

THE AUTOCAR

A Journal published in the interests of the mechanically propelled road carriage.

EDITED BY H. WALTER STANER.

No. 715. Vol. XXIII.]

SATURDAY, JULY 3RD, 1909.

[PRICE 3D.

The Autocar.

(Published Weekly.)

Registered as a Newspaper for transmission in the United Kingdom.
Entered as second-class matter in the New York (N.Y.) Post Office.

Three Editions every Friday.

The THREEPENNY EDITION, printed on Art Paper.

The PENNY EDITION, printed upon thinner paper.

The FOREIGN EDITION, price 3d., printed on thin paper for transmission abroad.

Editorial Office :

COVENTRY.

Publishing Offices :

20, TUDOR STREET, LONDON, E.C., England.

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Subscription Rates :

British Isles—Home Edition, 16s.; penny (thin paper edition), 6s. 6d.

Abroad (thin paper edition), 22s. 8d. per annum.

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Notes.

New Fuels and Rumours of New Fuels.

From indications which are unmistakable it appears evident that there will be a number of petrol substitutes offered to the public before long. It should be clearly understood that our attitude towards all who are striving to produce satisfactory substitutes for petrol is one of extreme sympathy and interest, but we must at the same time warn our readers against investing capital in any new fuel companies which may be promoted unless they are assured that the fuel has a reasonable chance of success. It does not necessarily follow that promoters of companies for the manufacture and general exploiting of a new fuel are dishonest. It is quite as likely that they are merely ignorant. From what has been said in the past during

the discussions on alcohol and other home-made fuels it is evident that extreme ignorance prevails, particularly as to the coal tar products, and it is quite easy for company promoters to be deceived by specious chemists, and then in their turn to deceive the investing public.

If all we hear be true there is a strong probability of at least one new fuel being introduced in the near future, which will in deed and in truth prove a worthy successor to petrol. It will do all that petrol does, and do it better and more cheaply, but probably it will not be the only new or alleged new fuel which will be introduced, and we therefore warn our readers to be exceedingly careful and to accept no interested statements. They may rely that we shall not pronounce favourably on any substitute for petrol till we have satisfied ourselves that we are justified in doing so, and we shall certainly not condemn a fuel because we know nothing about it. New fuels are likely to be brought out hastily and a considerable amount of publicity given them before it is possible to properly investigate their claims, and in such cases we can only regard their claims as not proved, but until we have proved them we shall not speak favourably or unfavourably of these new introductions. From a company promoting point of view there is a belief that the time is ripe for the floating of fuel concerns, and we are not at all sure that this belief is not justified. This very reason makes it all the more imperative that investors should satisfy themselves that the claims are really well grounded.

As an instance of the kind of thing which is going on, we may mention a recent experience in which we were asked to participate in a trial of a new fuel. We were given no opportunity of examining the tanks or the fuel fittings on the car, but were driven a certain distance on petrol, when the tank was emptied (or supposed to be emptied) and the new fuel put in to replace it. Another measured distance was covered, and the second dose of fuel drove the car very considerably further than the first. For reasons into which we need not enter we were not satisfied, and we arranged with the persons interested in the new fuel to hold a brake horse-power test. This is some little time ago, but up to now we have heard no more of the brake test, of the new fuel, or of the people who endeavoured to persuade us to report favourably upon the demonstration drive we made. This is by no means the only experience of the sort we have had, but we mention it as illustrative of the fact that the tendency is unquestionably to make extravagant claims and to fail utterly to prove them.

It may be asked why there should be any need for a company with fairly large capital to exploit a substitute for petrol, because if it is good it will sell itself. This is perfectly true, but it must be borne in mind that whatever the substitute be, it will require a considerable organisation and a more or less costly system of distribution throughout the country, as nothing can seriously compete with petrol unless it be as easily and

as universally obtainable. It follows, therefore, that a new fuel company is not necessarily a mere company promoter's device for obtaining money, and all we wish to impress on our readers at the moment is that they should have abundant proof of the claims which are made for any new petrol substitute before they invest a halfpenny in a concern which may be proposed for its exploitation. To put the matter in a nutshell, there is no doubt that unless a petrol substitute be introduced by a very wealthy firm or individual, a company must be formed to make and distribute it, but before we invest our money in such a concern let us assure ourselves that the substitute really is a satisfactory one, and not a rediscovery of benzol or some other old friend in a new guise. New fuels are like new stars—the budding astronomers “discover” a number, only to find that they were charted before they were born. Here the analogy ceases, as new stars have no attractions for company promoters.

Private Dust Experiments.

For the past two years the Royal Automobile Club Dust Trials on Brooklands have been a valuable feature of the Club's work. They were by no means the first dust trials held by the Club, as previous investigations, some of them several years earlier, had been conducted under R.A.C. auspices both on public and private roads. However, under the best conditions, the trials prior to their being held on Brooklands were very difficult to arrange, so that direct comparisons between the behaviour of the competing cars at different speeds could be recorded. On Brooklands Track the electric pacing apparatus, the arrangements for the maintenance of an even layer of dust, and the photographic records of each trial, all combined to place the event on to a scientific basis. There appears to have been one rift in the lute, and that has been the fact that some of the manufacturers who competed and who did not gain a favourable award because their cars raised too much dust have been abstaining from the trials, and the Dust and Dustless Roads Committee therefore decided that the events should no longer be a competition or “trial,” but a series of “dust experiments.”

This, however, did not appear to satisfy some of the motor manufacturers. They still objected because they were afraid that someone might see that certain of their cars were very much worse offenders so far as dust raising was concerned than they should be. The elimination of the competitive element which would furnish a basis of comparison between the cars was not enough, as some maker might still obtain an advantage over his fellows. To pander to this desire for privacy on the part of manufacturers, it is announced by the Club this week that there will be no admission of the press or public, and no publication of the results of the trials. No doubt this unwise decision has been arrived at with the best of intentions, but we must say that we are exceedingly tired of this constant truckling to the trade by the Club. What appears to happen is this. The Club decides it will hold a certain trial or competition. The Society of Motor Manufacturers is consulted to ascertain whether it approves of the project. As a rule it does not approve, and then the Club and the Society consult together, and the Club, after removing all elements of competition from a projected trial, is graciously permitted to spend its money on the event, provided always that if any particular competitor should do badly this fact will not be too painfully apparent; and, of course, the best way of keeping failures private is to refuse to

admit the public, and to publish no results. We are exceedingly sorry to have to criticise, as we have the greatest admiration for the painstaking and useful work of the Dust Committee.

Well Meaning but Mistaken Precautions.

When we say that we think the Club has acted in perfectly good faith in this matter, much as we disagree with its deplorably weak attitude, we should explain that, apparently, its one anxiety is to persuade the makers to run their standard cars on the first day, which is confined to comparative tests or experiments (not “trials,” if you please) of makers' standard cars. The idea seems to be that if the makers' desire for privacy be respected a huge number of them will enter their standard cars, and thereby inform themselves as to how far their cars compare favourably or unfavourably with other makes. Possibly a large number of makers will enter, but we very much question it, as this shrinking from publicity by makers of dusty cars is so extreme that we do not think they will risk exhibiting their dust trails to their fellow makers, even though no one but the other participants and the handful of Club officials will be there to see.

The day following that on which the modest makers perform there will be a competition for amateurs and experimenters, the contest taking the form of an inter-club competition. We cannot understand how it is the Society has permitted the Club to hold anything so injudicious, because there is no doubt that the amateur competitors, or some of them, will go away and talk about what they have seen, and the truth may leak out. The risk is really too great, and under the circumstances we would suggest that no amateur be allowed to drive his own car, but that he should be blindfolded while near the dust track, and his car driven by one of the maker's men.

It appears to us that where the Club makes a mistake is in its intense desire to obtain entries from the manufacturers at all costs. We do not see why manufacturers need take part in the dust trials at all if they do not want to, and evidently some do not, or they would not be so terribly timid about publicity. There is no doubt that without any attempt at privacy a good many makers would send in their cars, at least as many as in former years, and those who fear publicity should be ignored. Besides that, there would be the amateurs, and if the Club were to make a point of it by whipping up a few of its members, there is no doubt that more than enough cars could be obtained for a useful series of experiments, and there would be no need to conduct them as though the results were unfit for publication.

The Autocar

THREE EDITIONS. — EVERY FRIDAY.

The Threepenny Edition.

Printed on Art Paper.

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Printed on thinner paper.

The Foreign Edition.

Printed on thin paper for circulation abroad (price 3d.)

Both the threepenny and penny editions can be obtained from all Booksellers and Newsagents. There is no difference in these editions except in the quality of the paper on which they are printed.

Useful Hints and Tips.

On Magneto Derangements. (Continued from page 895.)

II.—Simple Misfiring.

When the trouble merely consists of misfiring in one or more cylinders, even a duffer may quickly find and apply a remedy. First, discover the errant cylinder or cylinders; short-circuiting the plug terminal on to the cylinder head by laying the blade of a wood-handled screwdriver in contact with both, while the engine is running, is a simple expedient in the absence of a switchboard or switch plugs, or, if the high tension wires to the distributor have plug joints, each wire may be detached from the distributor in turn. On tracing the faulty cylinder, begin by taking out its plug, setting the points by a gauge, if to hand, or otherwise as close as they will go without actually touching; if necessary, clean the plug head thoroughly with a knife, petrol, and brush. If this do not cure, change the plug. If this do not cure, the fault will be in the wire from the distributor, provided the misfiring came on suddenly and was pronounced in character. If the miss be gradual, irregular, and only faintly discernible, the fault may lie in the segment of the distributor disc which supplies current to this particular cylinder. In this case, attention is best postponed till a repair shop is reached, as probably the metal segment has worn, or the insulation round it has worn, and the whole will need re-facing in a lathe; but it is worth while trying to clean this portion of the distributor with emery paper or rag, and, if any metallic particles are visibly embedded in the face of the circular vulcanite recess, to scrape them off, taking care not to seriously roughen the surface (else the wiper will begin to jump).

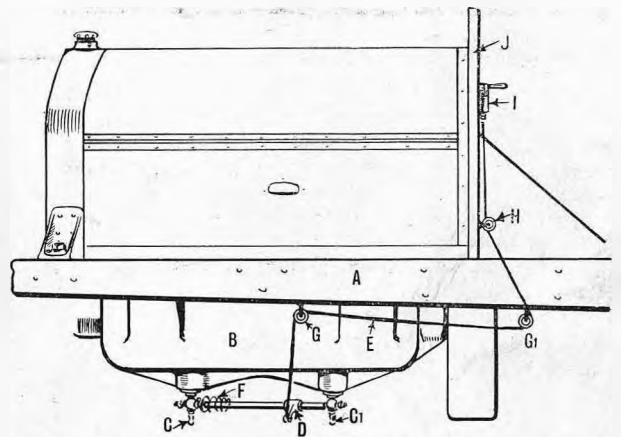
III.—Weak Running and General Loss of Power.

Sometimes no actual miss and no absence of the sparks can be discovered, and yet the entire engine is sluggish and difficult to start, also falling away rapidly on hills, and calling for a lower gear than formerly under accustomed circumstances. Before tampering with the magneto, every precaution must be taken to ensure that the fault does not really lie in the valves, carburation, etc. Where a supplementary ignition is fitted, this is easily tested, as the engine will behave properly on the accumulator system. When the fault is traced to the magneto, without any possible room for doubt, it is quite an inexpensive matter to return it to the makers. They will clean it, re-face all brushes and contacts, renew all weakened springs, etc., for a few shillings. But if it be preferred to tackle the matter at home, wear and resistance are the two factors to be dealt with. Wear is to be looked for chiefly in the contact breaker (*vide* under I.), and the springs here may have lost "set." Resistance will be found wherever dirt or oil or grease exist within the magneto, particularly beneath small screwed-on parts, such as insulating washers or along shafts, or beneath brushes, and also wherever a carbon brush has been allowed to wear hard and scaly on the tip. Demagnetisation of the horseshoes should never occur under two or three years of running. This job, in any case, entails the dismantling of the entire magneto, and whoever does the work must not forget to lay a piece of iron—a couple of spanners will serve—across the horseshoe if they are detached first, or between them if the armature is taken out before the horseshoes are dismantled. On the whole, it is probably advisable to return the machine to the makers in all cases of general debility, as they will then test the entire mechanism, remedy any

unsuspected derangement in the condenser, etc., and return it absolutely as good as new. However, where economy is desired, the work can be done at home; the writer has run a magneto for nearly 50,000 miles without the makers ever seeing it, and it is now as efficient as when it first left their factory.

