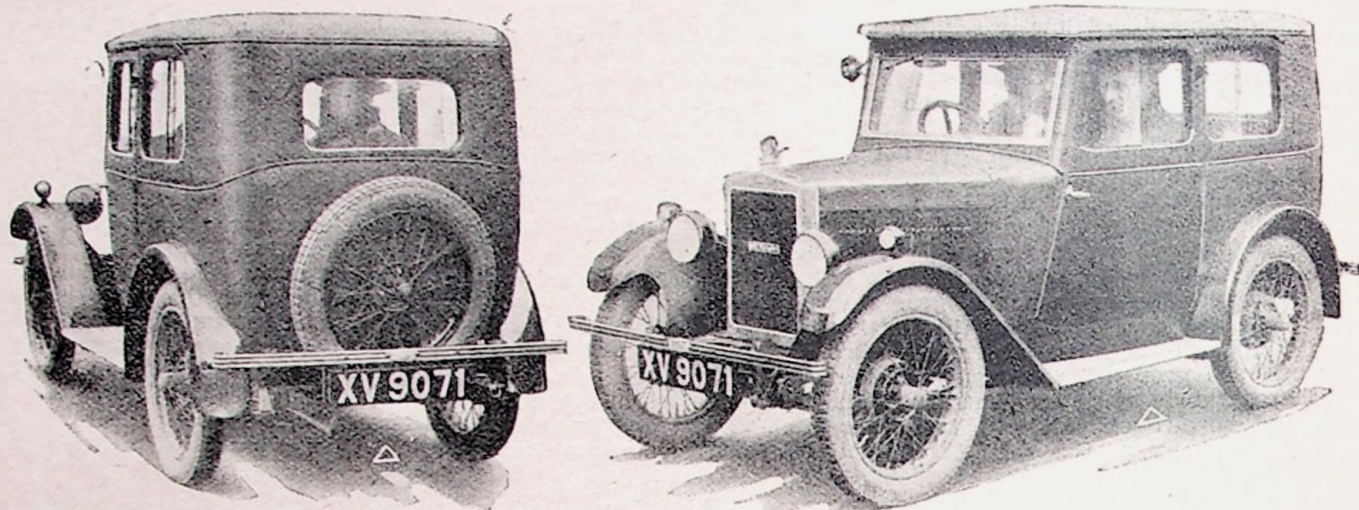
relied upon to take the reaction and to transmit the drive on the Hotchkiss principle.

The main frame of the chassis is composed of the usual channel-section steel members. They are of particularly robust size for a car of the dimensions of the Minor. The side-members are downswept from the rear of the dash, being unswept again at the back to allow sufficient clearance for the rear axle. Four cross-members are employed, whilst the clutch housing and rear engine bearer arms virtually form a fifth cross-member so that chassis flexure is reduced to an absolute minimum. On both the front and rear dumb-irons are triangular-shaped supports for the bumpers, which are supplied as standard.

The suspension system is by means of semi-elliptic springs at both front and rear, the front springs being noteworthy in that the axle is mounted forward of centre, whilst the rear springs are worthy of comment on account of their being unusually long. All four springs, incidentally, are provided with rebound leaves, and Smith shock absorbers are fitted all round in addition.

altered by movement of the axles; thus the cables to the rear shoes pass through eyes concentric with the forward shacklepins of the rear springs. The front cables pass over pulleys in line with the steering pivot pins so that the braking is not affected when the steering is locked over.

The steering gear, incidentally, although employing the conventional principle of worm and wheel, is unusual in that to keep the design compact the worm wheel is mounted at the side of the steering column and not beneath it, as is generally the case. The gear reduction, too, is unusually large for so light a car.



**OF PLEASING
APPEARANCE.**

— The lines of the Morris Minor are very nicely proportioned and the car has a well-tailored look from whichever angle it is viewed.

The layout of the chassis calls for no further description except to say, perhaps, that from front to rear it displays that thoroughness and attention to detail which characterizes all Morris products.

Convenience, too, has obviously been studied in the design of such items as the petrol tank, which is provided with a quick-release cap placed in a handy position for filling when the bonnet is raised. The battery is readily accessible, being slung in a cradle beneath the driver's seat, which can be lifted out in a second or so.

When one glances at the complete car, particularly the saloon model, the exclamation, "What a pretty little job!" comes irresistibly to the lips. Everything is so well proportioned, and the lines give such a good compromise between sportiness and sedate dignity that the exclamation is well merited; moreover, although only 10 ft. is occupied, from the tip of the front bumper to the tip of the rear, the car does not look squat.

The body of the saloon is of the real fabric type, not metal panels covered with fabric. It appears to be unusually well built and capable of giving very satisfactory service. A choice of either brown or blue, both pleasing shades, is given in the case of both models, but the tourer, of course, is metal-panelled and has a cellulose finish. The wings and wheels—of the wire type and shod with 27-in. by 4-in. tyres—are black.

The interior provides a surprising amount of room and is really large enough for four adults, this having been achieved largely by the use of deep wells, which increase the leg-room considerably. The front seats are of the bucket type, the backs in each case being hinged, whilst on the passenger's side the seat can also be tipped forward, making entry to the rear compartment almost as easy as if the body were of the four-door type.

The interior is attractively furnished and covered with leather cloth to match the exterior. All the windows—the body is of the four-light type—are of the sliding variety and provided with anti-rattle stops. The front screen is hinged at the top, and if desired can be swung out into an almost horizontal position.

A10

Equipment is on a particularly generous scale for a car selling at £135. In addition to bumpers and shock absorbers, which have already been mentioned, a five-lamp lighting set with headlamps of really sensible dimensions is fitted. The radiator cap sports a decorative and useful thermometer and a mirror and suction-operated screen wiper are provided.

Inside one finds a neat oval panel on the fascia board housing a speedometer, oil gauge, ammeter and engine switches. Mention of the latter, incidentally, reminds one of the fact that a "half charge" switch is provided for the dynamo so that the output can be regulated to suit either winter or summer conditions. The instruments are lighted by a centrally placed dashlamp which can also be used to light the whole of the interior of the car by rotating the cylindrical cover. A mixture control for the carburettor and a screw-down hand throttle are disposed just under the fascia board, one on each side of the control panel.

Mounted on the steering column is the advance and retard control—a lever of sensible dimensions—and the horn switch, whilst conveniently placed under the scuttle, where it can be reached by leaning forward from the driving seat, is a two-way petrol tap providing a reserve supply. Pockets are fitted to both doors and are of the pleated type which can be used for storing quite bulky packages, whilst the tool-kit—a generous one, by the way—finds its home under the passenger's seat.

In the matter of tool accommodation one cannot help feeling that the manufacturers might have provided a little

more space, although where it could have been found it is difficult to say, as such good use is made of every available square inch.

When one takes the wheel any optimistic expectations that one may have entertained are amply fulfilled; in fact, the car seems to convey an impression which is a strange mixture of that promoted both by a large and a very small car. In other words, the Morris Minor boasts of all those qualities of handiness in traffic that is so great a convenience these days, combined with the comfortable feel of a car of much greater size.



**NO
GYMNASTICS —**

—are required when entering or leaving the driving seat despite the small proportions of the car.

The steering provides an excellent example of this. It is exceptionally easy, this being due, no doubt, to the fact that a considerable reduction is allowed, whilst the weight of the car is quite low. On the other hand, that annoying kick in the steering wheel which one often finds is entirely absent. The lock is exceptional and is rivalled only by that curious vehicle, the London taxicab.

In the suspension system the Morris concern has achieved remarkable results, for the car rides over rough surfaces with that pleasant cushion feeling that is to be found as a rule only on cars with a long wheelbase and flexible springs. At the same time there is no excessive rebound, the only conditions that seem to affect the car being exceptionally deep and wide potholes, which, naturally, produce some bucketing. Even this, however, is not so severe by any means as one would expect from a car with a 6-ft. 6-in. wheelbase.

A Sweet Clutch.

All the larger Morris models are famed for their particularly sweet clutch, and, although a different type of mechanism from the Cowley is employed in the Minor, the result is equally effective, the clutch being very light and smooth in action, whilst the pedal movement is just right to suit the tastes of the average driver. The gearbox is fairly quiet on the indirect gears, but the change is not too easy. An attractive feature, however, is the quickness with which upward changes can be made. In addition, the ratios appear to have been chosen particularly happily, and the car boasts of a liveliness that is very fascinating.

This nippiness is due, of course, to the particularly

efficient power unit which, incidentally, produces no less than 20 b.h.p. at 3,000 r.p.m. Surprisingly good average speeds can be put up, the car maintaining a steady 40 m.p.h. in an effortless manner.

The brakes when the car was delivered were rather poor, but have improved considerably in service. No doubt, when thoroughly bedded, they will become more efficient.

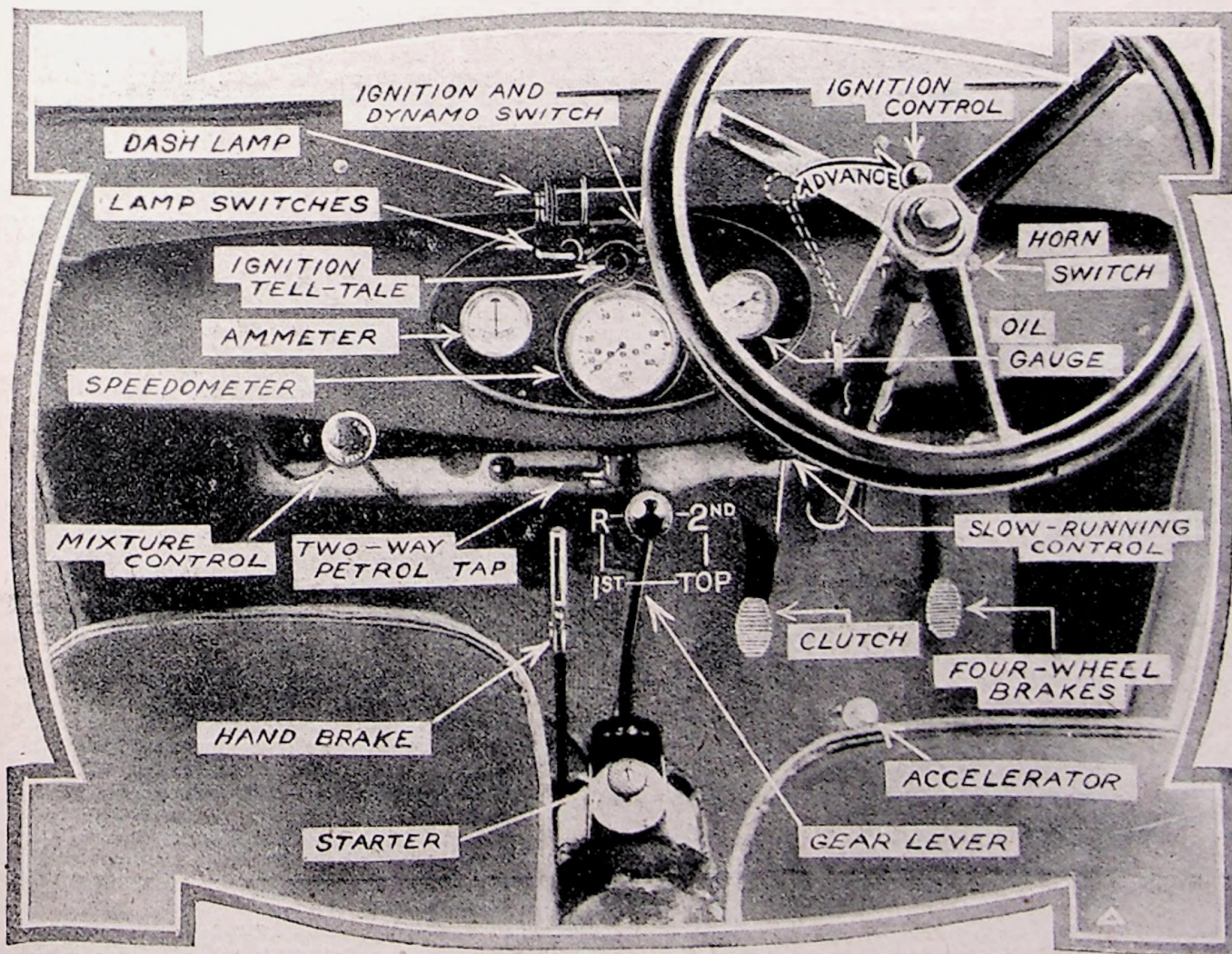
Lively on Hills.

Hill-climbing is particularly good, the car pulling sturdily on top gear at slower speeds than one usually expects from a small high-efficiency engine; whilst if second is engaged, one can hum merrily up and pass much larger cars in a very pleasing manner. Bottom gear, of course, is seldom called for on hills, but when it is engaged one can confidently tackle the worst test hills in the country.