A Neat Drain Tap Fitting.

A private owner of a 1908 14 h.p. Siddeley recently showed us a very neat means of operating the crank case drain taps from the dashboard. This particular model has a separate tap for each half of the crank case. The tap levers were first removed, and then the taps were turned so that their spigots should be in line with one another along the longitudinal axis of the engine. A piece of copper tube was then procured the exact length between



A, frame
 B, oil sump
 C, C1, oil taps
 D, operating lever
 E, wire for dash to D
 F, controlling spring
 G, G1, H, guide pulleys for E
 I, lever
 J, dash

the two taps and divided at D. The two outer extremities of the pieces of tube were then sweated on to the tap spindles, and at the point D was attached to the arm D. To keep the taps permanently closed a strong spring F was employed. Two ordinary guide pulleys G and G1, obtainable from most ironmongers, were then attached to the side member A of the chassis, and a vertical pulley (not shown) and another vertical pulley H to act as a guide. A wire was then run from the arm H through the pulleys and attached to the control lever I. This lever runs through a slotted tube attached to the dashboard J. A short pin is fixed in the lever which fits in the slot, so that to open the taps and hold them open the lever is pulled up and turned round. When it is desired to close them, if the lever be turned round the cross pin drops down the slot, and the spring closes the taps. The device is very nicely carried out, and saves the owner's time, temper, and clothes, as it is difficult under ordinary conditions to reach these taps without getting smeared with oil and dirt.

"USEFUL HINTS AND TIPS FOR AUTOMOBILISTS."—Under this title "Useful Hints and Tips" have been reprinted from *The Autocar* in booklet form. The third edition now on sale has been thoroughly revised and brought up to date. The book can be obtained from *The Autocar* Offices, 20, Tudor Street, London, E.C., price 2s. 6d.; post paid, 2s. 10d.

The Saltburn Speed Trials.

Organised and Successfully Carried Out by the Yorkshire A.C.

IT was quite a pleasant surprise when Saturday morning broke fine at Saltburn. For two or three days previously rain had fallen almost continuously, and doubts were expressed as to its clearing up in time for the speed trials. Fortunately, it did so more or less, though there were one or two showers towards the end of the proceedings. However, neither this nor the cold wind which prevailed appeared to damp the enthusiasm of the spectators and competitors who assembled in large numbers.

The occasion was the annual speed trials held on the splendid sands between Marske and Saltburn by the Yorkshire Automobile Club, and the whole event passed off with commendable promptitude, upon which Mr. C. P. Wilson, the energetic hon. secretary, and his willing assistants are to be heartily congratulated. The Club was greatly assisted by a large force of police, who patrolled the course and prevented the too eager spectators from endangering their lives and those of the competitors.

Competing cars were timed over a measured kilometre, and with the exception of those events devoted to racing cars all were from a standing start. The start was at the Marske end, cars racing towards Saltburn. There was a strong N.E. wind blowing nearly straight in from the sea the whole time, but, if anything, it was slightly in the driver's favour.

Where there were more than four cars entered for any one event heats were arranged, the heat winners meeting in the final. The particulars following give the final results in each case.

Of course, chief interest centred in the events devoted to racing cars, and, although this section was not well represented, some fine speeds were witnessed. Messrs. Lee Guinness on the 200 h.p. eight-cylinder Darracq covered the flying kilometre at 120.26 m.p.h. This was the best speed out of four attempts, ranging from 117 m.p.h. upwards. The Darracq was out to beat its record of 121.6 m.p.h. established on the same course last year, but, unfortunately, it did not succeed in doing so, although it was not far off the mark. The car was steered by Mr. A. Lee Guinness, who, as usual, was assisted by his brother. It

appears that it takes two men to drive the Darracq—one to steer, and the other to open the throttle, etc.

There were one or two exciting finishes amongst the touring cars, especially in those events where the Humber and Vauxhall cars (both fresh from the Irish and Scottish Trials) met. These two cars were very evenly matched, and the way they hung on to each other down the course excited great interest. We were interested to see competing, and competing well, too, as the results will show, a car which ran in the famous 2,000 Miles Trial of last year. This was a 15 h.p. Talbot, which was purchased by Dr. J. L. Kirk after last year's trial. Since last year Dr. Kirk has driven the car some 4,000 or 5,000 miles, mainly on the Continent, and from the manner in which it performed on Saturday there would appear to be very little the matter with it now.

Closed Events.

EVENT A.—A closed competition for single-cylinder touring cars for members not connected with the motor trade.

1. F. W. Roberts (8 h.p. Rover) ... $4\frac{1}{2} \times 5$ in.
2. J. Watson (6 h.p. De Dion) ... $3\frac{7}{8} \times 4\frac{7}{8}$ in.

Winner's speed, 22.14 m.p.h. Maximum rating, 11 h.p. Run in one heat.

EVENT B.—A closed competition for one, two, and three-cylinder touring cars for members who are not connected with the motor trade.

1. T. I. Mitchell (12 h.p. Calthorpe) $2\frac{1}{2} \times 4\frac{1}{2}$ in.
2. H. E. Calton (12 h.p. De Dion) ... $3 \times 3\frac{1}{2}$ in.

Maximum rating, 11 h.p. Run in one heat.

EVENT C.—A closed competition for four and six-cylinder touring cars for members not connected with the motor trade.

1. W. Bayliss (14-18 h.p. Sunbeam) $3\frac{3}{4} \times 5\frac{5}{8}$ in.
2. Dr. J. L. Kirk (15 h.p. Talbot) ... $3\frac{7}{8} \times 4\frac{7}{8}$ in.

Winner's speed, 39.8 m.p.h. Maximum rating, 31 h.p. Run in two heats.

EVENT D.—Closed competition for four or six-cylinder touring cars for members who are not connected with the motor trade. Maximum rating, over 31 h.p. Run in one heat.

1. W. Blamires (40-50 h.p. Rolls-Royce) ... $4\frac{1}{2} \times 4\frac{1}{2}$ 6 cyls.
2. F. A. Bolton (57 h.p. Daimler) ... $4\frac{3}{4} \times 5\frac{1}{2}$ 6 cyls.

Winner's speed, 40.96 m.p.h.

EVENT E.—Closed competition for single or double-cylinder touring cars for members whether connected with the motor trade or not. Maximum rating, over 11 h.p. Run in one heat.

1. W. M. Letts (A. Bray, 10 h.p. Sizaire) ... $3\frac{1}{2} \times 10$ 1 cyl.
2. J. W. Stocks (8 h.p. De Dion) $3\frac{1}{8} \times 6\frac{1}{4}$ 1 cyl.

Winner's speed, 33-38 m.p.h.

EVENT F.—Closed competition for one, two, three, or four-cylinder touring cars for members whether connected with the trade or not. Maximum rating, over 17 h.p. Run in two heats.

1. W. M. Letts (A. Bray, 10 h.p. Sizaire) ... $3\frac{1}{2} \times 10$ 1 cyl.
2. G. Netherwood (10 h.p. Delage) ... $2\frac{1}{2} \times 4\frac{1}{2}$ 4 cyls.

Winner's speed, 32.41 m.p.h.

EVENT G.—A closed competition for four or six-cylinder touring cars for members whether connected with the trade or not. Maximum rating, over 31 h.p. Run in three heats. First prize, "The Yorkshire Trophy."

1. P. C. Kidner (24 h.p. Vauxhall) ... $3\frac{3}{8} \times 5\frac{3}{4}$ in.
2. Rowland Winn (G. A. Phillips, 16 h.p. Humber) ... $3\frac{1}{2} \times 5\frac{1}{2}$ in.

Winner's speed, 44.56 m.p.h. A very close race, won by Mr. Kidner in good style by only a few yards.

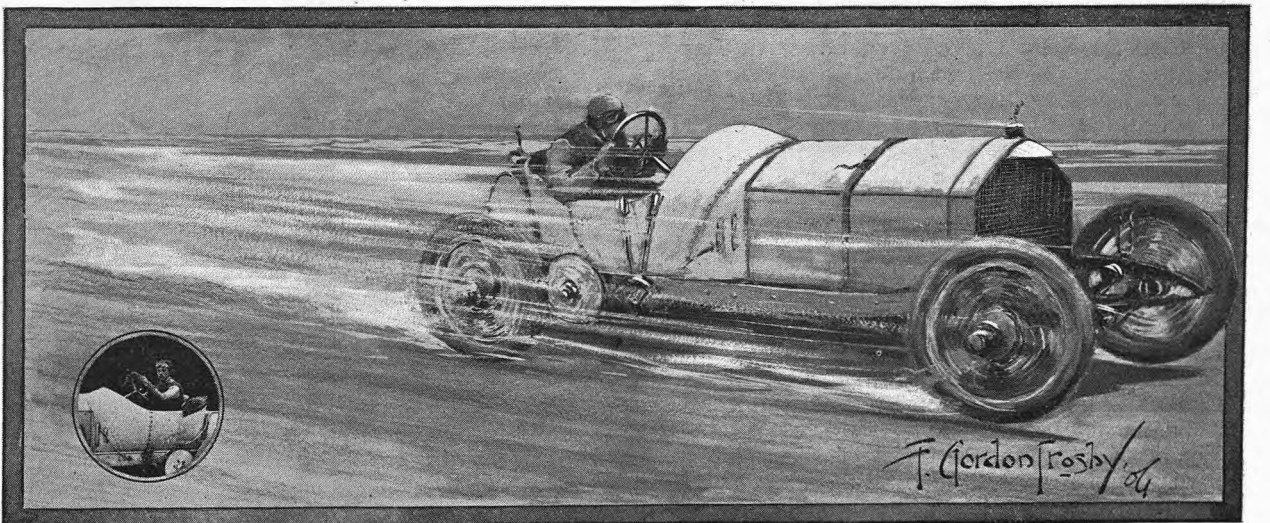
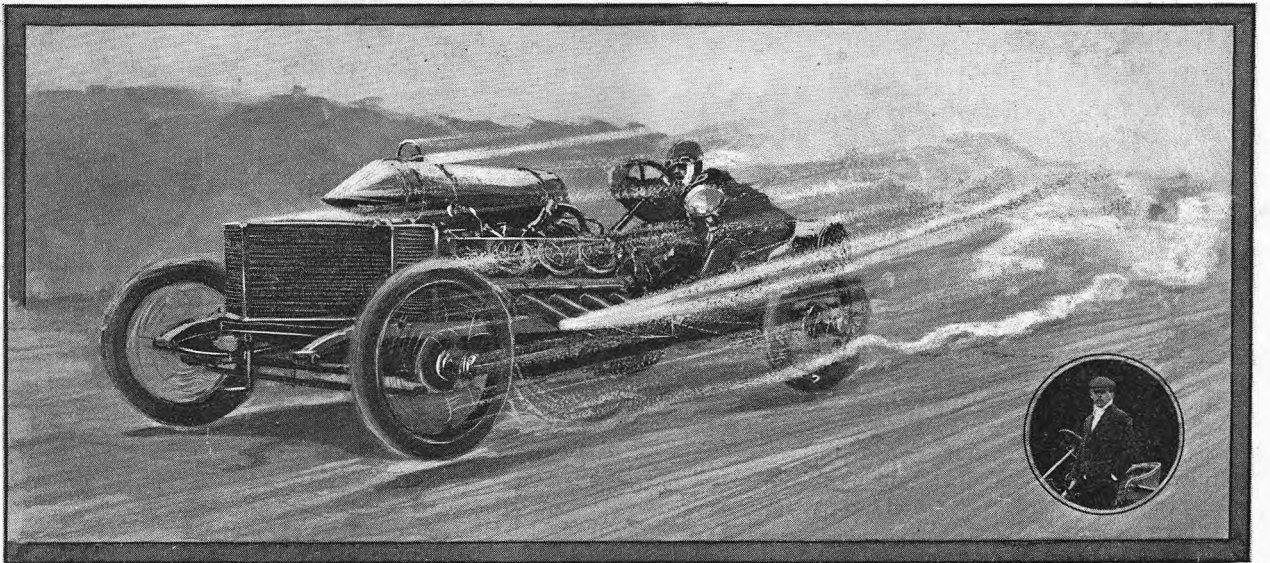
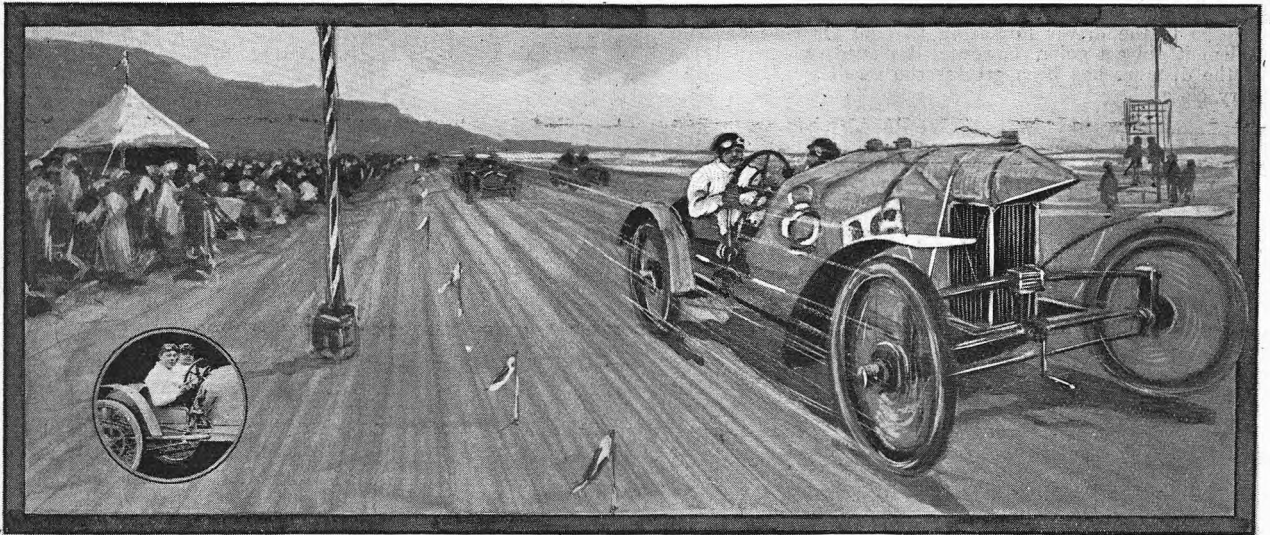
EVENT H.—A closed competition for four or six-cylinder touring cars for members whether connected with the trade or not. Maximum rating, over 31 h.p. Run in one heat.

1. F. Scott (38 h.p. Minerva) ... $4\frac{1}{2} \times 5\frac{1}{2}$ in. 4 cyls.
2. F. A. Bolton (57 h.p. Daimler) $4\frac{3}{4} \times 5\frac{1}{2}$ in. 6 cyls.



The Yorkshire A.C. officials at the Saltburn Speed Trials on the steps of the Alexandra Hotel, Saltburn.

The Saltburn Speed Trials.



The Sizaire-Naudin at the finish.
The 200 h.p. Darracq at 120 miles an hour.
Mr. A. W. Tate on the Grand Prix Mercedes.

Winner's speed, 41.11 m.p.h. In this race both the Minerva and Daimler engines were of the new Knight type. The Daimler was slow in getting away, which appeared to be due to the driver forgetting to take his side brake off. When it did get going, however, it moved very rapidly, and if the distance had been greater the result would have been very close.

Open Events.

EVENT I.—For single or double cylinder touring cars. Maximum rating, 11 h.p. Run in one heat.

1. W. M. Letts (A. Bray, 10 h.p. Sizaire) ... $3\frac{1}{8} \times 10$ in.
2. J. W. Stocks (8 h.p. De Dion) ... $3\frac{1}{8} \times 6\frac{1}{2}$ in.

Winner's speed, 33.08 m.p.h.

EVENT J.—For one, two, three, or four-cylinder touring cars. Maximum rating, 11 h.p. Run in one heat.

1. W. M. Letts (A. Bray, 10 h.p. Sizaire) ... $3\frac{1}{8} \times 10$ in. 1 cyl.
2. T. Mitchell (12 h.p. Calthorpe) ... $2\frac{1}{8} \times 4\frac{1}{2}$ in. 4 cys.

Winner's speed, 37.65 m.p.h.

EVENT K.—For four or six-cylinder touring cars.

1. Dr. J. L. Kirk (J. Hedge, 15 h.p. Talbot) ... $3\frac{9}{16} \times 4\frac{5}{8}$ in.
2. R. M. Wright (12 h.p. F.L.) ... $3\frac{9}{16} \times 3\frac{1}{2}$ in.

Winner's speed, 40.08 m.p.h. Maximum rating, 26 h.p. Run in two heats.

EVENT L.—For four or six-cylinder touring cars.

1. P. C. Kidner (24 h.p. Vauxhall) ... $3\frac{3}{8} \times 5\frac{1}{2}$ in.
2. H. B. Saunders (G. A. Phillips, 16 h.p. Humber) ... $3\frac{1}{8} \times 5\frac{1}{2}$ in.

Winner's speed, 44.74 m.p.h. Maximum rating, 31 h.p. Run in one heat. Another very close race.

EVENT M.—For four or six-cylinder touring cars.

1. F. Scott (38 h.p. Minerva) ... $4\frac{1}{2} \times 5\frac{1}{2}$ in.
2. J. H. Haggis (F. C. Jenkins, 40 h.p. Mercedes) ... $4\frac{1}{8} \times 5\frac{1}{2}$ in.

Winner's speed, 54 m.p.h. Rating, over 31 h.p. Run in one heat.

EVENT N.—For one, two, four, or six-cylinder touring cars up to 27 h.p. rating. Run in two heats.

1. P. C. Kidner (24 h.p. Vauxhall) ... $3\frac{3}{8} \times 5\frac{1}{2}$ in.
2. R. Winn (20 h.p. Ford) ... $3\frac{1}{4} \times 4$ in.

Winner's speed, 47.39 m.p.h.

EVENT O.—For one, two, four, or six-cylinder cars. Rating, 27 to 40 h.p. In one heat.

G. C. Colmore (25 h.p. Darracq), $3\frac{1}{8} \times 6\frac{1}{2}$ in., had a walk over. Speed, 41.84 m.p.h.

EVENT P.—For one, two, four, or six-cylinder cars. Rating, over 40 h.p. Run in one heat.

W. A. Foster (28-40 h.p. S.P.A.) ... $5\frac{1}{2} \times 5\frac{1}{4}$ in.

Winner's speed, 45.28 m.p.h.

EVENT R.—For racing cars of the 4in. type. Three runs from a standing start.

G. C. Colmore (4in. Darracq). Speeds—1 = 50.15 m.p.h.; 2 = 67.37; 3 = 65.79.

EVENT S.—For racing cars, Grand Prix type. Four runs from a flying start.

A. W. Tate (Mercedes), 1, 92.43 m.p.h.; 2, 92.43 m.p.h.; 3, 93.20 m.p.h.; 4, 94.78 m.p.h. Average speed = 93.21 m.p.h.

EVENT T.—For racing cars of any weight. Four runs from a flying start.

A. Lee Guinness (200 h.p. eight-cylinder Darracq). Speeds—1 = 111.65 m.p.h.; 2 = 117.73; 3 = 120.25; 4 = 117.73. Average speed = 118.09 m.p.h.

Scottish Reliability Trial.

The Official Awards.

Efficiency gold medals in each class have been awarded as follows:

CLASS A.—10 h.p. Riley, 989.9 marks.

CLASS B.—12-18 h.p. Riley, 976.9 marks.

CLASS C.—10-12 h.p. Humber, 995.9 marks.

CLASS D.—14-16 h.p. Argyll, 985.9 marks.

CLASS E.—16 h.p. Humber, 994.9 marks.

CLASS F.—24 h.p. Vauxhall, 995.1 marks.

CLASS G.—30 h.p. Adler, 976.6 marks.

In each of Classes D and E, in consideration of the substantial equality of the second cars, silver medals have been awarded as under:

CLASS D.—15 h.p. Star, 985.5 marks.

CLASS E.—20 h.p. Vauxhall, 994.3 marks.

The total possible marks in each case is 1,000.

In Class H there was only one competitor completed the trial, and the committee, on account of the number of marks lost for repair of detachable wheels, have not seen their way to award a medal in this class.

Bronze medals, awarded in each class to the car gaining the highest number of marks for hill-climbing, have been awarded as follows:

CLASS A.—10 h.p. Riley, 50 marks.

CLASS B.—12-18 h.p. Riley, 50 marks.

CLASS C.—12 h.p. Star, 50 marks.

CLASS D.—15 h.p. Star, 49.1 marks.

CLASS E.—16 h.p. Humber, 47.7 marks.

CLASS F.—24 h.p. Vauxhall, 47.1 marks.

CLASS G.—38 h.p. Minerva, 50 marks.

CLASS H.—50 h.p. Ariel (only competitor).

Total possible, 50.

The Scottish Cup for the vehicle showing the lowest fuel consumption per ton-mile over the whole trial has been gained by the 38 h.p. Minerva, with a consumption of .02244 gallon per ton-mile, equal to 44.57 ton-miles per gallon of fuel. In car-miles this is approximately twenty-five miles per gallon.

The Coupe des Voiturettes.

Average Speed for Four Years.

Below will be found the times accomplished in the Coupe des Voiturettes, France, from its inception till the present date:

1906. CIRCUIT DE RAMBOUILLET.

1st, Sizaire (Sizaire-Naudin); average speed in m.p.h., 31.42.

1907. CIRCUIT DE RAMBOUILLET.

1st, Naudin (Sizaire-Naudin); average, 40.66 m.p.h.

1908. CIRCUIT DE COMPIEGNE.

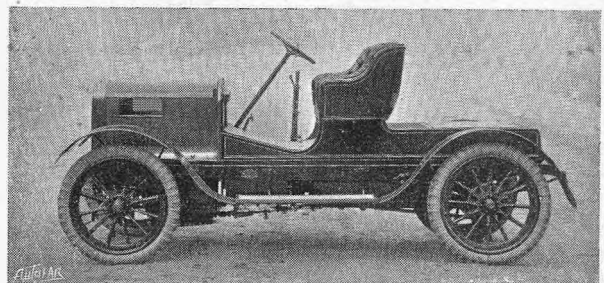
1st, Naudin (Sizaire-Naudin); average, 47.46 m.p.h.

1908. GRAND PRIX DES VOITURETTES (Circuit de Dieppe).

1st, Guyot (Delage-De Dion); average, 49.81 m.p.h.

1909. GRAND PRIX DES VOITURETTES.

1st, Giuppone (Lion-Peugeot); average 47.44 m.p.h.