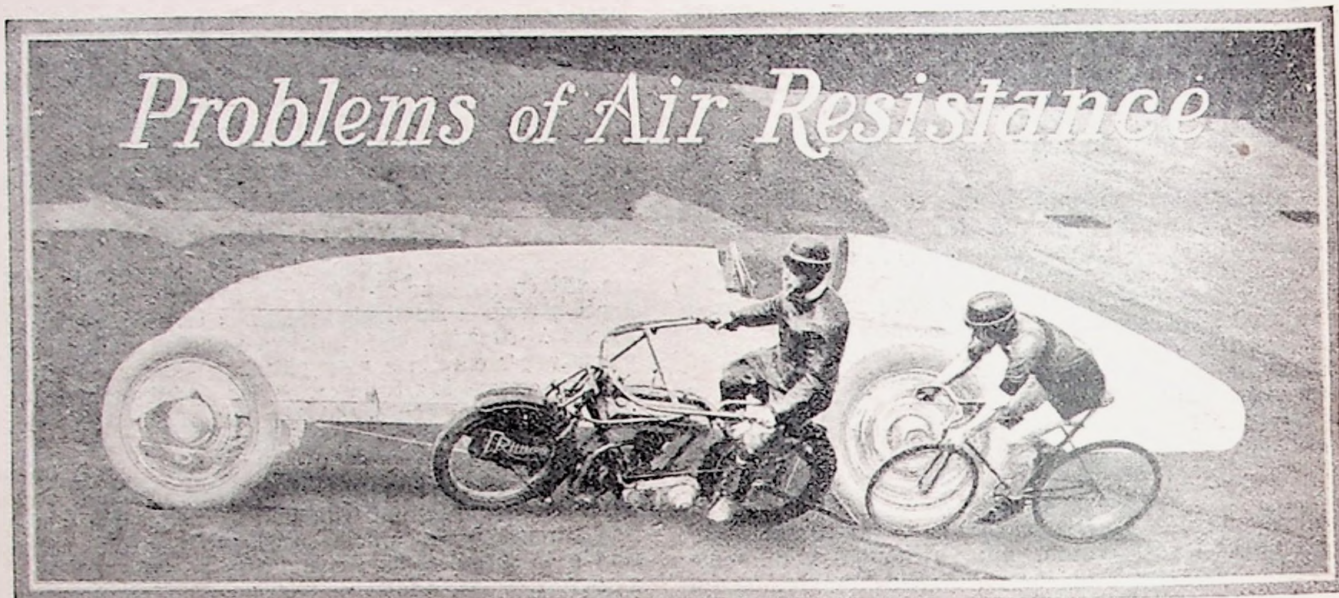
In addition to its flexibility, which has already been mentioned, the engine gets on with its job in a very convincing manner and without any noticeable vibration throughout its whole speed range. We found that over 80 miles could confidently be expected from a can of petrol, whilst oil consumption appeared to be in the neighbourhood of 2,000 m.p.g.

All-out speed on top gear is over 50 m.p.h., whilst 40 m.p.h. can be achieved in second. In bottom gear a useful limit is about 17 m.p.h., although this can be exceeded.

Altogether, then, the Morris Minor is a worthy addition to the Morris family. It is a sprightly young brother of the ever-popular Cowley and a young relative to the dignified Oxfords of which they may well be proud.



OF INTEREST TO THE DRIVER. — A view of the driving compartment of the Morris Minor, showing the various fittings and the layout and working of the controls.



Many people imagine that careful streamlining is necessary only on racing cars and aircraft. It is very important, however, to reduce air resistance to as low a figure as possible even on an ordinary car. This interesting article explains why.

NO body, however streamline its shape, can move through the air without meeting a certain resistance. The value of the resisting force will vary with the speed of the air relative to the body, the size of the body, the shape of the body, and the density of the air or the altitude at which the experiment is made.

The air resistance on a body moving through still air at 30 m.p.h. equals that of the same body stationary in a wind of the same velocity. So that the relative wind speed on a body moving at 30 m.p.h. against a wind of 30 m.p.h. is 60 m.p.h. Similarly, if the wind were following, the relative air speed would be zero.

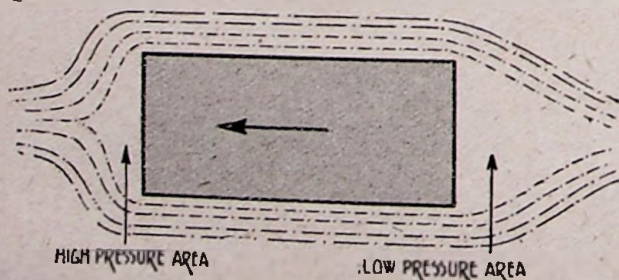
An increase in air speed causes the resistance to motion to increase as the square of the speed. Thus, if the resistance of a body is 50 lb. at 30 m.p.h. it will be four times that amount (200 lb.) at 60 m.p.h.

The power required to propel a body through the air is proportional to the product of the speed and resistance, and as the latter varies as the square of the speed, the power required is proportional to the cube of the speed. So that if 4 h.p. is required at 30 m.p.h., 32 h.p. will be required at 60 m.p.h.

In the case of racing cars, aeroplanes and other fast-moving bodies, air resistance is of vital importance. This is easily shown by taking the previous case and finding the power required to overcome air resistance at 250 m.p.h. This power is:—

$$\frac{250^3}{30^3} \times 4 \text{ h.p.} = 2,310 \text{ h.p.}$$

which, of course, at the present moment is a ridiculous figure.

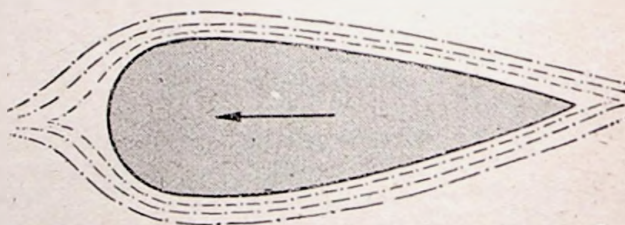


This diagram explains the theory of the motor-paced cycle (see heading photo.). The cyclist rides in the low-pressure area behind the pacer and thus is partially drawn along.

A18

Let us consider how the average car offers resistance to the air. Because the primary object of a car is to carry passengers whose comfort has to be considered in every detail, the car designer is up against a very difficult proposition in cutting down air resistance to a minimum. Some improvements certainly can be made, but mostly at the expense of appearance and comfort.

The nearer a body or its components approach a flat plate travelling broadside on to the wind, the greater will be its resistance for the same area, the radiator,



When a body is streamlined it meets with very little air resistance; there is practically no low pressure area. That is why racing cars are fully streamlined.

mudguards and windscreen being the biggest offenders. As regards radiators, an elliptical, rounded, or vee shape, nicely faired into the body, offers a less resistance than a flat type of the same area as fitted to many cars.

There are several ways of reducing windscreen resistance; one is to make it of such a size and shape as just to cover the space occupied by driver and passenger. Another is to slope it backwards, if it is in one piece, so that the top of the screen is a short distance above the level of the driver's eyes.

Probably the best way would be to arrange the windscreen to form a V, with the apex in front and in the centre line of the car, also sloping it backwards to as large an angle as is consistent with practical requirements.

Mudguards present a much more difficult proposition on account of their shapes and, without actual tests, one could make only a very wild guess as to what the effect of any modification would be. If there are to be mudguards at all a flat plate running horizontally from front to rear above the tyres would

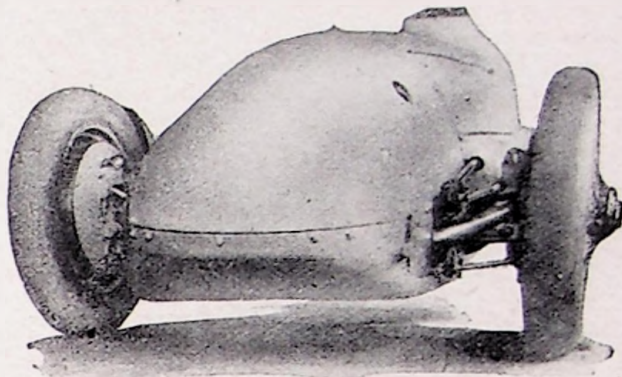
give the best results, but for practical purposes this is undesirable.

Wheels offer a much simpler solution, as it is known from actual tests carried out on aeroplane wheels that those with discs on each side, fitting closely to the rim, give by far the least resistance.

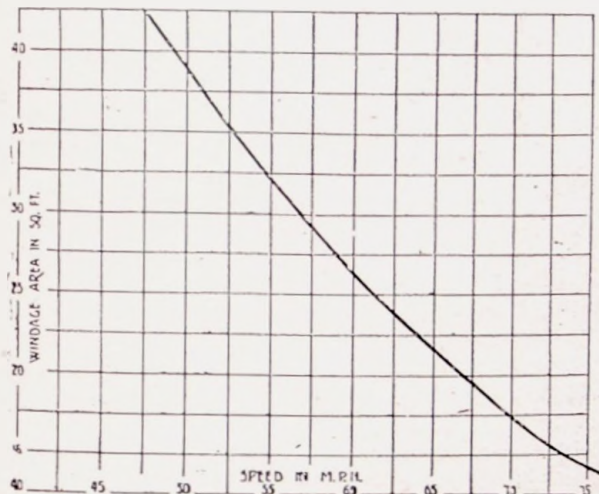
Nothing has been said in the foregoing about the body itself. Of all types, those with square radiators and square rear portions will have the highest resistance. The fitting of a tapering tail to such a body will cut down its resistance considerably. This, however, is an almost impossible ideal in the case of a four-seater, but the 7.5 h.p. Citroën cloverleaf forms an example of a three-seater tending towards it.

It is not obvious at first why a square-ended body should offer the greatest resistance. One of the accom-

ance is shown in one of the sketches. It must be noted, however, that the body moves with the rounded end foremost, as a sharp-pointed nose does not necessarily reduce drag and is liable to increase it in a side wind. For a given cross-sectional area the minimum drag has been found to be when the length is three to four



When ultra high speeds are aimed at, specially careful streamlining is necessary. This photograph shows the front cowling of Capt. Malcolm Campbell's record-breaking "Blue Bird."



This curve, plotted from data obtained some years ago by Mr. S. F. Edge, shows how greatly the speed of a car is affected by the windage area.

times the width, the position of maximum width being at about a third of the distance from the nose.

It will be noticed that the ideal shape is that of an airship envelope. We see it copied, with modifications, throughout aeroplane design, even the cross-section of the struts and wires conforming, so far as is practicable, with this shape. Aeroplane bodies have to be a compromise for structural reasons and on account of the length required.

We find the shape again in the aerofoil section, but often with a larger ratio of length to thickness than 4 to 1, and with a curved centre line. (The aerofoil section being the profile of the cross-section of an aeroplane wing).

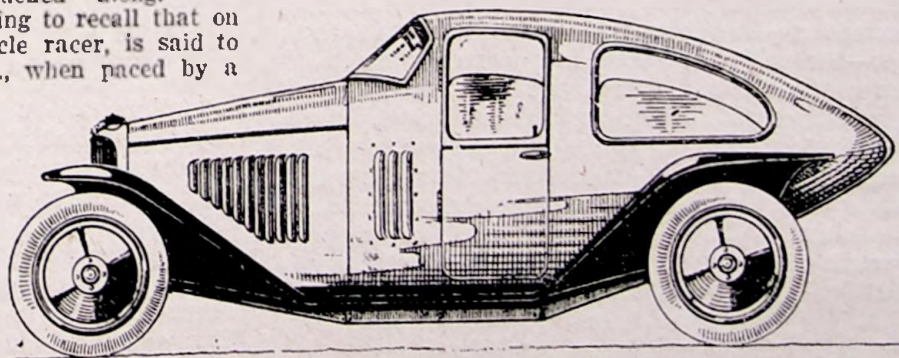
In the case of the aerofoil, considerations other than the drag have to be taken into account, because the primary function is to supply lift. The section chosen, therefore, will, as a rule, be the one having the largest relation between lift and drag, whilst being, at the same time, sufficiently thick to allow the structure to take the load.

With regard to motorcars, an illustration on this

panying sketches shows the streamlines, or the paths taken by particles of air, when passing such a body. There is a crowding up of the streamlines in front of the body which causes an increase of pressure, and a drawing out at the back causing a reduced pressure. The reduction of pressure at the rear of a car is a phenomenon well known to cyclists, who sometimes take advantage of it to attain high average speeds on the road by following closely in the wake of the vehicle and thus being almost "sucked" along.

In this connection it is interesting to recall that on June 30th, 1899, Murphy, the cycle racer, is said to have covered a mile in 57½ secs., when paced by a

A saloon body lends itself very well to streamlining and, as this sketch shows, a by no means ugly car can be built with full regard to the need for reducing air resistance to a minimum.



locomotive. The event took place in America on the Long Island Railroad, a special track 2½ miles long, being laid between the rails. The locomotive drew a coach, the rear of which was fitted with a scoop-like windshield so that Murphy was practically drawn along in the vacuum which formed as the train gathered speed.

Even so, however, the physical strain was so great that the rider was overcome after completing the mile and lost control when slowing down. He was saved from crashing by the men who were travelling in the hood observing his performance. They caught him as he fell from the machine.

The ideal shape of body to produce low air resist-

page gives an idea of how a saloon car would be designed to have a minimum drag. It will be noticed that so far as possible the ideal shape is maintained. A "perfect" streamline form is unobtainable owing to the need for providing for ample visibility from the driving seat.

So far as existing touring or saloon cars are concerned, nothing much can be done, short of elaborate structural alterations, to cut down wind resistance; indeed, for normal purposes no modification is necessary. Those owners of sports models, however, who intend participating in speed events next season might be profitably employed during the winter months in doing what they can to streamline their vehicles.

Rich Mixture



A "Matey" Fitting.