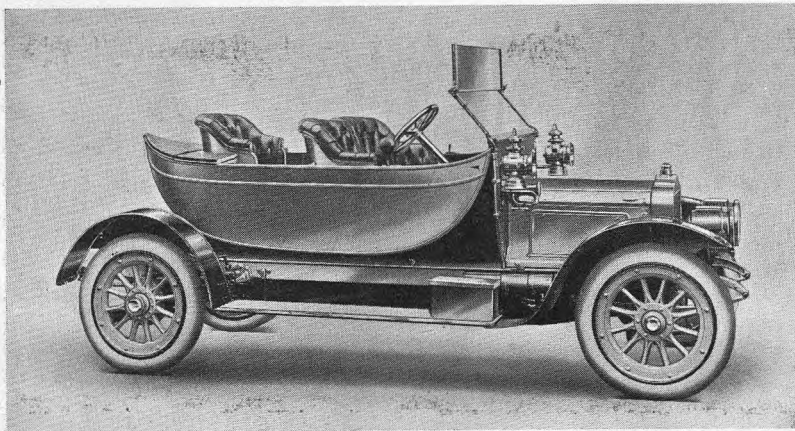
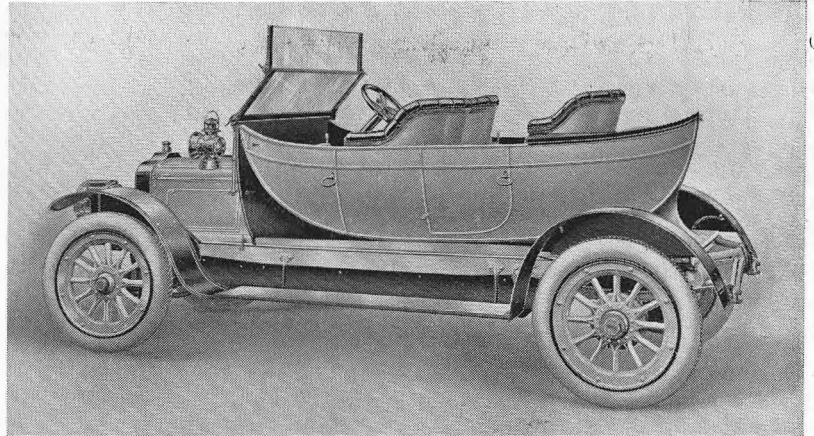
A new model Pearson-Cox steam car, one of which was recently shipped to New York. This light two-seated type has been made a standard pattern, known as the Model H, and is, we are told, in considerable demand.

The attention of the M.U. having been drawn to the fact that the only intimation given to motorists of the imposition of a ten-mile speed limit at Carrickfergus, Ireland, is by means of printed notices affixed to hoardings in the town, the Local Government Board for Ireland is being communicated with on the matter.

Body Design and Construction

A True Boat Body.

THE boat shaped body to which we see many references just now appears to mean anything from a flush-sided body to quite an ordinary rotund. The only true boat body we can call to mind is one that was built by Messrs. J. Rothschild et Fils, Ltd., of 45, Horseferry Road, S.W., for the Earl of Shrewsbury and Talbot early last year. This was fitted to a 35 h.p. Talbot, and its original appearance will be gathered from the two illustrations we give on this page. The body is exceedingly interesting, as there are many features in it which are common to it and the more recently introduced

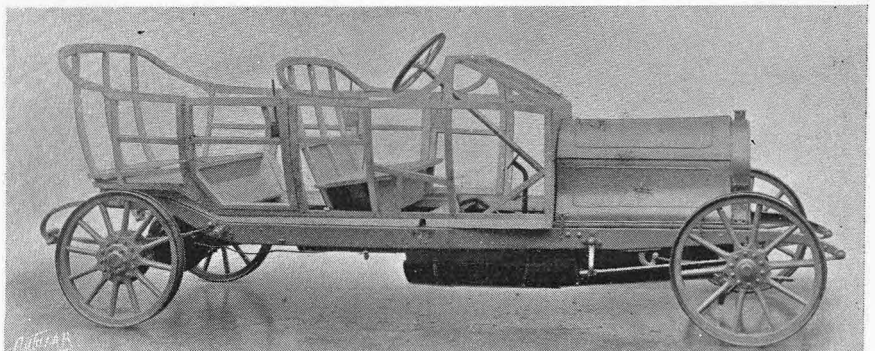


“torpedo” body. Indeed it may almost be called a “torpedo” body which has missed being a torpedo because it decided to be a boat. It has the high plain sides and the seats planted inside the panels, but is only built as a three-seater, as the narrowing of the body aft does not permit of a wide double or triple back seat. It will be noticed that there are no doors on the left or outside, and that, save for the preservation of the shipshape form, the body might have ended at the back seat. This car would be an interesting one in the Dust Trials to see the effect of the sharpened stern.

The Skeleton of a Torpedo.

Our illustration shows the framing of one of Capt. Masui's “torpedo” bodies before the sheet steel panels have been fixed to it. Incidentally it shows how strongly yet lightly these comfortable bodies can be built. The ribbing or framing of a body is one of the things which the owner never sees, but it is most important, not only so far as workmanship and correct design are concerned, but on the score of well-seasoned wood. Many of the loose doors and creaky bodies are due to the employment of wood which is not fully seasoned, and which begins to distort soon after it is put into hard use in all weathers and in ever varying temperatures. Another point is brought up too, and that is whether wood may not be superseded now that we are arriving at approximately correct body forms, so that we can have lighter bodies, and bodies which will not lose shape or develop rattles through so doing.

There is trouble enough at home with warping, but in many of the colonies wood is a constant source of anxiety, and motorists in these countries would be only



too glad if some more suitable material such as pressed angle steel could be used. In the flush-sided body the whole of the panelling is sheet metal, and the possibilities of a metal framing are worth consideration, especially if weight can be so saved.

On the Road.

A Gentle Protest against Ten Miles Limits and many other things.

I SUPPOSE that when the Liberal "Cave," the increased price of beer, whiskey, and tobacco, the City Protest, and the enormous influential and growing chorus of dissatisfaction against the Finance Bill have finally intimated to the House of Lords that it will be properly interpreting the will of the nation in throwing it out, the R.A.C. and the M.U. will come forward, their hands on their hearts, and inform the motoring public generally that "alone they did it." At which we shall smile, but, I hope, continue to put our house in order, so that when next our interests are attacked we may be able to defend them with a little more method and success.

This being so, let us discuss more pleasant topics, and begin with our own columns. First of all, I want to know whether *The Autocar's* artist or photographer was correct in the pictures of the Daimlers at Warwick Castle (pages 868-9), because whereas the latter represents them all lined up with covered in tops, the former shows them most realistically leaving the historic piles in remarkably open cars.

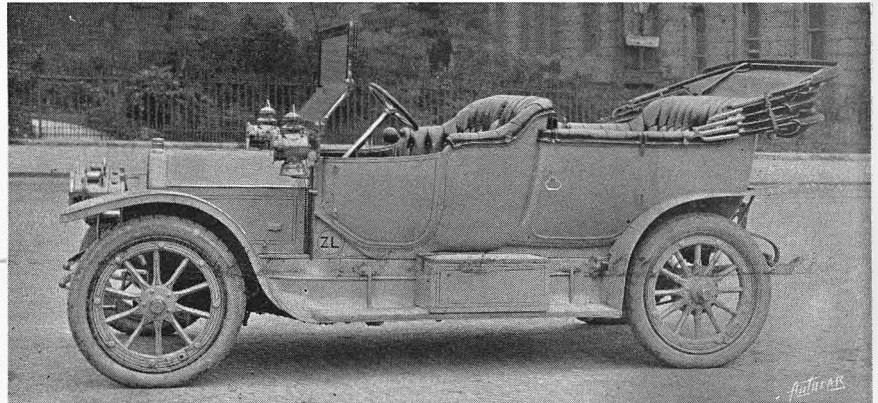
[Half of the cars were open touring vehicles, and the remainder principally limousines. Our artist's licence does not include the right to convert an open car to a covered-in one. —ED.]

Next, in letter 14345 a naval officer grumbles at the roads in Somerset and Gloucester, and says that the most popular method of repairing (?) them seems to be throwing flint into their holes. I know they are bad, but I know, too, that flint in those counties is even rarer than good roads, and that because it is so rare a tyre will last about twice as long on the soft, white, dusty Somerset surfaces as it does elsewhere. So even skiddy roads have their advantages, though they may not be very apparent. But of all the roads in England those of Cheshire are the best, and I am glad to be able to back up "Fatal No. 20" [14348] in his praise of the sensible way the police administer the law in that county. And all the more because they must be sorely tempted to make big bags in the wide open roads that attract every Manchester motorist. But they refrain from being foolish, and are content to catch men who deserve catching by scorching in places where they have no business or need to. But when they do capture—the word "trap" would be wrong here—they generally have a good case, and not even the fact that their prey is a Noble Lord makes any difference when he is up before the bench, which is where they differ from certain magistrates in other parts of England.

Then we come to "Enquirer's" query (No. 963), in which he wants to know how much he should dock his wife's allowance because she is giving up horses, carriages, and all repairs, and intends for the future to use his car "for everything." My word, as if we had no domestic troubles of our own! But I always

try to oblige, and, after thinking over the matter a good deal, have come to this conclusion. He should take the money derived from the sale of the horses, three carriages, and harness himself, and, since his wife will not have any expenses, he need not give her any allowance at all. Using his car will cost her nothing, but the husband should not grudge that, and, since he will have a nice little sum in hand from the sale of the horses and carriages, they should get their motoring fairly cheap for at least a year or so. This should suit "Enquirer," but, all the same, I should like to have his wife's assurance also that she was quite satisfied.

Concerning what is politely called the "aftermath" of the Irish Reliability Trials I make no remarks, though the output of correspondence on the subject is one more proof—as if another were required—that in the multitude of motoring organisations there is any-



"Owen John's" 15 h.p. Zedel, the body for which was built to the owner's instructions by W. Vincent, of Reading. Our contributor drives many thousands of miles during the year, and so aims at comfort on the car and economy of running, hence a light four-seated body with high side doors, large section tyres, and ample mudguards. The car is a beautiful piece of workmanship from beginning to end.

thing but safety. If the R.A.C. have one strong point it is its method of conducting trials and tests, and if such things were left to it alone there should be no disputings, no reflections, and (if there is any virtue in experience) no chance of anything going wrong.

But even it does not appear to have satisfied everybody always, for I have had a letter from a gentleman who charges the R.A.C. with a "want of explicitness" in a certificate granted to an Armstrong-Whitworth car at Brooklands. What I have got to do with it I don't know, and I think it shows the R.A.C. committee concerned to be a tender-hearted, kind body of men, who would, sooner than have a driver made uncomfortable driving at fifty miles per hour on a chilly day, give a certificate that he did not carry out his intention because he and his poor mechanic felt the cold too much. It shows a very nice spirit, and calls to memory the hero who sat all day in the Y.M.C.A. because he was afraid to go home in the dark, or, as the R.A.C. might put it, "The entrant explained the sole reason of his delay to be the fact that he was unprovided with a tail lamp." And the mention of heroes and excessive cold reminds me that one or other of our "leading motor organisations" should in some way commemorate the fact that

Lieutenant Shackleton achieved his wonderful performance partly by the help of a motor car. I suggest a dinner might be given to the explorer and his comrades, and I feel quite sure that so much attention would be drawn to the occasion that whatever club, or society, or union was responsible for it would be looked upon as the leading body until some even more important event by a rival put it in the shade.

All the same, much as I appreciate bravery and pluck, I do not want either the North or the South Pole to be discovered just yet, because there would certainly be a dispute between the explorers as to whether it should have a M.U. or a R.A.C. badge on the top of it. Undoubtedly the well-known A.A. emblem, that hardly any hotel or inn is too humble to display, would be affixed, but that might happen to anything, and calls for no comment.

Talking of signs, I have of late had to pass through many newly formed ten-mile limits, and very annoying and superfluous many of them are. At the same time, there is no doubt that we have brought them on ourselves by reason of the furious driving of some motorists, and I rejoice to see the R.A.C. in its advertisements for associates makes the good point that it pledges itself to "suppress inconsiderate driving." No club can have a higher ideal than this, and even

though in stamping out scorching it might seriously interfere with its own membership, the sacrifice would be well worth it, and the club would set a proud example of practising what it preached.

To return to "ten-mile limits," a young friend of mine insists that if more than ten miles an hour is an unsafe speed inside of them, the motor driver should make assurance doubly sure, and sound his horn unceasingly while within the boundaries. No accidents can then possibly happen, and if it annoys the inhabitants too much, they can easily abate it by asking for the withdrawal of the order. One cannot be too careful, and the promoters would soon discover that we are not the callous and careless folk they once thought us. The evidence of our excessive caution might even become quite embarrassing.

And I will end with a verse of a parody I came across the other day, which bears on the remarks I began this dissertation with:

"Oh! sir," the R.A.C. exclaimed,
Turning a little blue,
"We did not know this was the sort
Of thing you meant to do!"
But all the answer vouchsafed was,
"I'm much obliged to you."

OWEN JOHN.

A Kootenay Spare.

ALTHOUGH the careful automobilist at home carries a good many spares, he does not regard it as necessary to include an axe in his outfit. However, it is quite necessary in some parts of British Columbia, as Mr. P. F. Patrick, writing from the heart of the Kootenay Hills, British Columbia, says that it is quite a common thing to find a tree across the "trail," and before it is possible to proceed the arboreal wreckage has to be cleared. He is in charge of a model L White steam car which has replaced with success a petrol car which was so unsatisfactory that the owner had almost made up his mind to drop motoring. All this has been changed by the White, which has covered some 3,300 miles, and never once failed to get to its destination. This does not sound remarkable, but it must be remembered that the whole distance has been covered over rocky mountain roads or trails, and that it is equal to at least 12,000



Mr. Patrick engaged in clearing a track for the car.

or 14,000 miles at home. Last, but not least, the nearest repair shop is 200 miles away.

The Star Engineering Co. call our attention to the fact that the 12 and 15 h.p. Star cars which competed in the recent Scottish Trials were the same two vehicles which took part in the Irish Trials. The 12 h.p. car made absolutely a non-stop through the Irish Trials and lost only a few marks, owing to a leaky radiator, in the Scottish. This fact, however, did not affect its

running in the slightest degree, as the car made second fastest time on three of the four hill-climbs and fastest on the fourth. The 15 h.p. car made absolute non-stop runs throughout both the Scottish and Irish Trials, and, in addition, fastest time in its class in three of the four hill-climbs, only losing the fourth by $2\frac{1}{5}$ s. to a car 4 cwt. lighter.

Rivington Pike Hill Climb.

Contest Organised by the Lancashire A.C. and the Manchester A.C.

FOR the first time since the inauguration of the hill-climb on Rivington Pike the event on Saturday last was carried out under the auspices of the Lancashire A.C. and the Manchester A.C. jointly. Hitherto the former has been the organiser, and has made a full day programme of it, competitors going over the course once before lunch and again in the afternoon. The event was attended by an enormous expenditure of labour and preparation as an open meet. This hill-climb has always been very successful, thanks in a large measure to the enthusiasm of Mr. A. Birtwistle, the late hon. sec. of the L.A.C., who is at present very keen on motor boating on Lake Windermere. Though not a competitor, he was amongst the large company present on the hill. The atmosphere was clear, and the view westward across West Lancashire delighted all who had never previously been up to Rivington. It had not been deemed advisable to hold an open meet, but the idea of inviting the Manchester A.C. to co-operation enabled a good programme to be compiled. Entries were excellent, and the proceedings were confined to the afternoon, lasting from about three till six.

The Course and the Cars.

The course was in splendid condition, and the Lancashire A.C. is fortunate to have such a road again available. This is due to the generosity of Mr. W. H. Lever, M.P. (who made the road), and the Liverpool Corporation (who hold the moor as a watershed). The starting point has a gradient of 1 in 13.5, and varies until 127 yards from the finish, where it is 1 in 15.4, 1 in 11.1, and 1 in 9.8, the last short length being the steepest in the whole kilometre, which afforded a really excellent sporting course in every way, and the good attendance of the public had plenty of room to enjoy the programme. Everything contributed to smooth working; the cars were marshalled up near the foot of the hill, and on finishing their run returning thence by a circular route, so that the course was always free from competitors. Judging fell upon Mr. J. E. Baxter and the joint secretaries, Mr. J. Campbell (Lancashire A.C.) and Mr. J. B. Thistlethwaite (Manchester A.C.), and there was a good staff of stewards.

There were only two lady competitors, Mrs. Riley showing up prominently, as usual; but Miss Dyson's car in Class B stuck on the middle of the hill, and had to be taken back down the course. Mr. Tom Rothwell's car was disqualified in Class C for not having a touring body, and a minor objection to another competitor in the same class was overruled by the officials as too trivial altogether. Except for these little eventualities the trials passed off without a hitch. Mr. Higginson maintained the reputation that he has in the Manchester district by carrying off honours with his 80 h.p. De la Buire—"the monster of the show," as one onlooker called it.

The results were as follow, the three fastest cars in each class being noted herein, with the winner on the handicap formula:

| CLASS A (engine rating not greater than 12 h.p.) Five starters. | | |
|---|------|-------|
| Driver and car. | Time | m. s. |
| 1. F. W. Hobdey (12 h.p. Sizaire et Naudin) ... | 2 | 11½ |
| 2. S. E. Leach (12 h.p. Sizaire et Naudin) ... | 2 | 24½ |
| 3. A. Clemesha (12 h.p. Sizaire et Naudin) ... | 2 | 35½ |

No. 1 was also first on the handicap.

| CLASS B (over 12 but not greater than 17 h.p.) Four starters. | | |
|---|---|-----|
| 1. A. J. Hancock (20 h.p. Vauxhall) ... | 1 | 32½ |
| 2. G. H. Scutebury (20 h.p. Vauxhall) ... | 1 | 52¼ |
| 3. T. Carter (12-14 h.p. F.I.A.T.) ... | 2 | 12½ |

No. 1 was also first on the handicap.

| CLASS C (over 17 but not greater than 26 h.p.) Four starters. | | |
|---|---|-----|
| 1. J. H. Cordingley (16 h.p. Humber) ... | 1 | 45½ |
| 2. P. A. G. Bell (20 h.p. Bell) ... | 1 | 57½ |
| 3. G. H. Ward (20 h.p. Lancia) ... | 2 | 52½ |

No. 1 was also first on the handicap.

| CLASS D (over 26 but not greater than 36 h.p.) Three starters. | | |
|--|---|-----|
| 1. G. H. Woods (40 h.p. Crossley) ... | 1 | 44½ |
| 2. C. Wade (35-45 h.p. French Clément) ... | 1 | 47½ |
| 3. A. E. Jones (30-40 h.p. Daimler) ... | 1 | 52½ |

No. 2 was first on the handicap.

| CLASS E (greater than 36 h.p.) Seven starters. | | |
|---|---|-----|
| 1. J. Higginson, jun. (80 h.p. De la Buire) ... | 1 | 53 |
| 2. F. C. Hudson (48 h.p. Daimler) ... | 1 | 19½ |
| 3. T. Hudson (42 h.p. Daimler) ... | 1 | 27½ |

The winner of the handicap was H. Hollingdrake, who drove his own 35-40 h.p. De la Buire, and was the fourth fastest with 1m. 32½s.

| CLASS F (special for two-seaters of 17 h.p. and under). Three starters. | | |
|---|---|-----|
| 1. Mrs. Riley (14-16 h.p. Belsize) ... | 2 | 41½ |
| 2. C. Parrish (12-14 h.p. N.A.G.) ... | 2 | 42 |
| 3. R. Mengnall (14 h.p. Belsize) ... | 3 | 41 |

No. 1 was also first on the handicap.

Cup Winners.

Three special prizes were offered—the cup for fastest time was won by Mr. Higginson, and one for the handicap by the Vauxhall driven by Mr. Hancock. Probably a cup, to be held annually by the winners, will form the prize in the inter-team race, but the trophy has not yet been obtained. For this competition, which was a sort of inter-team sporting event between the two clubs, as distinct from individual members, the L.A.C. and M.A.C. each selected six cars, the aggregate times to decide the honours. Of course, the Manchester men engaged the services of the 80 h.p. De la Buire, which was far and away the most powerful and the fastest car that had competed during the afternoon. As the returns show, Mr. Higginson in this inter-club contest beat the good time he recorded in the previous trials, and undoubtedly his performance gave Manchester a big advantage. The results were:

| MANCHESTER A.C. | | |
|--|------|-------|
| Driver and car. | Time | m. s. |
| Hobdey (12 h.p. Sizaire et Naudin) ... | 2 | 33 |
| Hancock (20 h.p. Vauxhall) ... | 1 | 18 |
| Bell (20 h.p. Bell) ... | 2 | 8¼ |
| Woods (40 h.p. Crossley) ... | 2 | 24½ |
| Higginson (80 h.p. De la Buire) ... | 1 | 1 |
| Mrs. Riley (14-16 h.p. Belsize) ... | 2 | 17½ |

Aggregate ... 11 13½

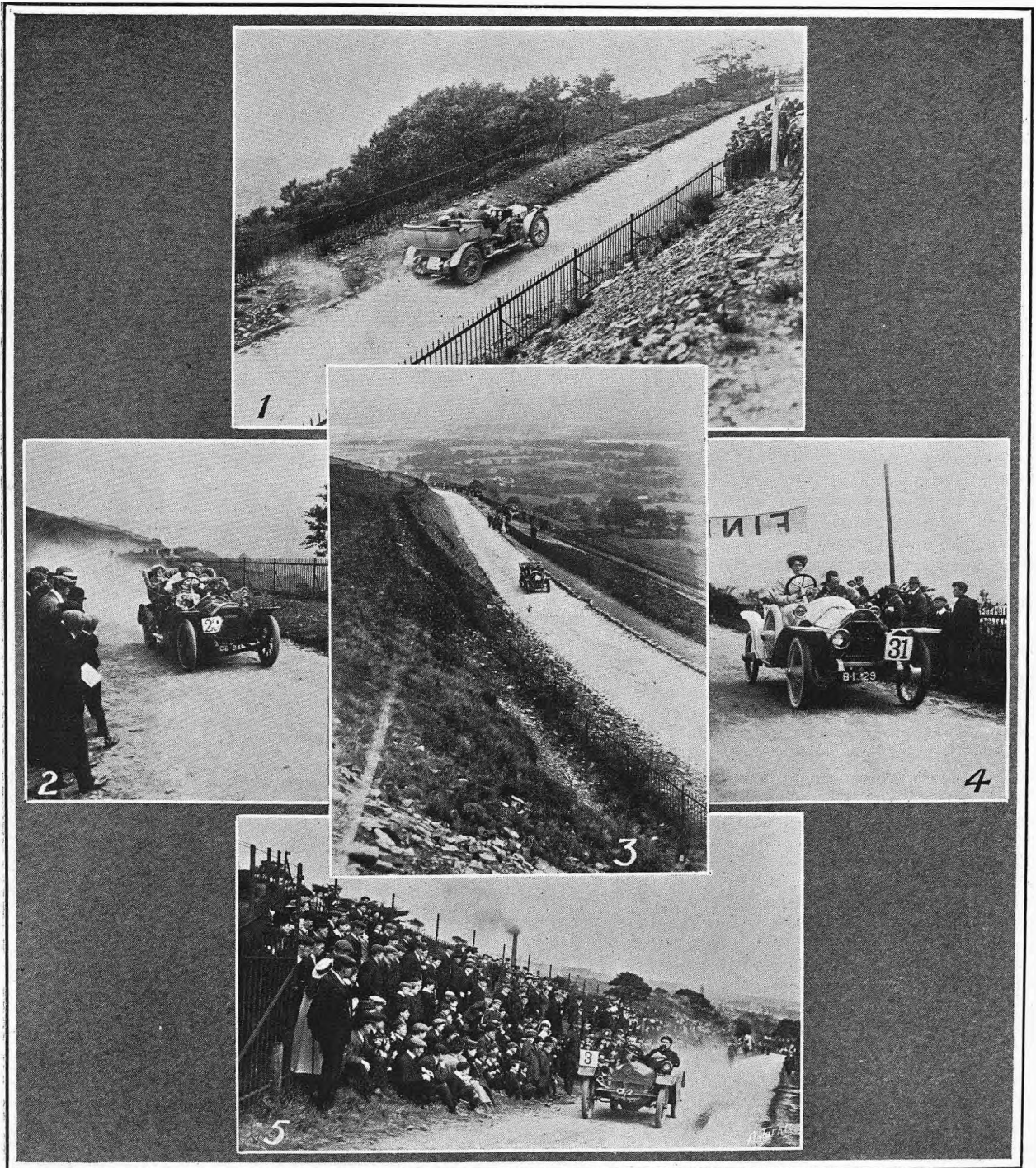
| LANCASHIRE A.C. | | |
|--|------|-------|
| Driver and car. | Time | m. s. |
| Clemesha (12 h.p. Sizaire et Naudin) ... | 2 | 47½ |
| Carter (12-14 h.p. F.I.A.T.) ... | 1 | 56½ |
| Cordingley (16 h.p. Humber) ... | 1 | 37½ |
| Parrish (12-14 h.p. N.A.G.) ... | 2 | 22½ |
| Wade (35-45 h.p. Clément French) ... | 1 | 34½ |
| Sutcliffe (30-55 h.p. Daimler) ... | 1 | 52½ |

Aggregate ... 12 10

Manchester won by 56½s.