LIKE a fire, a dash light can be very good company when one is alone on a long journey, but a few nights ago I discovered something even more cheery. Hitched under the scuttle I carry a coil of wire with a bayonet socket ready for use with a bulb should an inspection light be required. Accidentally I had left a bulb in, and, chancing to move the switch, I found the lower part of the car around my feet bathed in light. The effect was so cosy that I left the lamp on for the remainder of the journey.

Wayside Restaurants.

FOR years the voices of many of us have been heard crying in the wilderness for wayside restaurants where we can get a good meal with a wife, fiancé, or what-not at a rational price, in a reasonably short space of time and under pleasant conditions.

The hotel proprietors have passed us by in this connection—the boot really has been on the other foot—the cafés have catered for a more "popular" demand and the inns and public-houses have not in most cases made arrangements which make it possible to call for a meal with our womenfolk. Recently, however, a new kind of establishment has sprung up ostensibly to supply our requirements and I have made a point of stopping at several of them. They have all made the same mistake—they are shockingly uncomfortable.

Whispers Like Gun Shots.

THE first such restaurant which comes to mind, and, it is typical of many, stands beside an arterial road, is "listed" by the R.A.C. and has a most prepossessing appearance. Inside, there is a large hall where coats and hats can be left, somewhere in a remote corner of the downstairs part are rather gloomy lavatories and the pièce de résistance is a large airy dining-room. Its walls are distempered a pleasing art shade, its curtains contrast attractively, its floor is highly polished and its ceiling is relieved with old oak beams made of cleverly stained matching. In one corner is the smallest fireplace ever built, vast windows

admit terrible draughts and the imitation wheel-back chairs are the very last word in hardness. Here and there parties are feeding, and their polite whispers echo like gun shots (in their imagination) around the room.

The food is good, the service efficient and the tables are dainty, but there is something all wrong. Nobody is comfortable or at ease. The surroundings are foreign to them, and the hard chairs and chilly atmosphere do the rest.

Caterers Take Heed.

LET me assure anyone who is thinking of opening such a place or who is wondering why their "dream restaurant" is earning such pitifully small profits, that what we roadfarers seek first and foremost when we stop for a meal is warmth and comfort. We like nicely shaded lamps, a cheerful fire or two and chairs which are hospitable.

Polished floors and imitation antique furniture may be very nice things to look at, but they strike an exceedingly chilly note when one has spent half-a-day at the wheel and relaxation is for the meantime, a matter of prime importance. Restaurants of the kind which are beginning to spring up appear to have been conceived in summer with a view to meeting summer-time conditions. Their owners should bear in mind that the little summer we have is best spent, in the estimation of most of us, not on the hard, slippery seat of a cheap wheel-back chair but picnicking on the grass. The restaurants are for the dull days, and those are the days on which they should be able to give of their best.

Six to Lunch—or Sixty?

MOST of us, I take it, can feel some sympathy for the wayside restaurateur, who cannot tell when the butcher calls whether he will have six to lunch or 60, and who has no idea whether his requirements will be a few chops or half a carcase, but we cannot excuse him for not attending to our comfort whilst the tin of bully beef is being converted into Hash Americaine and subsequently into nourishment for our jaded tissues.

My ideal wayside restaurant would have excep-

tionally comfortable chairs, waiters who served cocktails in a twinkling of an eye and lavatory accommodation which would tempt one to dawdle over the hand scrubbing and so give the chef a chance to perform his many miracles without one having to wait for ten minutes at an empty board. I know a dozen such places—there is room for hundreds more.

Cheerless Filling Stations.

DRIVING home the other night through almost blinding sleet and with the petrol tank none too full, it was brought home to me that even the most modern filling stations are exceedingly cheerless and inhospitable. The area in the neighbourhood of the pumps is very seldom roofed or in any way protected from the elements, whilst it is quite the exception for the proprietor to provide any space where clients can warm themselves or stretch their legs in any degree of comfort.

Some of the filling stations which have been erected at junction points of new arterial roads are the chilliest spots one can imagine. How it is that the attendants are not killed off with pneumonia passes my comprehension.

He-men.

ON a bitterly cold Sunday last month I was travelling along a flat Fen road, the bleakness of which was intensified by the fact that it runs beside a river. Under the dull sky the landscape looked dreary and forbidding. Not a gleam of sunshine showed anywhere. One thought of a

cosy fire and an armchair. Then I was aware that the river bank was fringed by a number of immobile forms standing as intently as heron and for a similar reason. Anglers, all, pursuing their pleasure! Some sort of competition was in progress, for there were fully fifty of these enthusiasts strung out at regular intervals and engaged in their task with silent seriousness.

I have heard of zeal burning in the heart, but, personally, I should require it to glow somewhat in the feet to indulge in such a pursuit with the temperature near freezing point and my stand a river-bank. Still, I could not help admiring the fortitude of these hardy souls who could be so impervious to the elements. No hood and side-screens for them!

Self-made Roadfarers.

THE road brings us many surprises. A few years ago I had pulled up in a village to admire the church when a man of the tramping class asked me the time. I indicated the clock in the town, but he shook his head, and confessed he could not tell the time. I thought this somewhat remarkable in the twentieth century, but a few days ago I had cause for even greater astonishment.

Fog marooned me at a country hotel at which I had as my only companion an elderly man, very expensively dressed, who, also, had become fog-bound in a large, luxurious Daimler. He had a chauffeur with him, and his every appearance suggested wealth, yet his speech betrayed a very



SOMEBODY'S "FOLLY"? —Silbury Hill, a few miles from Avebury, adjoins the Bath Road and is well known to all who are familiar with this trunk route to the West. It is the largest artificial mound in Europe.

humble origin. I soon discovered, however, that this was a fact in which he gloried. He told me that he had made his way in the world without any advantages of birth or influence, and then went on to declare that he was still unable to read or write!

I had heard of such cases before, but this was the first I had personally encountered, and I could not help marvelling that any man with such a formidable handicap of illiteracy could, in these days, rise to such a comfortable position of affluence. No, he was not a war profiteer.

Chaos Everywhere.

IT is somewhat staggering to reflect that the Government now in its final session should be content to go out of office leaving the traffic problem infinitely worse than it found it. The Transport Bill so often promised still lies in its pigeon-hole, and looks like staying there so far as the present Parliament is concerned; meanwhile the attempt to discipline the motor traffic giant by means of rules made when it was in the nursery is producing chaos everywhere.

The police are supposed to administer a law which no one pretends to observe, and benches of magistrates—many of whom in private life are business men—are forced to subordinate their common sense to legal requirements when establishing a conviction. It seems to me that the Government has never yet seriously given itself to think of the traffic problem. It could grapple with broadcasting quickly enough, but road chaos could be allowed to drift. Apparently, the only time when motorists come into its mind is when the Exchequer looks round for someone to be milked.

Easier Battery Maintenance.

A DALMUIR reader writes, in connection with my recent remarks on the difficulty of replenishing battery cells with distilled water, to say that the way to solve the problem is to buy a tapered rubber cork with two holes in it, two pieces of small gauge glass tubing and a few inches of rubber tubing. Choose a strong glass bottle holding about a pint and into the neck of it

fit the rubber cork with the two pieces of glass tubing threaded through it, each bent over at the top and one coming flush with the bottom of the cork and the other going to the bottom of the bottle. The rubber tubing is attached to the top end of the short piece of glass tubing and, naturally, when one blows through this the contents of the bottle pass out through the long piece of glass tubing.

My correspondent points out that copper tubing serves as well, but that after using a home-made apparatus of this kind for a dozen years he has found that glass tubing is quite successful and not easily broken. It is clear, of course, that with this apparatus the job of topping up a battery would be very much simplified, but why must one make it oneself and is there no simple way of ensuring that the cells shall not be over-filled? I can see no reason why a battery replenisher working on the same principle as a chicken's drinking fountain should not be introduced to get over this difficulty.

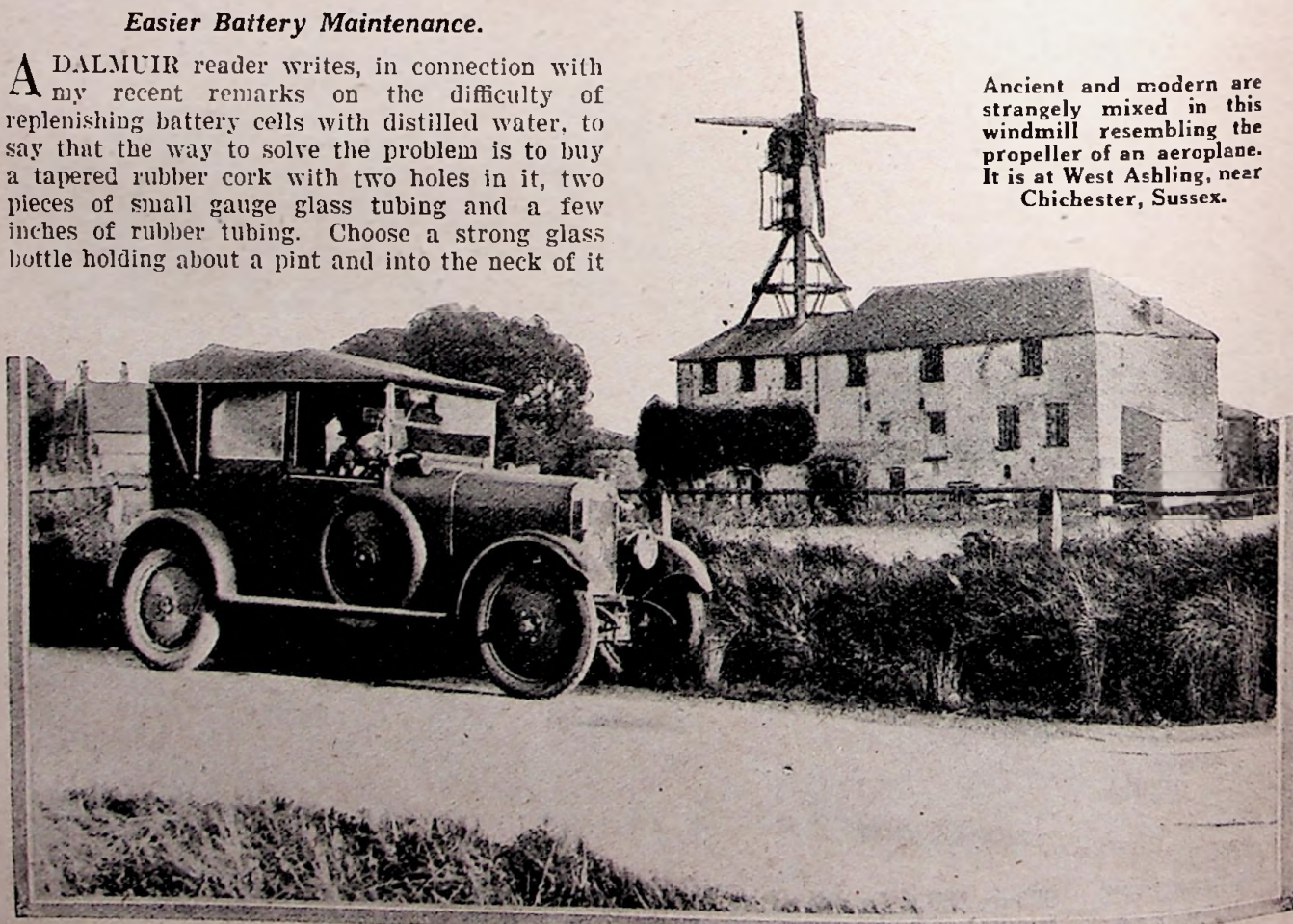
I have to thank a large number of readers for sending details of various ingenious battery-filling gadgets of their own design. These have been passed to the Editor for use in appropriate parts of the paper.

"Getting His Own Back."

I UNSCREWED both headlamps and aimed the near-side lamp right at the kerb, just in front of my near-side front wheel, and the off-side headlamp slightly in front of this spot." Thus a writer in describing his experiences in a fog.

I have often been in a similar rage myself, but tantrums of this character are too expensive.

Ancient and modern are strangely mixed in this windmill resembling the propeller of an aeroplane. It is at West Ashling, near Chichester, Sussex.



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The Light Car and Cyclecar

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NEEDS OF USERS AND POTENTIAL
PURCHASERS OF LIGHT CARS AND
CYCLECARS, AND IT HAS CONSIST-
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1929.

WITH the New Year in its infancy it is interesting to speculate upon what it will bring forth. We say "interesting" advisedly, for no man can accurately prophesy future developments even within the narrow compass of the particular little groove in which he has his being. Who was there at this time last year who even guessed that the then insistent and growing demand for a changed method of motor taxation would be met in a way which already has cost road users an extra £10,000,000? Who was there who believed that the Road Traffic Bill would progress no farther than being split up into a series of unsuccessful measures, that insurance rates were about to climb still higher, and that the 200-Mile Race and one of the oldest clubs in the country had almost run their course? Those are concrete occurrences which 1928 witnessed and which no man foresaw. It was an eventful year in motoring politics, economics and sport; it was also eventful in connection with a matter of prime importance—the joy of the open road. During 1928 motoring, per se, was less pleasurable than in any previous season. The lagging road-building policy and the invasion of our highways by very large numbers of new vehicles—notably, long-distance omnibus services—was responsible for curtailing our enjoyment and bringing within sight an artificial "saturation point" when not our pockets, but our roads, will limit the continued increase of motoring.

Nothing to Fear.