Arrangements have now been made by Messrs. Charles Friswell, Ltd., for hiring out six-cylinder Standard cars. The public will be able to charter any number of Standards for business purposes or social functions.

Scenes at the Rivington Pike Hill Climb.



(1.) On a stiff part of the hill. Mr. C. Wade's 35-45 h.p. Clement. (2.) Coming up at full speed. Mr. H. Hollingdrake's 35-40 h.p. La Buire. (3.) A general view of the hill. (4.) Mr. Riley's 14-16 h.p. Belsize at the finish. (5.) A group of spectators who evinced much interest in Mr. A. Clemesha's 12 h.p. Sizaire et Naudin.

Mr. Bates's motor boat *Alert* did yeoman service in the salvage operations following the collision between *H.M.S. Sappho* and the merchant vessel of the same name. The boat is fitted with a set of Ailsa Craig motors. It is interesting to note that other boats so equipped have many similar records to their credit. The numerous rescues in which Quartermaster-Sergeant

Huskisson's Ailsa Craig engined boat has figured at Yarmouth, Isle of Wight, are fresh in memory, and it is not so very long ago that the Ailsa Craig motor boat *Barney* in the North of Scotland saved the lives of several fishermen whose boat had capsized during a storm. The reliability of the motor is, of course, very important in carrying through work of this sort.

The New 12-14 h.p. and 18-20 h.p. Crossley Chassis.

Built by the Famous Firm of Gas Engine Makers.

(Concluded from page 920.)

In order to prevent noise from the distribution gear, the oil under pressure is delivered by a jet to immediately between the teeth of the meshed gear wheels, so that there is always a skin of oil interposed between the driving and driven teeth. In no other way can this effect be obtained, for the reason that when oil is merely dropped upon the teeth of such wheels it is always thrown off by centrifugal force, and very little remains upon the teeth to effect the result above mentioned. With a view to reducing the ring from these gear wheels, they are made with solid webs with staggered stiffening arms, and are bolted on to a register on their respective shafts, and not on to a taper. The camshaft bearings are lubricated similarly to those of the crankshaft with oil under 15 lbs. pressure per square inch obtained from the oil pump. The oil leads are all formed with connections which can be removed, in order that the oil pipe may be cleaned.

There are no set-screws or locking nuts employed to secure the gudgeon pin. Although not shown in the section, the gudgeon pin is retained in position by an encircling steel ring fitted clear of the cylinder walls. The connecting rods weigh complete $18\frac{1}{2}$ ozs., and the pistons, complete with rings and gudgeon pin, are under 22 ozs. As can be gathered from an inspection of the longitudinal vertical section, the crankshaft can be withdrawn from this engine without disturbing the crank chamber in any way. It is only necessary to remove the under case, when the crankshaft itself can be immediately dealt with.

The carburetter is set on the right-hand side of the engine. It is of simple design, embodying three very interesting principles. Its construction is easily comprehended by reference to the two sections in fig. 5. The jet chamber is formed in the same casting as the float feed chamber, the two being separated by a water jacket and connected by a petrol lead and the depression equalising duct. Around the jet is set the automatic choke tube. This choke tube remains as shown in the section until the number of engine revolutions reach 200, when it is lifted by the engine suction to the top of the mixing chamber, thus giving an increased flow of air round the jet itself. The depression equalising duct exists for the purpose of

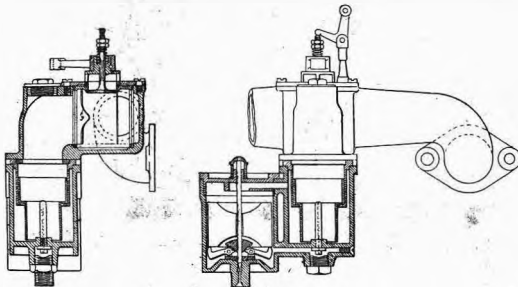


Fig. 5.—Sections of the 18-20 h.p. Crossley carburetter.

maintaining an equal pressure in the jet and float feed chambers, so tending to equalise the inertia of the petrol and the air and prevent flooding and waste. Above the jet chamber is the throttle valve and controllable automatic air inlet. The throttle valve is so formed as to afford a very gradual feed of mixture at the early movements of the same. When the

throttle is closed the automatic air valve can be opened by hand from the steering wheel for the purpose of employing the engine as an air brake. This plan not only cools and scavenges the engine, but it prevents oil creeping by the piston rings.

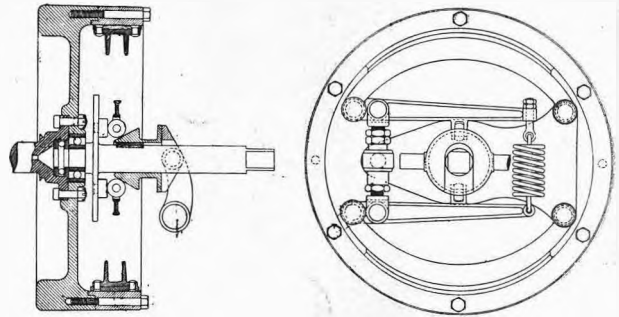


Fig. 6.—Section and arrangement of the Crossley clutch.

The drive passes from the engine by means of a double lever expanding shoe clutch, a simplified form of the standard Crossley metal to metal shoe type, the construction of which is clearly shown in fig. 6. On the rearward rim face of the flywheel is bolted the clutch ring, upon the inner periphery of which the cast-iron faced aluminium clutch shoes take effect. On the left-hand side of the clutch shoe frame plate is mounted a cross head carrying the spindles forming the fulcrum of the declutching arms, the longer arms of which are attached to the ends of the clutch shoes. The other ends of the clutch shoes are secured to the frame plate as shown. It will be seen that the effect of the clutch spring is to approach the ends of the longer arms of the clutch lever, and so thrust the clutch shoes against the inner periphery of the clutch ring on the pivots forming their attachment to the clutch plate as a fulcrum. In order to withdraw the clutch shoes from contact with the clutch ring, the clutch cone is moved forward along the clutchshaft, with the result that, owing to its coned form and its contact with the rollers, the longer ends of the clutch arms are thrust outwards from each other, with the obvious result that the clutch shoes are withdrawn from contact with the clutch ring. The adjustment is immediate and simple by means of the right and left-hand thread cut on the cross head carrying the clutch arm fulcrum spindles. The whole of the clutch can be entirely removed without disturbance of the engine or gear box.

It will be noticed that flywheel and clutch are protected by inclusion in the open flywheel pit, and this flywheel pit is continued to form and enclose the gear box (fig. 1). A flexible joint connects the rearward end of the clutchshaft with the forward end of the primary gearshaft. With the exception that the primary and secondary gearshafts are in the vertical plane, and that the shafts running in ball bearings are kept as short as possible, the former being castellated, there is little more to be said with regard to the gear box design. The change speed gear is operated by one lever working in a single slot without notches and without gate. The whole of the striking mechanism, selector rods, etc., both inside and outside the gear, are enclosed in an oiltight case. With regard to

what can be described as the selector case, in which the end of the change speed lever operates, this is so designed as to be entirely enclosed and to work in a lubricant, although it is immediately accessible for any purpose by the removal of an exterior cover plate. The design of this arrangement is unique, and certain and accurate in operation. The change speed lever A (fig. 7) is pivoted at B, and carries on its extension a sliding piece C, which can be moved axially to operate and engage with either of the two levers D and E by one or other of the pegs F and G. The slide C, by means of a spring and the rod H, is held normally in the upper of its two positions, and of its two squared pegs F and G the lower one G engages with the lever E, locking it to the change speed lever and operating the second and third speed selector rod in the gear box. The upper peg F is out of engagement in this position, but by depressing a knob in the change speed lever handle the slide C is pushed into its lower position, the peg G clears lever E, whilst peg F enters lever D, which operates the first and reverse speed selector rods. To lock the lever not in engagement a bar with peg M is provided.

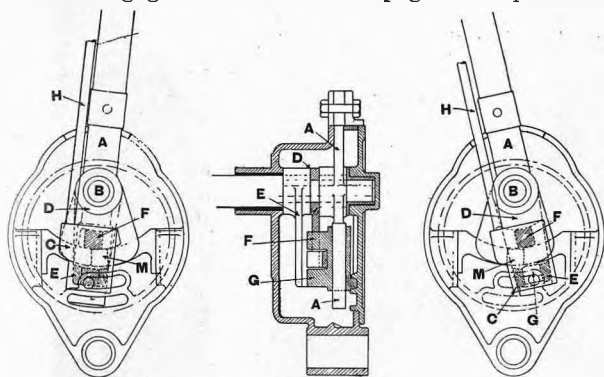


Fig. 7.—Details of the new change speed gear on the Crossley cars.

- | | |
|--------------------------|----------------------------|
| A, change speed lever | F, squared locking peg |
| B, lever spindle | G, squared locking peg |
| C, slide | H, rod working the slide C |
| D, gear operating levers | M, locking bar and peg |
| E, gear operating levers | |

This is supported between pegs F and G, and securely locks the lever it is engaged with.

The slide C carries on the outer side a round peg, which works in a gate formed in the box cover, thus fixing the various positions and providing a central neutral notch. Immediately in rear of the gear box we have the universal joint of the propeller-shaft enclosed in the spherical casing and head of the torque tube, which also forms the propeller-shaft casing. This is a feature which has received general approval in other quarters, and we think the Crossley designers are wise to adopt this method of communicating the drive to the frame. By reference to fig. 2 (the plan of the chassis) it will be seen that the cross tube member taking the drive from the torque tube is reinforced by the introduction of the truss tubes, which not only serve to strengthen the frame at its weakest point, but to assist the cross tube in delivering the drive to the side members.

In fig. 8 the general arrangement of the rear axle is clearly shown. Fast on the end of the propeller-shaft is the driving bevel pinion, the socket of which is carried in a ball bearing of large diameter, the propeller-shaft itself farther forward rotating in another ball bearing, with two thrust bearings interposed. The

differential gear box to which the crown bevel wheel is bolted is of very strong, neat, and close construction, and contains a differential gear of the bevel wheel description. It is interesting to note that the

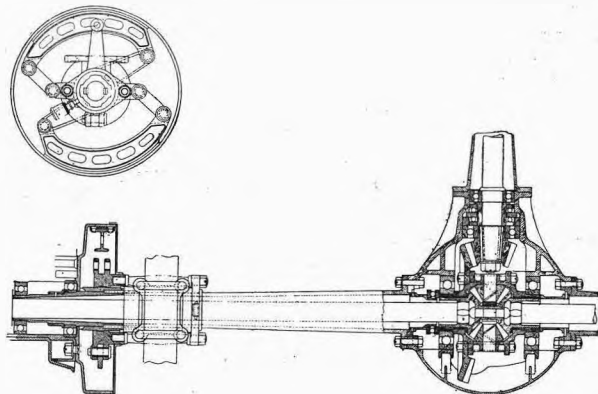


Fig. 8.—General arrangement of the rear axle and brakes mechanism.

sun wheels of the differential gear are not attached rigidly to the ends of the driving-shafts, but are set on the chamfered hexagonal ends, permitting a certain amount of whip or play in the driving-shafts, thus relieving them of all strain but that necessary for the conveyance of the rotative drive.

The matter of brakes has been given special attention in the design of the 12-14 h.p. Crossley chassis. Prompted probably by the R.A.C. official trial of a well-known front wheel brake, the Crossley Motor Company have plumped for this description of brake in lieu of what, to the mind of the automobile engineer, is a most undesirable arrangement, viz., a shoe or band brake taking effect on a drum set in rear of the gear box on the forward portion of the universal joint. To comprehend the design and application of the Crossley front wheel brake it will be necessary to take figs. 1, 2, and 9 into consideration. While on the standard types a hub with detachable wire wheels is used, a brake drum C is mounted on what may be termed the permanent hub barrel. The axle head and steering pivots are set at such an angle that the centre line drawn through them touches the ground at the point of wheel contact therewith. The steering pivot is made hollow, as shown, and within it is set a plunger

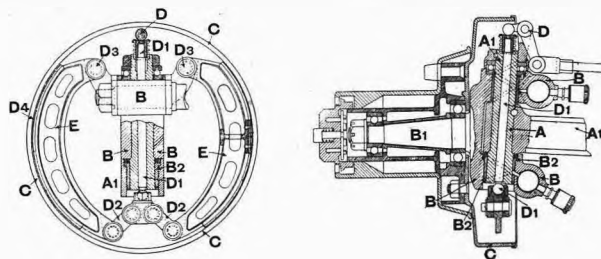


Fig. 9.—Detail of the Crossley front wheel brakes.

- | | |
|--|---|
| A, front axle | D, brake application rod and bell crank |
| A1, steering pivot | D1, brake application plunger |
| B, steering spindle socket and steering attachment lugs | D2, brake shoes expanding toggles |
| B1, steering wheel spindle | D3, brake shoe pivots |
| B2, sleeve separating steering pivot and steering spindle socket | D4, cast iron brake shoe liners |
| C, front wheel brake drum | E, front wheel brake shoes |

D1. This plunger is held in position by the spiral spring set under the cap screwed on to its upper end. Upon this cap presses the globular end of the bell crank lever D, which is actuated by the brake pedal

through the rods Y_1 in fig. 2 and D in fig. 9. The depression of the brake application plunger D_1 by the bell crank lever D, as aforesaid, takes effect upon the brake shoes expanding toggles D_2 , with the result that the brake shoes E are thrust outwards against the inner periphery of the brake drum C upon the pivots D_3 as a fulcrum. The brake shoes are of pressed steel with cast-iron liners D_4 . We think our readers will agree with us that the Crossley Motor Co. are to be congratulated upon the very neat and compact manner in which they have applied the front wheel braking principles, no wire ropes or cables of any description being employed, the application being positive from start to finish. Turning to the back wheel brakes, we find here a departure from the usual method of application. The brake shoes are set upon the fulcrum, which is fast with the sleeve on the spring table; therefore the ends of the shoes are thrust outwards by the rocking movement of the brake expanding disc and arms, and operating through the

connecting links. In this arrangement it will be seen that the application of both the shoes must be similar and equal in both respects, and that partial surface contact by reason of the wearing of small pins and cams is entirely obviated, and no wear or chatter results. This arrangement permits the use of a brake drum cover, which can be slipped back and the brakes inspected without the necessity of detaching the wheels. These remarks apply similarly to the front wheel brakes. The brake shoes are interchangeable throughout the car. Both brake drums and segments are of pressed steel. The compensating tube for the back wheel brakes passes through the cross tube, which is filled with grease. All links and rods are enclosed and protected from mud. In both types the hubs are designed for use with detachable wood or wire wheels, but they are interchangeable with ordinary wheels, should detachable wheels not be required. Altogether the design is a most meritorious one, and we look forward to a trial of the car with great interest.

Aeronautics.

Recent Progress as Recorded by "The Aero."

The British Army Aeroplane.

ON Friday, May 14th, the British Army aeroplane, piloted by its designer, Mr. S. F. Cody, made a successful flight of nearly a mile over Laffan's Plain, Aldershot. On Friday, June 18th, Mr. Cody, having completed numerous alterations in the arrangement of his machine, succeeded in accomplishing a flight of about $1\frac{1}{2}$ miles, during the course of which he made several turns and other aerial evolutions at a height of about 30ft. It is interesting to note that Mr. Cody claims priority of usage in respect to the patent which has been granted the Brothers Wright for the control of an aeroplane by means of twisting the wings through a mechanism worked in conjunction with the vertical rudder.

The Givaudan Aeroplane.

A machine of an original type, designed by M. Givaudan, was described in the first issue of *The Aero*. Its lifting surfaces, instead of being of the usual form, are of the multi-cellular type, and take the form of two concentric drums attached to the extremities of a steel frame, the inner drum being connected to the outer by eight radial fins. The front drum is movable in any direction and steers the machine, but the rearward drum is fixed. The idea of employing the cellular drums is that when the machine is tilted sideways the drums always present the same lifting surface to the air.

Flying Machines at Shepherd's Bush.

An aerial navigation section is included in the Imperial International Exhibition at Shepherd's Bush, which opened the last week in May. The exhibits are principally models, varying in size from 12ft. long to 2ft. across.

The Juvisy Aerodrome.

On Sunday, May 30th, the Juvisy Aerodrome was officially opened. Of the nine aeroplanes which had been announced to appear only three came forward after a wait of three hours. Delagrangé made an indifferent flight, and De Pischoff tried to follow suit but could not rise. The crowd, which numbered about thirty thousand, then gave vent to their feelings and broke down the barrier, the police being unable to maintain order. When the crowd had eventually

quietened down Delagrangé attempted to make a second flight, and accomplished two rounds of the field at a height of about 30ft. Rougier, the ex-motorist, next started his Voisin biplane, but after a short flight the machine fell to the ground and was badly smashed in front.

Gunton-Howard Gravity Balance.

A device for obtaining automatic stability was invented recently by Messrs. Gunton and Howard. It consists of mounting the aviator in a seat which is free to swing laterally from a fixed point of the machine; thus when the one side of the machine is depressed by some cause or other the aviator on his pendulum seat still remains vertical beneath the point from which it is suspended, and the relative motion between his platform and the machine is caused to operate small ailerons at either side of the machine. By this means the aileron on the side of the machine which is depressed is given an increased angle of incidence, whilst that on the upper side is decreased, hence the machine tends to return to its normal horizontal position.

Monoplane Successes.

On Saturday, the 22nd of May, Mr. Hubert Latham on an Antoinette monoplane accomplished a flight lasting $37\frac{1}{2}$ m. The flight was at an average height of about 90ft., and the speed slightly over forty-five miles an hour. His previous best flight was one which lasted 12m. on the same machine. Following this up on Saturday, June 5th, at Chalons Camp, Mr. Latham easily broke his own record by a magnificent flight lasting 1h. $7\frac{1}{2}$ m., during the course of which he performed a number of evolutions in the air, flying over trees, sheds, and spectators, his altitude varying from 90ft. to 160ft. On the following day Mr. Latham succeeded in winning the Ambroise Goupy Cup for the first aeroplane flight of five kilos. ($3\frac{3}{8}$ miles) across country. The flight started from Chalons Camp, and Mr. Latham flew over trees and houses to Cadenay, a village nearly four miles distant, where he effected a graceful turn and returned to his starting point. On the following Monday Mr. Latham created fresh records by successfully carrying passengers on his monoplane.

The Zeppelin Voyage.

Beginning on Saturday, May 29th, the dirigible Zeppelin made an epoch-making voyage of no less than 950 miles, during which she remained in the air 37h. In landing at Laubheim the dirigible struck a pear tree, and her forepart was somewhat seriously damaged. Repairs, however, were very quickly effected, and the machine was navigated home stern foremost for the remaining forty miles, one motor only being used so that the temporarily repaired part might not be strained. The significance of this voyage cannot be over-estimated, since the distance which the airship travelled is almost equal to a journey from Metz, her probable headquarters in the future, to London and back.

The Blériot Monoplane.

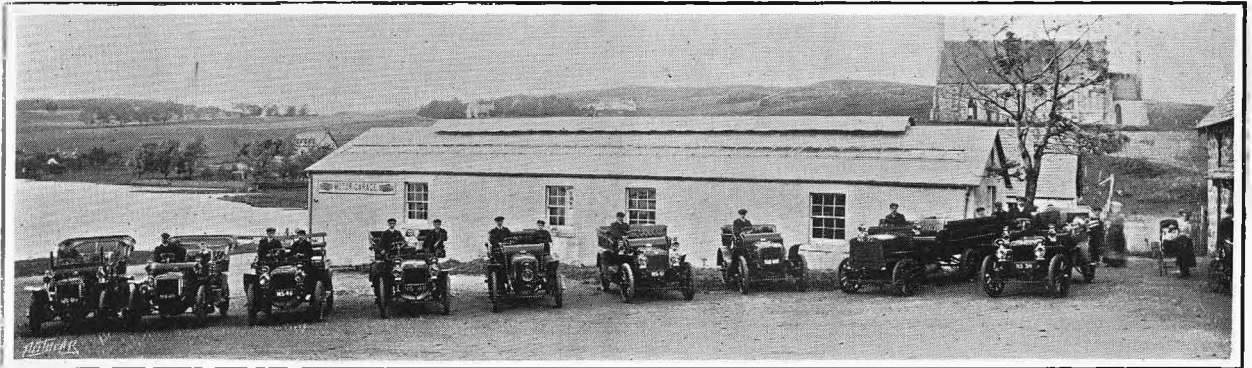
In addition to Mr. Latham's improvements, the monoplane has been making further progress and coming into greater prominence in the hands of M. Blériot, who has made some fine flights at Issy-les-Moulineaux, where he has emulated Mr. Latham by carrying passengers successfully on his machine, which has been frequently illustrated in *The Aero*.

Flying in the British Isles.

Under this heading *The Aero* published on June 8th a list of forty full-size flying machines either in use, under test, or in an advanced stage of construction in the British Isles. In view of the unexpected quarters wherein some of these machines have been discovered, it would be safe to estimate that there are at least another ten or fifteen full-size machines at present being built.

Weapons for Aerial Defence.

In order to combat in time of war such dirigibles as the Zeppelin, Krupps have turned their attention to building special artillery for aerial defence. Their special field piece for this purpose is mounted on a very long carriage, at the back of which is a spur which sticks in the ground, the two gun carriage wheels being so mounted that the carriage can be turned about the spur and thus easily pointed in any direction. The gun which is used with this carriage can also be mounted on a motor car or on board ship, and has a vertical range of a maximum of 35,000ft. with a projectile weighing 7 lbs. Krupps are also building an extra light gun for mounting upon dirigibles.



A group of eight Albion cars and an Arrol-Johnston waggonette forming part of a fleet of fourteen cars owned by Mr. W. W. Wallace, of the Sutherland Arms Hotel, Lairg, N.B. The full fleet consists of twelve Albions, an Arrol-Johnston, and an old Daimler. The Daimler is about fourteen years old, and is believed to be one of the first of the Coventry Daimlers, and is still in first-class running order. Eight of the Albion cars carry mails backwards and forwards on three different routes from Lairg to Lochinvar, to Scourie, and to Tongue, daily, and during the last three years have given satisfaction to the Postal Authorities. The Arrol-Johnston car, a 12-15 h.p., runs between the hotel and the station, and carries fifteen passengers and luggage. The other four Albions are used for hiring purposes in connection with the hotel. The old Daimler carries luggage when necessary. Mr. Wallace finds great satisfaction in the car, and states that one can do in ten hours what it used to take three or four pairs of horses two days to accomplish. Mr. Wallace was the first hotel proprietor in the North of Scotland to keep motors for hiring purposes. Nearly all the cars are fitted with Pol'key paraffin lamps only.

Royal Automobile and Associated Clubs. Warwickshire Meeting.

The following is the programme of events arranged in connection with the Warwickshire meeting of the R.A.C., to take place on Saturday, 24th July, in conjunction with the Coventry and Warwickshire Motor Club:

COVENTRY.—9 a.m. to 12, visits to various motor car and other factories. 12 (mid-day), reception by the Mayor in St. Mary's Hall. Meeting of the R.A.C. General Committee.

WARWICK.—3 p.m., meet at Warwick Castle, and inspection of castle.

LEAMINGTON.—5 p.m., the Town Council will entertain the visitors at tea, and an open air concert in Jephson Gardens. 8 p.m., the fifth provincial dinner in the Town Hall.

In each of the three centres visited civic receptions will be extended to the party of members and associates, who will be headed by their chairman, H.S.H. Prince Francis of Teck, and everything possible is being done by the respective authorities for the pleasure and comfort of the visitors.