THE indications are that 1929 will witness further developments along the same lines—cars increasingly becoming instruments of travel rather than means in themselves for supplying direct enjoyment to their owners. During 1928 it was the seaside which week-end motorists enjoyed, not the journey to the coast and the subsequent homeward run. With the likelihood of an unchecked invasion of the roads by large, fast passenger and goods vehicles, and consequent further "commercializing" of the highways to provide for them, the joys of the open road will be increasingly hard for the town dweller to discover, except when he has two or three days in which to seek them.

How the General Election will affect us is a

Topics of the Day

matter which already is being argued. In our view, any changes which result are likely to be for the better. In these days all sections of the community use motor vehicles and all are concerned with the cheapness of motoring and the amenities it provides. The long-delayed Road Traffic Bill doubtless will retain its dignified position in the background, in spite of the many references which have been made to its passage during the life of the present Government. It seems practically a certainty that if it does not emerge from its present obscurity before the General Election, we shall hear no more of it this year. Important developments seem likely in 1929 in connection with traffic control and the policing of the roads generally. Twelve months hence we may, in fact, find ourselves policed by a new corps differing in many respects from the familiar men in blue.

Exhaust Dangers.

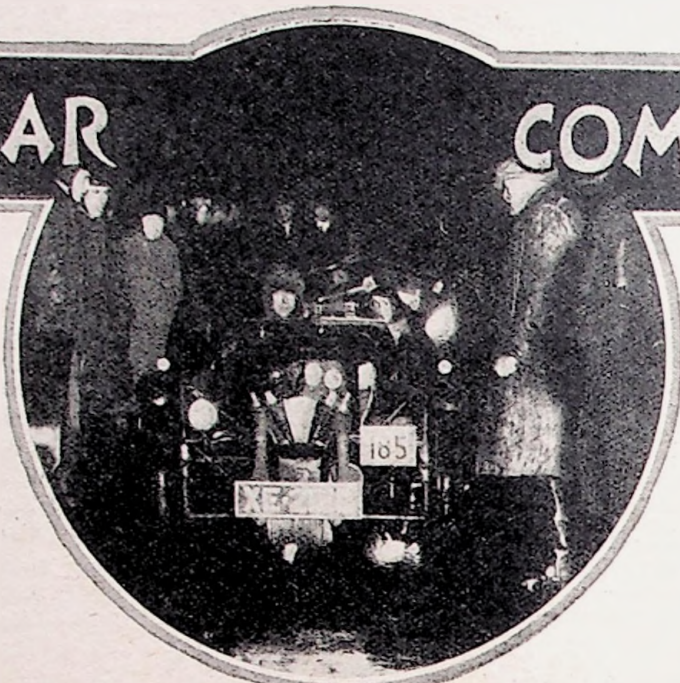
THERE is a strong temptation at this time of the year to grease, clean and make mechanical adjustments to a car within the welcome shelter of four walls, and as new converts are being made every day to motoring, we think it expedient once again to issue a very explicit warning concerning the danger of running the engine in a closed garage—particularly when the garage is of the small and compact type attached to a private house. The exhaust from a car engine, especially when it is idling, and, as often as not, running on a slightly rich mixture, is of a very poisonous nature, as it is loaded with carbon monoxide. If this is inhaled into the system, the victim is often entirely unsuspecting of danger until it is too late, as the gas can be neither smelt nor tasted.

It should not be thought that some time must elapse before a garage in which an engine is running is sufficiently charged with gas to be dangerous. With poor ventilation and the doors closed the atmosphere can become thoroughly poisonous in certain cases in less than a minute. The obvious safeguard is never to run the engine within the garage unless the doors are wide open and the tail of the car is towards them, so that the exhaust is discharged outside the building. If an engine must be run in a closed building it is essential to provide a suitable exhaust-pipe extension ejecting into the open air.

CYCLECAR

COMMENTS

By "SHACKLEPIN"



THE F.I.C.M. DECISION REGARDING CYCLECAR RACING — PRESENT POSITION UNCHANGED — LOOKING BACK BEYOND 1928.

MOTURING THIRTY YEARS AGO — STEERING DIFFICULTIES — THE THREE-WHEELERS OF 1899 — "ELECTRIC IGNITION."

IN the issue of *The Light Car and Cyclecar* dated December 21st last I published on this page an extract from a letter which I had received from the Paris correspondent of this journal. It dealt with the question of the weight limit for cyclecars in France, and stated that as the result of a decision made by the F.I.C.M. cyclecar racing in France would no longer be possible.

It appears, however, that our correspondent has been misinformed, because although the question of reintroducing the weight limit was discussed, no definite resolution on the point was passed. The position is made clear by the following letter from Mr. T. W. Loughborough, Secretary-General to the F.I.C.M., which has been handed to me by the Editor of *The Light Car and Cyclecar*:—

I notice in "Cyclecar Comments" in your issue of December 21st, that according to a letter your contributor received from France the F.I.C.M. had resolved at its last congress to reintroduce a weight limit of 350 kilogs. for cyclecars.

Such a proposal was certainly brought forward by the French representatives, but the British delegates urged that in the absence of data as to actual weights, the question should be postponed until the next conference. This was agreed to and it is therefore quite inaccurate to say that any such resolution was passed.

T. W. LOUGHBOROUGH,
Secretary-General.

At the close of the year one generally looks back and thinks over the happenings of the previous twelve months, sometimes with joy and sometimes with regret. At the close of 1928, however, I did more than this—I looked back many

D. S. C. Macaskie (Morgan) starting in the "Exeter." He used a 976 c.c. J.A.P. engine.

years, to 1899, in fact, and I considered the cyclecars of that year.

My readers need not suppose from this that my great age enables me to remember clearly what happened in 1899, because, actually, at that time I had not much more than begun to take an interest in things in general! My somewhat vague memory, however, was aided by a bound volume of our associated journal, *Cycling*, which, in 1899, was not devoted entirely to cycling matters but gave all the motoring news of the period in a supplement.

On December 9th, 1899, a special article by the late Sir David Salomons, Bart., was published, in which he summed up the "Progress and Present Position of the Movement." Unfortunately, I have not the space at my disposal to deal other than very briefly with Sir David's remarks, so I will content myself with quoting one paragraph:—

"Tremendous speed with these carriages destroys all the pleasure of their use in consequence of the great attention necessary in steering, which makes it impossible for the driver to speak to his companion, or to take notice of the country through which he is passing. Twenty miles an hour is fast enough for all purposes, and on the Continent this speed is permitted outside populous districts."

Setting aside the question of whether or not tremendous speed destroys the pleasure of driving a "carriage," the remarks show that it evidently was not particularly easy to steer the cars of 30 years ago.

The article is followed by a description of the vehicles of the period, starting with motor tri-cycles, of which there were quite a large number of makes, most of them being of 1½ h.p. to 2½ h.p. and nearly all having De Dion engines. The prices averaged £75 without, of course, an accessory of any kind, and tube ignition was fairly common. So much so, in fact, that when electric ignition was fitted, special care was taken to mention the fact in the specification.

Quadricycles and "light motor-cars" are next dealt with, and of these also there was a large selection. To modern eyes they are strange-shaped machines, all of them, one would imagine, being the acme of discomfort to ride on, not in. One amazing-looking vehicle called the "Tourist" was a three-wheeler.

The passenger and driver sat side by side on a kind of padded garden seat; steering was by means of a vertical tiller with a cross-head and handle at the top, and, in the photograph accompanying the description, one can see a large open flywheel amidships and various tanks supported on the rear fork stays. The tyres appear to be about 26 ins. by 2½ ins., and one learns from the specification that "the motor is horizontal and very powerful, taking hills remarkably well. It develops up to 3½ h.p. As electric ignition is used, an accelerator has been fitted with great advantage. There are three speeds. There are powerful brakes and the weight does not exceed 4 cwt."

The price of this machine delivered in London was £125, and the sole means of illumination at night, so far as one can gather from the photograph, consisted of two cycle-type oil lamps mounted between the front wheels.



Legal Aspects.

THE NEED for DRASTIC CHANGES IN MOTORING LAW.

By a BARRISTER-AT-LAW.

THE ROAD TRAFFIC BILL LONG
OVERDUE—ITS PRESENT POSI-
TION—THE SPEED LIMIT AND
DANGEROUS DRIVING.

Although drastic revision of the present motoring laws is a most pressing need to-day the Road Traffic Bill, drafted over a year ago, still remains dormant. The present Government has persistently ignored the Bill, with the result that the laws which affect motorists remain in their original chaotic and unsatisfactory state. In this article a legal contributor deals with and explains certain aspects of the present laws. His criticisms and suggestions are of particular interest to all motorists. It may be also that anti-motorists will find some grain of comfort in the remarks regarding penalties for motoring offences!

IF the Bill recently introduced by Lord Cecil in the House of Lords for the reform of motoring law did nothing else it served as a reminder, were one needed, of the dilatory manner in which the present Government have dealt with the question. It was well over a year ago that the draft of the Road Traffic Bill was printed, but, except for the announcement that the Bill will not be proceeded with this session, nothing has been done in regard to it—or, rather, all that has been done is that a certain amount of the taxpayers' money has been spent on drafting and printing the text of the document. The draft Road Traffic Bill was some 60-odd pages in length and it dealt with many aspects of motoring.

Fixed Speed Devices.

Lord Cecil's Bill also suggested numerous changes in motoring law, and one, at least, of these suggestions is totally impracticable, even if it were desirable. This was the suggestion that all cars should be compelled by law to have fitted a device to prevent them from exceeding a fixed speed limit. The disadvantages of such a system, even if it could be introduced—which is highly doubtful—are so obvious that it is unnecessary to deal with them here. They were sufficiently disposed of in the debate in the House of Lords.

There are reforms in motoring law which are undoubtedly needed, but it is extremely questionable if there are so many needed as Lord Cecil and the Government seem to suggest. The question of compulsory third-party insurance has already been fully dealt with in *The Light Car and Cyclecar*, but the most important questions, both from the motorist's and the general public's point of view, are those connected with dangerous driving and the speed limit.

No reasonable motorist objects to dangerous driving being regarded as a serious offence, but what he does object to—and rightly—is the prosecution for dangerous driving of competent drivers, on evidence of speed alone and the comparative immunity of those really dangerous drivers who pass on corners, hills and bridges, cut-in, suddenly emerge at top speed out of side turnings, and so forth.

It is these motorists whom the police should prosecute with unflinching vigour, and no ordinary motorist would be anything but pleased to hear that they had been driven off the roads. Fines and imprisonment for the road-hog are useless. It must be borne in mind

that the object of punishment is not merely to punish but to prevent a recurrence of the offence.

In these circumstances it seems a pity that the police do not, instead of competing with each other to catch the biggest haul of motorists in speed traps, devote their energy to bringing the real road-hogs before the court, and that, in turn, the court does not, instead of inflicting heavy fines for merely exceeding the speed limit, suspend for a very long period, or for ever, the licences of all drivers proved guilty of really dangerous driving. It appeared from his speech that Lord Cecil was, at any rate partially, in agreement with this view.

It is common knowledge that there is probably no motorist who does not at one time or another exceed the present speed limit. It is equally well known that whether the speed of a car be high or low danger may occur through negligent or reckless driving. It is difficult to see why speed which does, and can do, no harm to the public should be prohibited in these days.

Dangerous Driving Law.

If, then, it is admitted that the chief aim of the law is to penalize and prevent dangerous driving as far as possible, it will be well to consider the present law on the subject. It is not putting it too high to say that a consideration of the present regulations dealing with dangerous driving shows conclusively that, with the law as it is at present, every conceivable kind of dangerous or negligent driving can be punished with as large and, from the public's point of view, protective penalties as could possibly be expected in this country. No change whatever, in respect of this branch of motoring law, is needed except the increase or abolishment of the speed limit.

These are the words of Section 1 of the Motorcar Act, 1903:—

"If any person drives a motorcar on a public highway recklessly or negligently or at a speed or in a manner which is dangerous to the public having regard to all the circumstances of the case including the nature, condition and use of the highway and the amount of traffic which actually is or might reasonably be expected to be on the highway that person shall be guilty of an offence under this Act."

It may reasonably be asked what kind of driving, which is or might be of harm to the public, is not pro-

libited by this section. As for the penalties, on a first conviction a motorist is liable to have his licence suspended and, in addition, to be fined £20. On a second conviction he is liable to a similar suspension of licence and, in addition, to three months' imprisonment or a fine of £50 at the option of the court.

When it is remembered that, if anyone is hurt or killed as a result of such dangerous driving, the offender can be charged with a much more serious offence and be sent to prison for a very long time, it may be asked again what greater penalties can possibly be desired. It may be that the wrong drivers are prosecuted or inappropriate penalties inflicted, but this is a defect in the administration of the law, not in the law itself, and no legislation can alter a defect of this kind; it can be done only by instructions issued by high authority to the police and magistrates. It would be interesting to know what arguments can be raised by

the most confirmed anti-motorist to displace the foregoing facts.

Minor amendments of the law are indeed necessary. The regulations as to obstruction, parking, noise and so forth need to be carefully considered and amendments made, at any rate, to those relating to the first two points. There may be room for alteration in the law as to driving and car licences, and the questions of physical fitness and tests for drivers are of some importance and need consideration.

In this connection it is extremely doubtful if any but a very small percentage of accidents are caused by drivers who could not pass any reasonable driving test. There may, however, be some argument in favour of providing that persons suffering from a definite physical disability should, if required by the licensing authority, show that they are perfectly capable drivers before being granted a driving licence.

THE P.C.C. FITTING.

MY brother-in-law, Thomas, is what may be described as a crank motorist—that is, he is absolutely “hot nuts” on anything to do with cars. He doesn't know much about them, but that fact quite fails to damp his enthusiasm. His claims to be a motorist are rather involved and somewhat deep-rooted. I think his father used to ride a “penny-farthing.” Thomas himself had a pedal car when a lad of six or so, followed by roller skates, a bicycle, an impossible little cyclecar and an even more impossible two-seater of 1910 make.

Quite recently, however, he gave everyone a shock by buying a smart little six-cylinder supercharged something or other. Even I, prejudiced as I am, admit that it is absolutely a top-notch little bus. It is quite capable of 70 m.p.h., although Thomas has never been known to exceed 25—whether he is a bit of a dog when on his own, however, I cannot say. It is my private opinion that he is scared to go at more than 25, although he *says* it is because he is a careful driver.

A few mornings ago I was busy cleaning my plugs and making a few adjustments when Thomas dropped in. I had skinned two or three knuckles and was not in the best humour.

“Nice mornin', old man, what? Haw! haw!” he giggled, smacking me on the back so that I knocked my head on the cylinder block. I suppose that was a joke, but I did not appreciate it, and the atmosphere was quite 10 degrees below zero.

Troubles always come with Thomas, and it is only the fact of our relationship that prevents me refusing him admittance, or, alternatively, of throwing him out if he *does* get in.

I pressed the starter button, at first without result. When the engine finally consented to start and was ticking over really well Thomas brightened up.

“Ah!” he said, “something wrong here!” and tore up the bonnet before I could stop him.

“My dear chap,” I said, “the engine is running perfectly.”

He looked at me with some surprise—I had *dared* to oppose him!

“No; oh, no!” he said firmly. “It's mag. trouble; sounds serious, too!”

“It will be,” I thought, “if I don't stop the lunatic.”

He had already ripped off three of the four plug leads, and said they were nearly off, anyway.

Then I had an idea—a brainwave. I'd get rid of him! It should be explained that Thomas has a mania for “helping” people with cars, and is doubly eager when he knows that help is asked for. So I said:

“Thomas, I was trying to deceive you”—a pained look. “It is the mag. The makers advised me that it needs a P.C.C. fitting.”

“A what?”

“A P.C.C. fitting.”

“What's that?”

“Well,” I said, “to be frank, I don't know.”

“Good!” he said. “I'll get it for you right away.”

He grabbed his hat and tore off, tripping over my inspection lamp lead and severing it.

I was happy though. The nearest shop that has anything in the nature of motor goods is ten miles away—and Thomas is a most persistent fellow—also, so far as I know, there is no such thing as a P.C.C. fitting!

A.T.



“He grabbed his hat and tore off, tripping over my inspection lamp lead and severing it.”

Making Light of the Hills in—

THE FOURTEENTH
LONDON-EXETER

M.C.C.'s. Annual Run Proves to be
Very Wet, but Easier than Expected
—How the Light Cars Performed.

AT the best of times the Slough Trading Estate can hardly be regarded as a bright spot. As seen last Thursday week by the competitors in the fourteenth M.C.C. London to Exeter run it was indeed dreary. A dullish day gave place to a somewhat misty evening, but before the first motorcycleist received the starting signal at 8 p.m. rain was falling fast.

Before the cars started it increased to a deluge and a strong wind sprang up, so that the thought of an all-night run would have made some folk shiver. "Exeter" competitors, however, are made of sterner stuff and the weather—no matter what it may be—never damps their ardour.

Thus there were only smiling faces peering through streaming windscreens, on which the wipers were already working overtime, as, at half-minute intervals, the three-wheelers followed the motorcycles and were, in turn, followed by the cars off the Estate and on to the main road.

As usual there was no hitch in the organization: the first three-wheeler left promptly at 9.30½ p.m. and the last light car at 10.29½ p.m.—a total of 117 vehicles. In addition there were 53 large cars and 180 motorcycles and combinations. There were many saloon cars in the run, but there were also stalwarts to be found who favoured sports models with Continental-type hoods.

The Three-wheelers.

The three-wheeler contingent was made up entirely of Morgans; Austins, Singer Juniors and Triumphs represented the "up to 850 c.c. class," whilst practically all the well-known makes of light car were included in the 1,100 c.c. and 1,500 c.c. classes.

The main road was followed through Reading, Newbury and Andover, and by the time Ansty's Hollow was reached, Middledown—the first test hill—was enshrouded in a blanket of

thick white mist which made visibility very bad and caused the car competitors to drive almost blindly in bottom, picking their way with caution. The hill was in an easy condition, as the rain had washed away any traces of mud and brought out a gritty surface. The most exciting incident was when an Austin saloon turned completely on its side on the top left-hand bend. It was soon righted, and continued on its way, finishing the trial with broken windows and a bent front axle.

A main road then took the competitors into Shaftesbury, where the cars

A depressing start—to all but enthusiasts!

immediately conjures up thoughts of Peak, but this year it was not the Peak of old, as road repairers had tarmaced its surface and it has become quite an easy climb, except for those who will endeavour to change up on the "easy" portion half-way up.

Wise is he who puts his foot down heavily from the top of Peak to Exeter, for this 13 miles takes a lot of covering at 20 m.p.h.

At Exeter the cars were parked in orderly manner at Gould's Garage, and buses conveyed the occupants to Deller's Cafe, where two hours were allowed for a very handsome breakfast, which served to make everyone feel slightly better disposed towards the world than they had done during the night. From Exeter to the foot of Westgate was over 13 miles of main road, in which most drivers found time to make a few adjustments to their cars.

Westgate Hill.

Frankly, Westgate Hill was a disappointment. One's first impression on looking at it was that the surface would conduce to wheelspin and consequent failures. It soon became obvious, however, that it was more gritty than it appeared, so that failures were very few and far between; in fact, amongst the light cars there were only two, one being H. J. O. Ripley (Austin Seven), who was slow and finally came to rest on the bend; and the other H. S. Latham-Boote (Alvis), who missed his gear change on the first corner.

With regard to the hill itself, the approach to the first bend is not very steep, but the stretch between the corners rises appreciably, the final section towering away quite steeply. The total length is not great, so that provided one kept the revs. well up on the lower section there was not much fear of failure due to loss of road speed. No Morgans failed, and three made very good climbs, these being driven by



E. H. Williams (Triumph Super Seven) going well on Harcombe—one of the new hills.

were parked in the market place and supper taken at the Grosvenor Hotel. One hour was allowed for this stop, and there was still a nasty drizzle going on when the Morgans, followed by the light cars, set out for the further section of the night run down to Exeter.

The route led on through Milborne Port, Yeovil, Crewkerne to Honiton, where the usual check was taken at Moore's Garage. Then came Sidbury and Sidmouth. Mention of Sidmouth

J. S. Thurlby, A. C. Maskell and H. C. Harris, whilst R. D. Smith in a Morgan Special drove very wisely, just keeping up sufficient revs. to ensure a safe climb with freedom from wheel slip.

In the class for cars not exceeding 550 c.c. engine capacity the Austins, of course, made their usual good performances, notable amongst them being those by H. W. Ellis, M. Gibson, K. G. Marsh (who was quite one of the best in this class) and H. A. Sharp. The other cars in this class included Singer Juniors, a very good climb indeed being made by T. J. Medlen in a sports model, whilst that by S. G. Hall with a standard model was quite good. Easy climbs were recorded by H. W. Wells and E. H. Williams, both of whom drove Triumph Super Sevens.

Easy for the "Eleven-hundreds."

Most of the competitors in the 1,100 c.c. class found the hill comparatively easy; N. H. Keep (Riley) slid about a little, G. E. Vaughan (Salmson) apparently found it easy, whilst P. J. Urlwin-Smith (Amilcar) created quite a sensation when he passed the spectators with volumes of smoke issuing from the cockpit, followed afterwards by flames coming from the carburetter. Despite the frenzied yells of the onlookers, it was quite an appreciable time before the driver realized that there was something amiss; then he stopped and extinguished the flames.

The ancient Frazer-Nash-J.A.P. piloted by G. Wright was slow and a little uncertain, although he topped the hill all right, whilst J. F. Cooknell (Jowett) all but stopped, just managing to keep going by judicious slipping of the clutch.

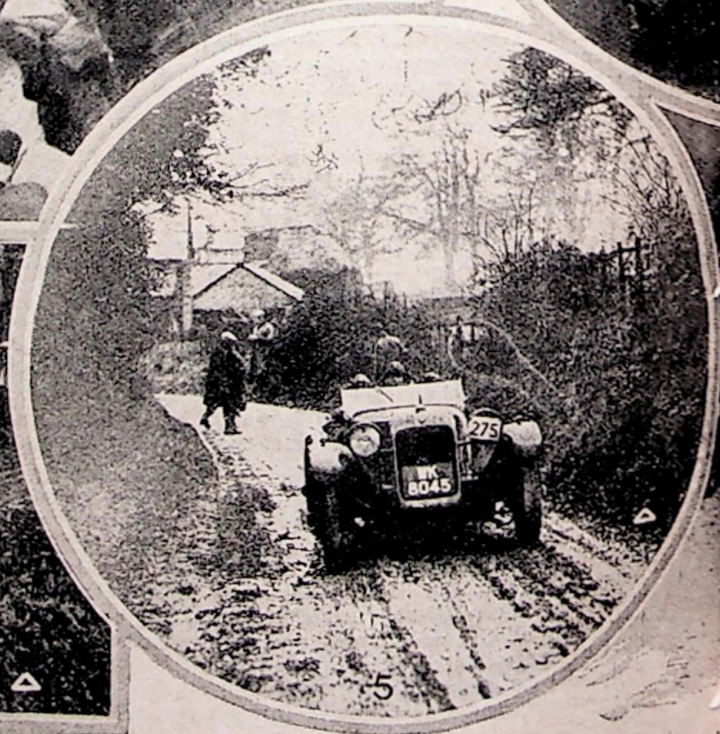
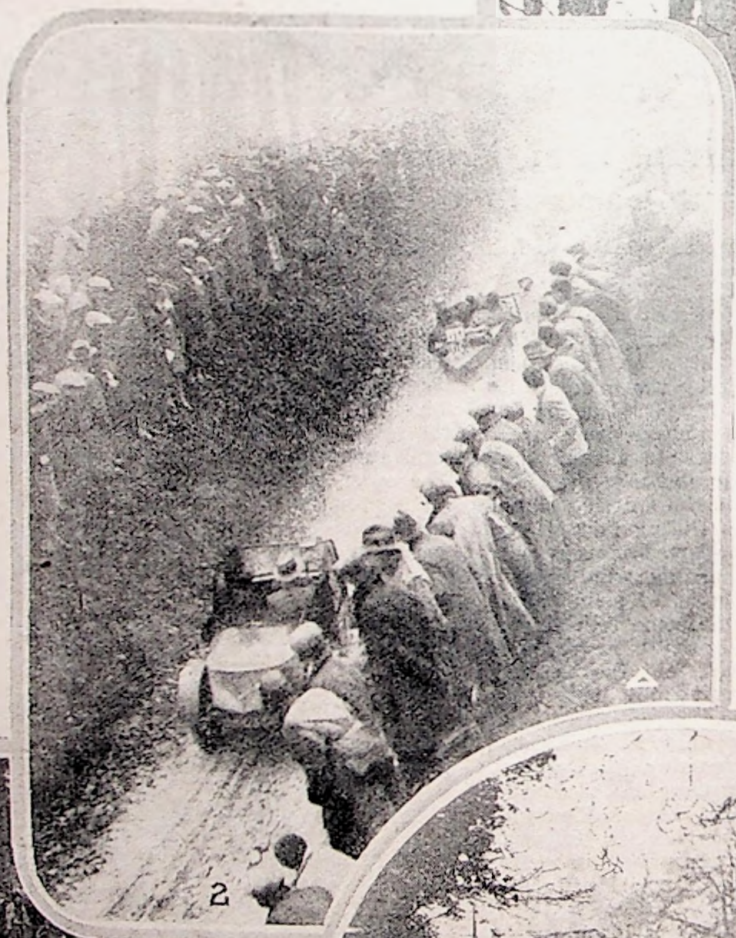
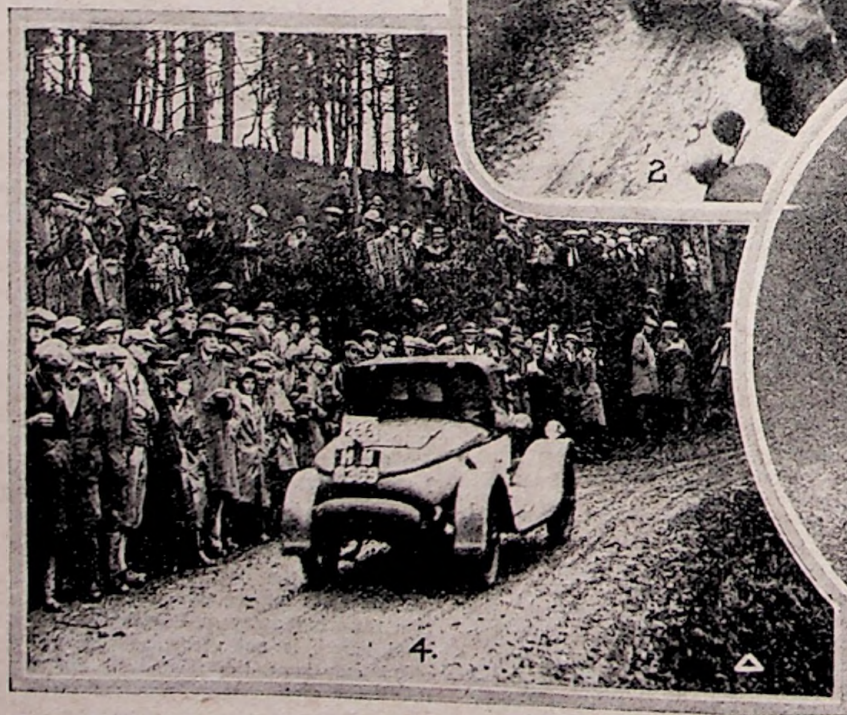
Another Jowett, however—a sports model—driven by H. J. Lovatt, Jr., showed what this make of car can do in the way of a very clean and neat climb. N. W. Rae (Salmson) and C. L. Bowes (Riley) made nice climbs.

The leader of the 1,500 c.c. class, D.

Duncan Smith (Frazer-Nash), was fast, executing neat skids on the bend, as did also H. J. Aldington with a similar car. W. J. Haward (Bayliss-Thomas) appeared a little concerned when his car slipped in the leaves at the side of the road whilst the driver was gazing around, but it did not spoil his climb. C. L. Clayton (Alfa-Romeo) had transferred his passenger to the dickey seat, as a precautionary measure presumably, but doubtless he would have climbed quite neatly without this recourse. L. Maxwell (Lea-Francis) made easy work of it, as did also other Lea-Francis drivers, these including F. Broomfield and A. Podmore, both of whom picked good courses, and W. d'A. Tremlett, who did not change down into bottom until he reached the second bend. L. E.

Fillmore (Rover) slid about rather a lot, but his climb was good, as was also that by W. A. Ponting (Bugatti), who followed close on his heels.

The front-wheel-drive Alvis driven by S. C. H. Davis had plenty of power; R. H. Penney (Alvis), with three up, was fairly fast; whilst R. Lester Williams, in a similar car, made rather a violent skid in the straight section between the bends, the two Grimsdells, also with Alvis cars, being



HOW THE NEW HILLS
WERE CONQUERED BY LIGHT CARS.

good. A. J. Mollart's passenger started to bounce in the dickey seat of their A.C., but was restrained by the driver, who raised a warning finger; M. May (Ceirano) actually changed up between the bends, but was compelled to change into bottom again for the final stretch of the hill. C. B. Moss-Blundell (Alvis), who never misses an M.C.C. Trial, made a climb worthy of an experienced hand. A. N. Spottiswoode (Bugatti) hung on to second

too long and changed down only after the second bend, with the result that he nearly stopped; it was only by slipping his clutch that he managed to keep going. With plenty of power in hand W. H. Julian (sports Standard) climbed well, as did also J. Torromé, who was driving one of the latest Standard saloon models.

The main Honiton-Sidmouth road was taken beyond Westgate until almost into Sidbury, where the road forked left, and there followed 2½ miles of treacherously greasy lanes on which quite a few car drivers found themselves unexpectedly in the ditch on occasions. Overtaking on this stretch was quite impossible, but, luckily, nobody came seriously to grief, which would have meant long delays.

Harcombe Hill.

Rising from the valley in which is situated the pretty town of Sidmouth and taking a course roughly parallel to the well-known gradients of Trow Hill and Salcombe, Harcombe Hill, used for the first time in the 1928 London-Exeter, is both long and winding and has a deceptively slimy looking surface on its 1-in-5 gradient.

Few people had any difficulty in getting up, the Austin Sevens mostly making excellent ascents, although a few, such as those driven by E. D. W. Verner, H. W. Ellis, W. C. H. Pitts, T. L. Carrington, H. J. O. Ripley and W. L. Watson and the Triumph driven by L. H. Ellis came to a standstill. Several of these handy little cars, however, such as those driven by M. E. H. Gibson, K. G. Marsh, H. S. Linfield and G. H. R. Chaplin, climbed really well. Other good ascents were made by H. Widengren, H. A. Sharp and J. Richardson, all of whom were driving Austins, that driven by Richardson being fitted with a van body. The Triumph driven by H. W. Wells, like that handled by E. H. Williams, was very good.

In the 1,100 c.c. class the first compet-

ing car was Heber-Percy's Riley Nine, which came up in good style on second gear to the steepest section, but the driver left the change to bottom so late that he only just recovered. L. F. West in a similar car adopted the same procedure, in contrast with which N. H. Keep drove his Riley in extremely good style. P. J. Urlwin-Smith's Amilcar again burst into flames on Harcombe, while G. F. M. Wright in a Frazer-Nash made a very good climb.

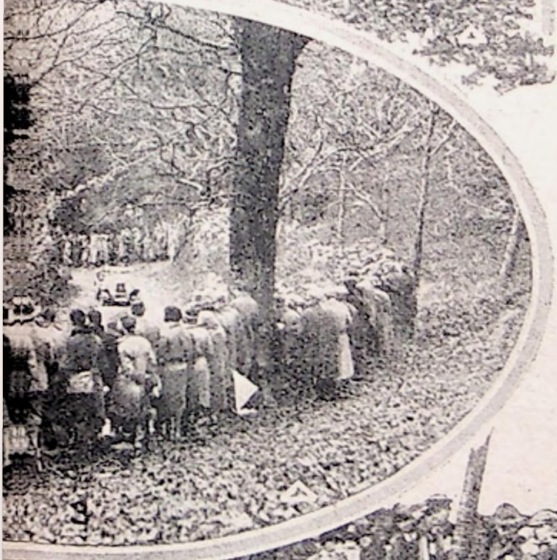
In the 1,500 c.c. class C. L. Clayton in an Alfa-Romeo made a fast and well-driven climb, while other interesting cars to come up included the T.T. Lea-Francis driven by L. Maxwell and the front-drive Alvis handled by S. C. H. Davis.

Beyond Harcombe a main road was taken into Axminster, after which followed 12 miles of winding lanes through Birdsmoor Gate and Broadwindsor to Beaminster, out of which town leads a short lane to the foot of White Sheet Hill, the venue of the new stop-and-restart-cum-acceleration test.

White Sheet Hill.

This did not prove particularly interesting from the point of view of spectators—probably on account of the fact that the surface was in very good condition, even the pouring rain of the previous night not having made it sufficiently slippery to cause anything serious in the way of wheelspin.

The actual conditions of the test were as follow:—Drivers were halted on the lower slopes of the hill and despatched singly by the dropping of a flag, their times being taken; they then had to proceed non-stop until they reached a banner bearing the terse but commanding word "stop." Under this, which was some 70 or 80 yards from the original starting point, were two specially laid aluminium lines 10 yards apart and drivers had to bring their cars to rest, making an immediate restart so soon as the marshal



6



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(1) and T. J. Medlen (Singer Junior) on Little Minterne. (3) A picturesque view of Harcombe with H. H. S. Keogh (Riley) climbing in uncertain fashion. (5) S. C. H. Davis's supercharged f.w.d. Alvis on Little Minterne. (6) Another semi-sports—this time a Swift—on Harcombe. (7) R. S. L. Boote's Alvis on Westgate.

in charge had flagged them to show that they had actually come to a dead stop. Seven seconds were allowed between starting and crossing the second line, and thereafter competitors had to cover a further 60 yards or so non-stop.

At the end of the last section was a third timekeeper, and thus the times clocked over the whole distance were recorded. For a performance to count as successful, competitors had to reach a standard corresponding to the average time taken by drivers in their own class, plus an additional allowance of 10 per cent.

Despite a very unpleasant morning, with a Scotch mist hanging over the leafless trees at the side of the road, quite a good muster of spectators was lined up when the first cyclecar driver—D. S. C. Macaskie (Morgan)—arrived on the scene. He was unlucky, however, and came to a standstill in the first section—a performance which made the crowd think they were in for the spectacle of a large number of car failures. This impression, however, was dispelled a little later when H. C. Harris, in another Morgan, did everything just as it should be done.

There were, however, two other failures amongst the Morgans, whilst T. E. A. Johnson unfortunately misunderstood the signal, or else could not see the white lines clearly—they were rather obscured by mud at this time—and stopped too soon.

The four-wheelers were headed by George H. Strong in an Austin Seven, of which, as usual, there was quite a fleet. This driver caused quite a lot of amusement by leaning out of his car and pretending to whip it as he engaged the clutch in the stop-and-restart test; barring the fact that it was a little tardy getting under way, however, the whipping was entirely unjustified. Of the other Austins that followed the majority behaved well, one of the best being that of A. P. McGowan. Of the Triumphs, one driven by H. W. Wells was really first class, but another failed. A new Singer Sports model in the hands of T. J. Medlen made a particularly favourable impression.

Playing for Safety.

Drivers in the 1,100 c.c. class and, for the matter of that, the 1,500 class, too, found practically no difficulty in fulfilling the starting and stopping conditions, and the performances therefore were not especially exciting, particularly as most drivers appeared to be playing for safety rather than being intent on impressing the spectators.

In the former class a noteworthy feature was the consistently good performance of various Riley Nine models; whilst H. J. Lovatt, Jr., in a Jowett, had evidently proved an apt pupil of his father and made a very good show indeed.

G. F. M. Wright piloted his curious old Frazer-Nash-J.A.P. through the test with many bangs and a good deal of spluttering—or so it seemed after the quiet ascents of the other more modern cars—but was quite successful.

In the 1½-litre class it is really difficult to select any performance as being outstandingly good, for the general standard was fairly high. Drivers whom we noted especially, however, were: J. N. Goodwyn (Swift sports),

A34

R. H. Penny (Alvis), J. Torrome (Standard Nine), W. d'A. Tremlett (Lea-Francis), M. W. B. May (Ceirano) and R. L. Bowes (Frazer-Nash).

The main road into Evershot from the summit of White Sheet led up to Batcombe Ridge, and then followed a few miles of quite "colonial" going to Up Cerne and Minterne Cross, which marks the foot of Little Minterne.

Little Minterne Hill could not possibly have been described as difficult—especially for the four-wheelers. The first motorcyclist found it a long, gradually ascending third-class road running through a cutting up the side of the chalk hill and possessing a somewhat greasy and rutted surface; but when a host of two and three-wheelers had hammered it for nearly two hours it presented quite a different appearance to the car men. The ruts had all gone and the chalk mud had dried off, leaving quite a solid surface.

Morgans on Minterne.

The few surviving Morgans—seven of the original 14—almost without exception made light work of it, although, of course, crabbing was noticeable in all cases.

The fastest and most spectacular climb was made by L. H. Creed (1,096 c.c. Morgan-Blackburne), but as he was without a passenger he is presumably out of the running. H. C. Harris (1,096 c.c. Morgan) took it in his stride and, incidentally, gave a neat exhibition of cornering round the abrupt right-hand turn which terminated the section. R. D. Smith

was made by R. Reffell's Riley—the driver affecting a perfect change just at the right moment.

Of the 1,500 c.c. class by far the most outstanding effort was that of C. L. Clayton. His 1,487 c.c. Alfa-Romeo surged up with swift and noiseless ease, making absolutely no bones about it. H. J. Aldington (Frazer-Nash) was also fast, while S. C. H. Davis (Alvis) had the effect of a fast climb spoilt by a little too much noise. J. Torrome (1,287 c.c. Standard) made a very good show.

After Little Minterne only 20 odd miles remained, and these were over fairly easy secondary roads through Pullham and Sturminster Newton, where the final check before the finish was taken.

Half a mile from the finish at the Market Place, Shaftesbury, there was quite a steep little hill with a left-hand bend in it, and this was observed—not officially, but by a large crowd of spectators. The usual formalities having been completed one and all repaired to the Grosvenor Hotel. This year's Exeter was one of the stiffest on record, and those who have been successful in earning an award may look upon it as having been really well deserved.

Non-starters and Non-finishers.

The following did not start:—

Three-wheeled Cyclecars: 183, G. H. Marshall (Morgan); Cars not exceeding 850 c.c.: 211, M. J. Creswell (Austin); Cars not exceeding 1,100 c.c.: 224, B. J. Macassey (Riley); 227, E. H. Buckingham (Sénéchal); 234, M. J. E. Morgan (Amilcar); 245, J. H. Robertson (Gwynne); 247, W. Simpson (Riley); Cars not exceeding 1,500 c.c.: 254, J. N. Tait (Alvis); 259, G. L. Jackson (Lea-Francis);



ON THE MISTY HIGH GROUND. — H. S. Barton (Riley) and R. H. Harman (Austin Seven) on the heights near Little Minterne.

(1,075 c.c. Morgan Special) laboured up late and with one wheel up a bank for most of the distance.

Of the host of Austins the best climbs were made by K. G. Marsh, H. S. Linfield (Taylor-Austin) and J. Richardson (delivery van). W. H. Wells made a very good climb in his 832 c.c. Triumph.

The only failure amongst the cars was registered by H. Heber-Percy, whose 1,087 c.c. Riley came to a standstill on the steepest portion. G. F. M. Wright (1,100 c.c. Frazer-Nash-J.A.P.) was baulked in consequence, but he made an excellent restart.

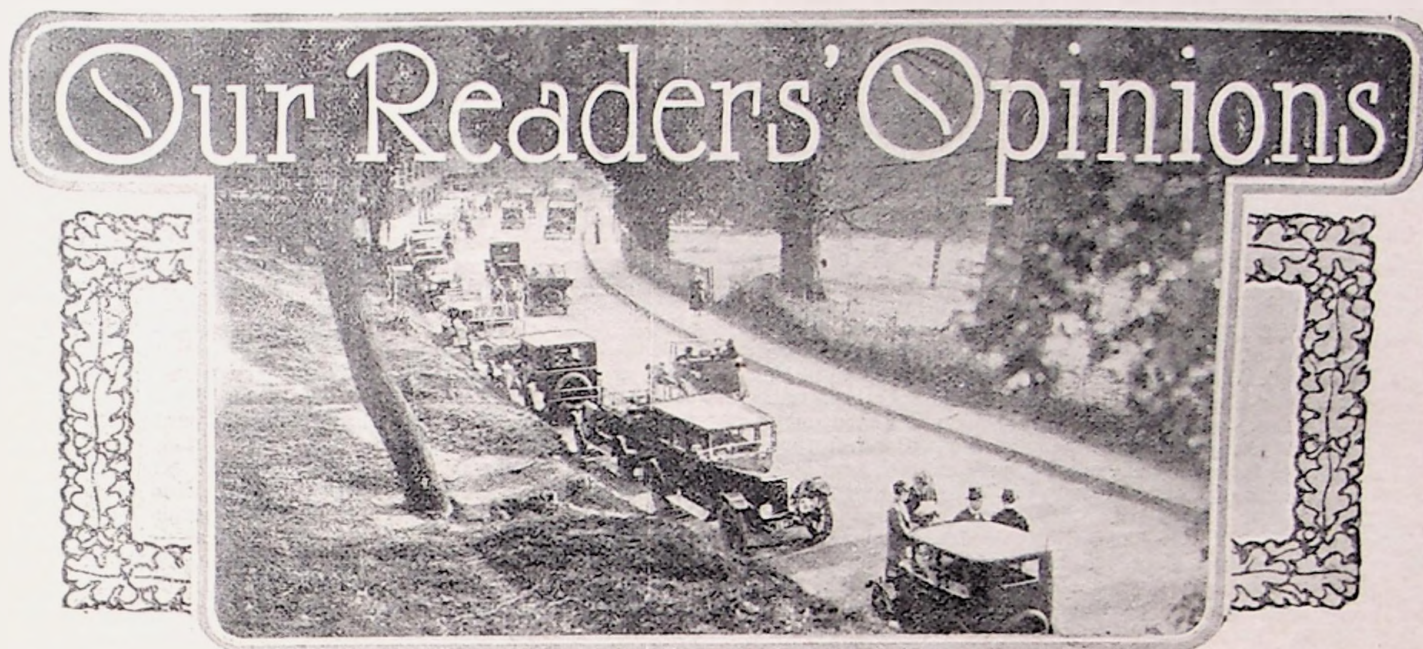
The best ascent by a 1,100 c.c. car

260, A. G. Gripper (Alvis); 293, D. W. Geidt (Lea-Francis).

The following did not check in at the finish:—

Three-wheeled Cyclecars: 181, A. B. Sparks (Morgan); 184, C. J. Turner (Morgan); 185, D. S. C. Macaskie (Morgan); 189, A. W. Couchman (Morgan); 190, T. B. Raban (Morgan); 193, H. J. Vidler (Morgan); Cars not exceeding 1,100 c.c.: 230, C. B. E. Morgan (Rover); 237, A. C. Scarff (Riley); 246, H. J. Lovatt (Jowett); 248, A. E. Haskins (Frazer-Nash); Cars not exceeding 1,500 c.c.: 284, J. W. Rickards (Frazer-Nash); 295, E. H. M. Grimdsell (Alvis); 298, D. West (Westley Special).

The list of awards gained by those who checked in at the finish will be given immediately it is available.



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

A CHANCE FOR THE B.B.C.

The National "Safety First" Association Upholds Our Suggestion.

Teaching Everybody.

I believe that the B.B.C. claims to have some millions of listeners in this country. Personally, I should say that almost every member of the community is a fairly regular

The Scope of the B.B.C.

listener, so great is the popularity of wireless. The amount of good, therefore, that the B.B.C. could do by adopting your suggestion and broadcasting "safety first" talks is incalculable. I am aware that on several occasions talks of this kind have been given, thanks to the efforts of the National "Safety First" Association, but much remains to be done.

A nightly reference to the need for walking and driving safely would not be overdoing it, but so far as schools are concerned, perhaps the cinema is the better teaching medium, although specially composed "safety first" talks could not fail to do good.

G. FORSYTH.

The Power of the Microphone—

We are glad to see that so many of your readers endorse the value of your recent suggestion as to the use of broadcast talks for encouraging adoption of "safety first"

—and the Cinema.

principles. It is suggested by one correspondent that the cinema also be used. Whilst both media are being employed by us at present, the secret of success lies in your own suggestion of "little and often." Several wireless talks have already been made from London and other stations, and short extracts from the contents of the pamphlet, which we give away with licences, have been broadcast from time to time. As this pamphlet is compiled, rewritten and brought up to date each year, with the help of the Royal Automobile Club and the Automobile Association, and its contents are approved for issue by the Ministry of Transport, it possesses the necessary authoritative backing which your correspondents naturally claim as an essential.

As soon as your leader appeared we approached the B.B.C. to see whether they could do more, on the lines you suggested, than they are doing at present.

So far as cinema propaganda is concerned, we have had

invaluable help from many theatres and several copies of our films have been continuously on show throughout the country. In some theatres, when the film was shown, a two-minute talk from the stage was also given. Only last month several thousand schoolchildren at Folkestone and, a week later, another huge gathering at Eastbourne, attended a special "safety first" matinée, when our film was shown, a talk given and leaflets handed round.

Your correspondent, Mr. Allen Burt, is correct in his belief that "safety first" is now being taught in practically every school. Besides the use of our posters and literature many of our branches organize an annual safety-first essay competition in the schools. Over 200,000 children compete in London, where H.R.H. Princess Mary recently presented the awards. I would assure him that it has had considerable effect. In London in 1927 there were fewer children killed in the streets than in 1918, although there were more than twice as many fatalities to adults in 1927 as compared with 1918.

J. A. A. PICKARD, General Secretary,
National "Safety First" Association (Inc.),
119, Victoria Street, London, S.W.1.

Wireless and "Safety First."

Towards the close of 1928 you made, in a leading article, the very excellent suggestion that regular use be made of wireless to broadcast "safety first" propaganda. I was very glad to see that readers fully approved of the idea, and, certainly, one could hardly conceive a better way of educating all members of the public in the simple art of looking after themselves when abroad upon their lawful occasions.

1929 Hopes.

Rome was not built in a day, so we can hardly be surprised that, as yet, the B.B.C. has taken no particular action in the matter. On New Year's Eve, however, the announcement was broadcast that "safety first" pamphlets are being given away with driving licences. That was a good ending for the old year. Let us hope that during 1929 much greater use will be made of wireless for broadcasting "safety first" propaganda.

E. EMMS.

OUR READERS' OPINIONS (contd.)

Hill-climbs of the Past.

May I congratulate you on your leading article in *The Light Car and Cyclecar* of December 28th. Why has no one taken up long ago the question of reviving hill-climbs? It is an extraordinary thing but no form of motor racing in England has quite the thrill of the old hill-climbs. As a real enthusiast may I say how keen the public were to follow these events all over the country? I know of many motorists who preferred spending their summer holidays visiting the various important events such as Shelsley Walsh, Spread Eagle and Holme Moss, and staying in the hotels at the local towns where most of the competitors stayed. What enjoyable parties those used to be; all the competitors created such a pleasant and sporting atmosphere—far more so than in any other form of motor racing.

Really Sporting Events.

I am sure there are many people who will never forget the wonderful feats on various hills, such as Raymond Mays' brilliant ascents of Holme Moss in his Vauxhall and Bugatti, and his narrow escape when his throttle jammed on the latter car; H. W. Cook's thrill when his car jumped the bank at Caerphilly; Capt. Frazer Nash's marvellous escape at Shelsley when he pushed the car away from the bank with his hand and so continued with buckled wheels and burst tyres. One could go on almost ad infinitum recalling the thrills of past hill-climbs.

H. BUCKLEY STUART.

Test Run Reports.

Having read with interest the various letters on "sport versus technical" articles I should like to give my opinion on the subject. I have been a reader of *The Light Car and Cyclecar* for the past three years, and should most decidedly not like to see more space given to sporting events.

Car Details.

One or two pages are quite sufficient for those articles, and as for the "dry-as-dust" technical articles, I have never seen any. I always find the test run reports of great interest, and should like to see more of them, including reports of sports cars. Information on the following points would be especially welcome. Petrol and oil consumption, capacity of petrol tank, overall length, width and height of complete cars, prices, colour schemes and so forth.

The "maintenance" articles are very useful and interesting, but more sporting events, no. I do not say that I am not interested in sporting events, but I think that articles of use and interest to the everyday motorist should be given first place.

ANOTHER SATISFIED.

* * In our present series of articles, "Light Cars of 1929 Reviewed in Detail," full details of the kind required by our correspondent are given.—Ed.

Trials and Racing Reports.

I am pleased to see that my recent letter has raised a certain amount of interest and that I am in the majority in suggesting that the bright and fully illustrated trials reports which used to be such a popular feature of *The Light Car and Cyclecar* in the past are very much missed and would be welcomed again. Mr. C. A. Potts is correct, they *did* tend to "keep things going" amongst a very large number of regular readers, club members, competitors, and their friends. When I wrote I spoke for a very large majority of my own personal friends and acquaintances who share my views, but who are not quite so "thick-skinned" as myself about expressing them in print and facing the counterblasts of unkind people like "Satisfied," who, in his haste to expose the absurdity of my rather timidly put suggestion, saddles me with "admitting that I buy the paper only to see my photo and a wordy account of my doings!"

I am afraid that I must blushingly admit that one would rather feel a glow of pride were one's homely features suddenly to spring to light in your columns, but in my case it is very unlikely. The remarks which apply to me usually

are "— failed in the restart on so-and-so hill!" or something of a similar nature, so "Satisfied" need not fear that my vanity is over-flattered.

My letter read, "Let us see and hear what our friends are doing," and in proof of my bona fides I signed my name; it is easy enough to make criticisms behind a pseudonym. If "Satisfied" were to use his own name those of us who are interested could see how much weight could be attached to his (or her!) remarks.

In conclusion, what I find interesting are trials and racing reports, owners' hints on tuning, chatty touring articles, the correspondence columns (!), "Rich Mixture," and motoring "news" generally. GEO. H. R. CHAPLIN.

Reliability Trials and—

As a regular reader may I be permitted to reply to our friends "Satisfied" and Mr. Chaplin on the subjects they have raised in their letters published recently in these columns? To my mind, the most

—Their Influence popular and successful paper is that on Design.

which caters for every line of thought in car design, production and performance, and this is especially true of *The Light Car and Cyclecar*. I think "Satisfied" is wrong when he says competitions are of no interest, because the high state of perfection of the motorcar to-day is due to the experience gained in racing and in reliability trials in the past. Of course, the driver of any car which puts up an outstanding performance comes in for a little credit, although I am much more interested in the performance of the car. In the days of the pioneers of motoring the grit and determination of drivers like Mr. S. F. Edgo and Col. Jarrott were undoubtedly the greatest factors, but this hardly applies in present-day motoring, because cars are so easy to control.

A. J. MOLLART.

Unsportsmanlike Driving.

I quite agree with your correspondent, "J.G.," that comfort and smooth running are often sacrificed for sheer speed, although speed is the only way of judging the performance of one car in order to compare it with that of another; but I hardly thought that there were such unsportsmanlike motorists who would be unwilling to draw over to their proper side to allow another to pass. Even if "J.G." likes always driving at 15 m.p.h. there are others, perhaps doctors who are rushing to a patient, or perhaps people who enjoy the thrill of speed, who have just the same right to the road as "J.G.," and he has no right to hinder them, perhaps making them pass him, in desperation, at a dangerous place. I am afraid that he cannot be a sportsman.

SWALLOW AUSTIN.

Topping-up Accumulators—

With regard to the paragraph which appeared in "Rich Mixture" recently referring to the difficulty of filling up accumulators without spilling the water on the top, it is a good idea to use a pipette such as is used by analytical chemists. These can be obtained from firms supplying chemical apparatus in various sizes, such as 25 c.c., 50 c.c. and 100 c.c. Personally, I use a 25 c.c. size. The cost is not very much, but it is possible to make one with a piece of glass tube, as the calibration is not important.

—By Using a Pipette.

The instrument consists of a glass tube with a bulb blown about half way down. One end is drawn off to a taper and the other left full bore. The taper end is placed in the bottle of distilled water and water drawn into the bulb by means of sucking with the mouth. If, when the bulb is full, the finger is placed over the open end, no water escapes, and the taper end is placed in the filling aperture of the battery, the finger removed from the other end and water allowed to enter the accumulator. The flow of water is stopped immediately the finger is placed on the open end.

M. W. DANKS.

THE Light Car
AND Cyclecar

THE LATEST PHASE IN MOTORING—FREE WHEELS.

Our next issue will be a Free Wheel Number; it will contain interesting and instructive articles dealing with every aspect of the use of free wheels on cars. No up-to-date motorist can afford to be without knowledge of the subject so—

—ORDER YOUR COPY NOW.

Price 3D.

As Usual

OUR READERS' OPINIONS (contd.).

Men and Women Drivers.

In the frequent discussions as to whether men or women make the better drivers and which of the sexes has the greater mechanical ability, it is comparatively seldom that an impartial opinion can be obtained.

Defining "Good Driving." Besides this there is a very natural tendency for a motorist, of either sex, to judge driving ability by his or her own standard, to the disadvantage, usually, of other road users. I suggest, therefore, that it might be both entertaining and instructive were you to organize a competition, open to non-motorists only, offering a small prize for the best definition of "good driving," the competitors being required to give their reasons for supposing either men or women most nearly to approach the required standard.

IAN BARKWORTH.

* * What is a "non-motorist"? In these days everyone * uses motor vehicles. Other readers' views are invited.
—Ed.

Who Would be Guilty?

An interesting problem occurred to me the other day when passing through a district in which white lines are used particularly liberally. The circumstances in which my problem might arise are these: A lorry has broken down on the outside of a very sharp bend, the breakdown being one which makes it impossible to move the vehicle until assistance is obtained. Owing to its position, vehicles which should normally keep to the outside of the bend have to take to the wrong side of the road and so cross the white line.

An Interesting Road Problem. A driver coming up behind the lorry very cautiously slows down, sounds his horn and pulls over to the off side of the road to get round the obstruction. At the same time, a car coming in the opposite direction at, say, 19 m.p.h., but keeping well to its proper side of the road, crashes into it. Who is to blame? Obviously, the lorry driver cannot be considered at fault unless the breakdown were the result of his lorry not being looked after properly, whilst the driver who had pulled on to the opposite side of the road took every precaution before doing so, and could not be expected to wait until the lorry had been removed.

So far everything points to the guilty man being the driver who, although on his right side of the road and not exceeding 20 m.p.h., was taking the bend too fast to stop. Even he, however, would have an excellent argument. He could contend that his speed was such that he could have

stopped before hitting any obstruction, either travelling in his own direction or stationary, but being well on his proper side of the road, could not be expected to anticipate having to stop by reason of meeting vehicles actually approaching him.

I have puzzled my brains on this problem for quite a long time, and I cannot decide who would be held responsible for the accident if the matter went to court. Perhaps some of your readers will be able to supply the answer.

R. N. RICHARDSON.

A Drawback of Wide Doors.

In *The Light Car and Cyclecar* recently, I read that there is an objection to wide doors owing to the amount of room they require to open, which in itself is dangerous in a busy thoroughfare. It seems to me that the only and obvious solution to the swinging door as a type, is a sliding door. No doubt there are difficulties,

but with the increasing improvement of saloon cars it certainly seems to provide fresh scope for bodywork designers. Of course, it would be necessary for the front doors to slide behind the rear doors, or vice versa, and it would obviously be impossible for the front and rear doors on the same side to be open together. With the necessary elaboration a sliding door need be no more draughty than the swinging type.

SALOON.

CONDENSED CORRESPONDENCE.

A reader who has recently completed a part-exchange purchase with the Newnham Motor Company, Hammer-smith Road, London, W.6, writes in appreciation of the straightforward and generous treatment he received from this concern.

INFORMATION WANTED.

COVENTRY-PREMIER.—The loan or sale of an instruction book dealing with the 1923 o.h.v. 10 h.p. model is required.—E. Binkliffe, 2, Henley Wood Road, Brighouse, Yorks.

BAYLISS-THOMAS.—The sale or loan of a handbook dealing with the 1923 8-10 h.p. model would be appreciated.—J. Burke, 403, Chester Road, Old Trafford, Manchester.

COVENTRY-PREMIER.—The sale or loan of an instruction book dealing with 1921 models is required.—A. P. Black, "Rose Cottage," Dinerth Road, Rhos-on-Sea, Colwyn Bay.

AUSTIN SEVEN.—Information is required of experiences of successful "hotting-up," addresses of reliable concerns which undertake the work, the charge made and the results obtained.—V. H. Higgins, 160, Lathom Road, East Ham, London, E.6.

CLUB ITEMS AND SPORTING EVENTS.

THE NEW CYCLECAR CLUB.

Members of the New Cyclecar Club should note that the rendezvous for the club's New Year's party, which takes place on January 26th, has been changed from the Cromwell Hotel, Stevenage, to the Salisbury Arms Hotel, Barnet, Herts.

SURBITON M.C.

Amongst the more important events include: In the 1929 fixture list of the Surbiton Motor Club are the Grand Cup Trial on April 6th, the Maude's Team Trial on May 25th and the Barnstaple Trial on August 2nd and 3rd. Dates have not yet been settled for Brooklands events, but the club hopes to hold its usual meetings.

LEICESTER AND DISTRICT M.C.

The annual general meeting of the Leicester Motor Club takes place at the club headquarters, the Royal Hotel, at 8 p.m. on Friday, February 8th. With the exception of Messrs. Cox, Martin and Payne all officers retire, but are eligible for re-election. Members should note that all nominations must be in the hands of the hon. secretary, Mr. C. A. Coppack, 48, Evington Park Road, Leicester, at least three days before the meeting.

CRANFORD AND D. M.C. AND L.C.C.

Mr. Graham Walker, the well-known T.T. rider, was the guest of honour at the recent annual dinner of the Cranford and District Motor Car and Light Car Club held at the Berkeley Arms Hotel, Cranford. In the absence of Mr. F. Longman, Mr. Graham Walker took the chair and also presented awards won during the past season. The evening was wound up with humorous songs and dancing. Members should note that the annual general meeting is fixed for Wednesday next, January 9th.

FORTHCOMING EVENTS.

- | | |
|---------------|---|
| January 4. | Combined Motor Clubs' Fourth Annual Charity Fancy-dress Ball. |
| January 5. | Kent and Sussex L.C.C. Annual General Meeting. |
| January 5-12. | New York Show. |
| January 6. | London M.C. Run to Radlett. |
| January 8. | Sunbeam M.C.C. Annual General Meeting. |
| January 9. | Cranford and District M.C. and L.C.C. Annual General Meeting. |
| January 10. | London M.C. Social Evening. |
| January 10. | Carshalton M.C.C. Annual Dinner and Dance. |
| January 11. | Sunbeam M.C.C. Annual Dinner. |
| January 11. | Essex M.C. Farewell Dinner and Dance. |
| January 13. | London M.C. Run to Swallowfield. |
| January 14. | Civil Service M.C.C. Annual Dinner and Dance. |
| January 16. | North West London M.C. Annual Dinner. |
| January 16. | London M.C. Annual General Meeting. |

LONDON MOTOR CLUB.

An extra afternoon's run has been added to the January fixture list of the London Motor Club, this event being a trip to Radlett, where tea will be taken at the Red Lion Hotel. The day fixed is Sunday next, January 6th, and the start will be from Marble Arch at 2 p.m. Members are reminded that the annual general meeting will take place on Wednesday, January 16th, at the "Canterbury Arms," Malvern Road, West Kilburn, London, N.W., at 7.30 p.m. The hon. secretary of the club is Mr. H. W. Platt, 38, Loudoun Road, St. John's Wood, London, N.W.8.

SWEDISH WINTER TRIAL.

Any readers intending to enter for the 15th annual trial organized by the Swedish Royal Automobile Club, which takes place on February 9th and 10th, should note that entries close at the single fees on January 9th and at double fees on January 26th. The course, which is from Gothenburg to Stockholm, is of a sporting nature and comprises 625 miles, including every type of road surface and gradient. At the outset competitors will be faced with narrow icebound roads abounding in sharp bends and precipitous gradients, and this will be followed by stretches of treacherous sections of slush and snow, which will keep drivers very busy.

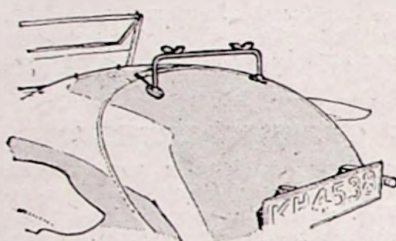
There are three classes, the first being for experts, who will have the difficult task of averaging 31 m.p.h., whilst the other classes are for owner-drivers and for people who have never previously competed in one of the club's events; in both cases the average required is 25 m.p.h. The awards will include a trophy for the most successful team of three cars.

Copies of the regulations can be obtained from the Secretary, The Royal Automobile Club, Pall Mall, London, S.W.1.

IDEAS for OWNERS

Club Badges on Morgans.

Owing to the position of the engine, owners of Aero Morgans are often puzzled when it comes to fitting an A.A. or R.A.C. badge. There is, however, one position which lends itself to carrying a badge very readily, this being the point just in front of the two inner frames of the front screens. The bolt which secures the windscreen bracket at this point can be utilized to secure a badge, it being necessary only to drill a $\frac{1}{8}$ -in. hole at the base of the latter. A badge carried in this position is very conspicuous, but is not in the way.



A neat bracket which prevents the hood of a Cup Model Austin from chafing the body.

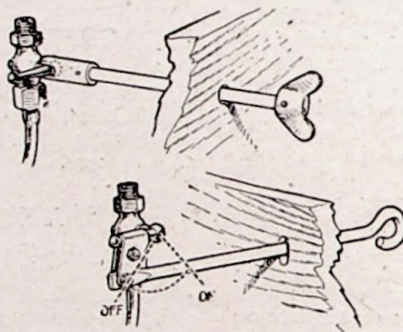
For Cup Model Austins.

If the hood of a Cup Model Austin is left in position but folded—which is often the case on showery days—its weight is liable to chafe the fabric at the point where it rests on the tail. This trouble can be remedied by fitting a bracket schemed on the lines shown in an accompanying illustration. Most garages would make up a bracket of this type for a few shillings, and if well finished and plated it will not look at all unsightly, and will also form a handle for opening the boot. As the bracket would have to be bolted to the metal panel, it should have a base of adequate size and a large plate should be fitted on the inside, so that there will be no risk of the panel being damaged.

We invite readers to send us hints gained from their own experiences 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.

Morgan Petrol Tap.

With some Morgans it is necessary to lift the bonnet to gain access to the petrol tap, and a scheme for making it possible to work the tap from the driving seat was published a few weeks ago on this page. Two further schemes have recently come to hand from readers and are shown in accompanying illustrations. In the first case, a small



Two methods for enabling a Morgan petrol tap to be operated from the driving seat.

piece of copper tubing is slotted to fit over the elbow of the tap and soldered in position, a length of rod being pushed into the other end of the tube and secured by means of a split pin. This rod passes through a hole drilled in the dash and terminates in a wing nut which is soldered in position, and enables the rod to be turned. Alternatively, the end of the rod can be bent over to form a handle.

In the second scheme, a small piece of sheet aluminium is doubled over the arm of the tap as shown, bolted in position and connected to a rod passing through the dash as before. The connection between the rod and the aluminium clamp on the tap arm must permit of free movement, and two methods may be used for making the joint. If the rod is fairly thick the end may be flattened by hammering and drilled to take the pivot bolt, or alternatively, the control rod may be made of $\frac{1}{8}$ -in. wire, the end being bent into the form of an eye.

It will be noticed that in one of these schemes the arm of the tap works backwards and forwards, whilst in the other it works across the car, as it were, but this does not matter, as it is only a matter of using a suitable washer between the tap and the tank to make the arm work in the desired plane.

A cylindrical quart oil tin can be made into a very useful funnel.



For Roadside Replenishment.

Drivers who carry a spare tin of petrol will find that a fairly good substitute for a petrol pourer can be made from a cylindrical quart oil tin. This should be cut in half and the edges turned over for strength. The tin, when inverted, then forms a funnel and the final touch can be added by soldering a circular piece of petrol gauze across the neck. A tin of this type is more handy for carrying in a car than a normal funnel, owing to its shape.



IN ANSWER TO YOUR QUERY



M.O. (Edinburgh).—The oil level in the rear axle of your 9-20 h.p. Humber should be inspected every 1,000 miles, gear oil being used if topping-up is necessary.

J.G. (Sheffield).—A faulty switch is obviously the cause of your electric horn sometimes continuing to sound a few seconds after the pressure is removed from the button. We should advise you to take it to pieces and make sure that all parts are working freely.

E.B. (Forfar).—As you state that your engine is in good condition and free from carbon, we suggest that weak valve springs are the cause of the loss of power of which you complain. The fact that you have now covered over 21,000 miles and the valve springs have not been renewed supports this theory.

A40

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 enquiries cannot be answered.

O.W. (Newport).—You do not state the make of your battery, but you will probably find details of charging rates stamped on the casing, or inside the lid.

H.W. (Stoke Newington).—If you join one of the clubs associated with the Royal Automobile Club you will obtain the advantages of associate membership of the latter body. These include free legal defence and "get-you-home" vouchers.

C.J. (Wembley).—Special tyre paint can be obtained, and this will considerably smarten the appearance of the spare wheel. Blacklead may be used as a substitute but it is not so lasting or pleasing in appearance.

E.M. (London, W.11).—To remove as much as a quarter of an inch of metal from the cylinder base flange of your engine with the object of raising the compression would be extremely unwise. Apart from the fact that this would result in a very much too high compression ratio, it would very seriously weaken the cylinder block flange and trouble would be almost sure to occur. Your best course would be to obtain a new set of pistons in which the distance from the gudgeon pins to the crowns is greater.