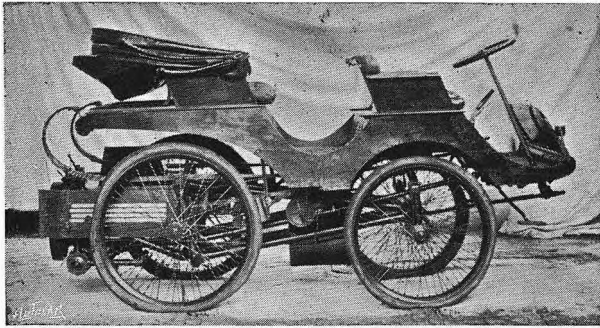
The venue of the meet is most happily chosen, for Warwickshire justly claims not only to be the geographical centre of England, but also to have been the scene of many great historical events. Since motor touring has been possible, "Shakespeare's country" has always been a favourite touring district, and the opportunities afforded by the present meeting will doubtless attract a large number of motorists, especially as the country should be at about its best by the middle of the month.

Two Early Lanchester Cars.

Vehicles which embodied several Features which are now Standard Practice.

WE have received from the Lanchester Motor Co. some interesting details with reference to the early Lanchester cars, which are exhibited amongst the collections of early motor cars at the White City, and which were mentioned in *The Autocar* of June 12th. Mr. G. H. Lanchester writes:

"The building of the original Lanchester car was commenced in 1895, and it was on the road during the summer of 1896, a few months before the Light Locomotives Act came into force. The car was originally a five-seat phaeton, the rear seat accommodating three abreast, and the front carried two separate seats somewhat resembling what have since been termed 'bucket

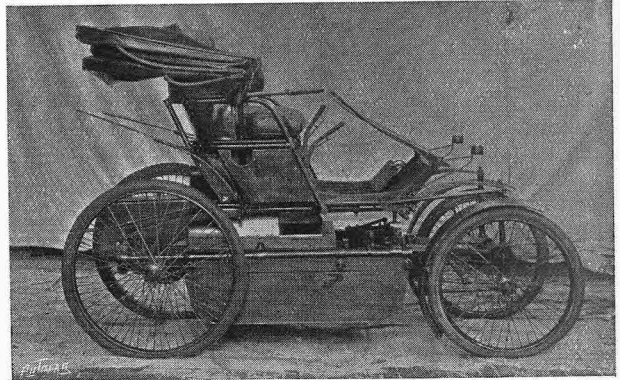


The original Lanchester car, finished in 1896.

seats.' Between the front seats was the petrol tank with a Lanchester wick carburetter, very similar to that still in use on all Lanchester cars. Tiller steering was fitted, but this was subsequently replaced by a wheel, in order to test the relative merits of wheel and tiller steering—the car as exhibited is fitted with the wheel. At first this car was propelled by a single-cylinder 5 h.p. engine, air-cooled—by centrifugal fan—fitted with two flywheels rotating in opposite directions. This engine was placed centrally within the chassis, the transmission was through epicyclic gearing and chain drive, the epicyclic gears being controlled by leather lined band brakes actuated by foot pedals. Subsequently the car was fitted with a two-cylinder horizontal engine; cylinders opposed, reverse rotation flywheels (very similar to the engines that were manufactured for the 10 h.p. Lanchester cars, of which there are numbers running on the road to-day). Low tension magneto ignition was one of the features of this engine. Automatic mechanically operated lubrication, mechanically operated valves (induction and exhaust), worm drive on to *live axles*, epicyclic gears; controlled by hand levers, and fibre block brakes in place of the leather lined band brakes. The direct drive clutch on this car was a leather cone, the back portion of which, if withdrawn further than necessary to de-clutch, came into contact with some fixed brake blocks and acted as a powerful main brake. At the same time that these improvements were made, the petrol tank and carburetter were transferred to the chassis, in which position they are visible in the enclosed photograph. [Here reproduced.—Ed.] This enabled us to give seating capacity for three instead of two on the front, thus making the car a six-seat phaeton. The chassis was almost entirely of steel-tubular construction, and the body of the car was also of steel, the sides being made of steel plates and transverse members of

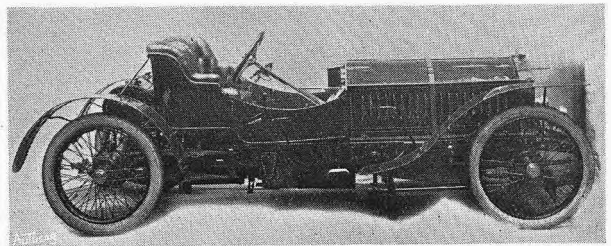
steel tubing, this framework being sheathed with wood panels.

"Whilst these alterations were taking place in 1897 and 1898 the two-seat phaeton was being constructed, which afterwards competed in the A.C.G.B. and I. 1,000 miles tour, and was also exhibited at the A.C.G.B. and I. automobile show at Richmond in 1899, where it was awarded a gold medal. This car shows a distinct link between the original car and the subsequent productions of the Lanchester Company, inasmuch as the wheelbase was long as compared with other



The Lanchester two-seated phaeton which gained a gold medal at Richmond in 1899.

cars of the period. The chassis was low and suspended at the front on springs slightly resembling the Lanchester suspension of the present day. The engine was a 10 h.p. two-cylinder, air cooled, balanced by flywheels rotating in opposite directions; low-tension magneto ignition; mechanically operated inlet and exhaust valves; the carburetter was of the Lanchester wick variety; gears, epicyclic, controlled by hand levers similarly arranged to those on the 10 h.p. Lanchester cars of 1900 and onwards; transmission by worm drive, live axles running in cageless roller bearings of Lanchester design, with ball bearing thrusts. This car was tiller steered, and was the first car to be fitted with the Lanchester dash that has since become such a distinctive and comfortable feature of many Lanchester cars."



One of the four Napier racers specially built to compete in the Grand Prix race of 1908, but which were not entered because detachable wheels were barred. These cars develop 120 h.p., and, contrary to general opinions with regard to racing cars, are easy to drive in traffic and are capable of being finished off in a style very different from that usually associated with racing cars. Rudge-Whitworth detachable wire wheels were fitted to the four.

The Scottish Trial.

Some Suggestions for Future Competitions.

LOOKING back upon the report of that arduous test known as the Scottish Trial, the reader is first of all somewhat taken aback by the surprising number of failures on the first day at the two hills, Amulree and Cairn-o'-Mount. These failures are mainly attributable to the number of cars fitted with gears unsuitable to the district in which they had to travel. It is no excuse for the makers to say that people do not require gears low enough to surmount such hills as these, since similar gradients are almost inseparable from places where the finest scenery is obtainable. Take Lynton, for instance; Gairloch, an ideal spot; Scourie, some forty miles north of the latter place, and still more beautiful. Everyone of these, and many other ideal spots for a holiday, cannot be reached without descending a hill which must be climbed before the locality is left. Had the cars been geared sufficiently low to take so steep a gradient as, say, 1 in 3, with a trifle in hand, it is more than likely that the other gears would be correspondingly low, and in consequence the petrol consumption would be seriously affected. Hill-climbing is nowadays almost solely dependent on gear ratios, and the failures above referred to are more than probably due to the fallacy now so prevalent, but happily showing signs of being dispelled, that small cars need but three speeds. If a four-speed gear box be fitted, the first and second gears may be low enough for any gradient, leaving the third and fourth at normal ratios.

The many water circulation troubles suffered are, in our opinion, mainly due to insufficient testing. Long experience has taught that high engine revolutions under load are more liable than anything to produce overheating. Testing on the bench, where an unlimited supply of water is at hand, is quite unsuitable. There is but one place where adequate trials of this nature can be held, and that is Brooklands Track, where ten miles all out with full load, finishing up with only a few seconds' interval to stop and take the test hill from a standing start, without any sign of boiling or distress, will qualify a car to make a respectable showing on Cairn-o'-Mount. Many cars will run a thousand miles or more round about London or in comparatively flat districts without anyone suspecting a tendency for the water in the radiator to boil, but a run across the plains of France, and the climbing of a pass into Italy, where the temperature may be expected to be warmer than in the British Isles, or a tour in the most beautiful districts in Scotland, will prove that the trouble is not absent, but merely dormant. The thermo-syphon system of cooling is quite satisfactory, but, merely through inefficient testing, few cars thus equipped completed the Scottish Trial course without trouble.

Defects such as seized fan spindles, broken fan belts, and leaky joints are troubles easily overcome with a little care, but inefficient radiators are inexcusable at the present time, and consequently these and the shape and design of the water spaces require more careful attention.

While we were delighted to see that petrol consumption was considered an important point by the Scottish Club, it was somewhat distressing to see to what abuses it led. Like the proverbial Act of Parliament through which a coach and horses may be driven, there is never a rule framed for a reliability trial through which a 6 h.p. car may not be smuggled, and consequently the

competing vehicles were fitted with extra air inlets never intended to be fitted to their ordinary models, while spark advance levers were added where fixed ignition is a standard fitting. Levers of a number common years ago in ancient models were attached to the steering columns of cars the standard designs of which admit but two or even one; and on several vehicles emergency petrol pressure pumps were to be seen which are not included in the usual specification. Such fittings, though in many cases desirable, should be embodied on all standard models, or forbidden. The manner in which the cars were driven in many cases calls for severe criticism. The engine was accelerated for a second and then stopped, then the clutch was let in often none too gently and the process repeated, by no means tending towards the comfort of the occupants, and coasting was indulged in wherever possible and often attempted where impracticable. One if not more of the engines fitted to the cars was more suitable for racing than touring, while one competitor actually mentioned to the writer that the car he drove was not one by which the running of his usual cars could be judged. As stated in our last issue, the comfort afforded by the competing vehicles should be taken into consideration, and special awards should be given for efficiency in this respect, while Cape cart hoods and wind screens of sufficient height to fulfil the purpose for which they are intended should be made compulsory, for without these additions the majority of modern motorists refuse to drive a car.

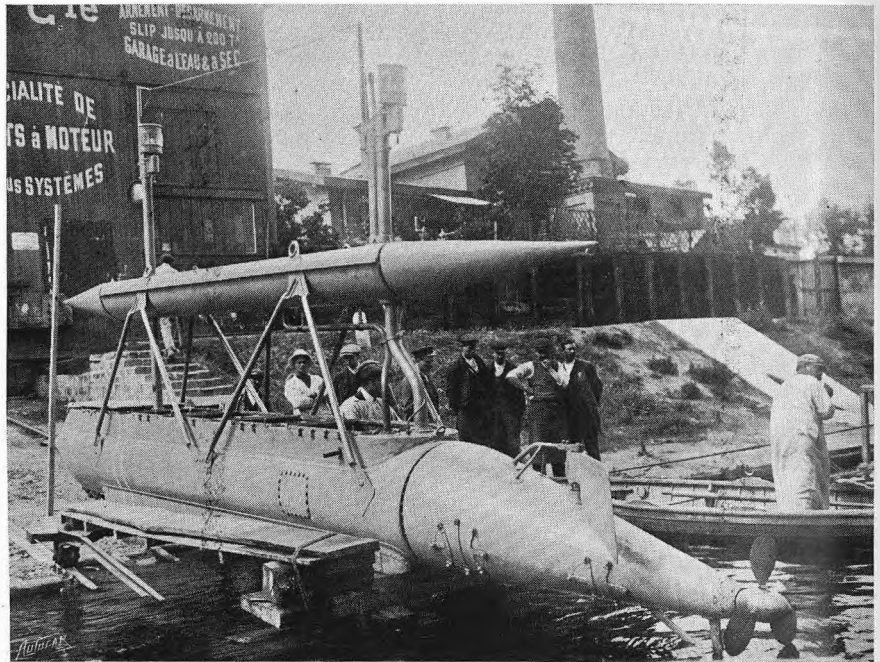
The classification of the cars into separate divisions or classes should not be by price, but by engine and other leading dimensions. As things stand now a common roughly-built car with a big engine may completely "smother" a far better car with a smaller engine. Indeed it does not pay to be little and good, so that the price classification does not tend to encourage the very best, and it certainly should do so if it is to have the right and most lasting effect on development. There is no novelty in the suggestion, as the R.A.C. and the Society worked out a series of classifications by engine and other leading dimensions, and these with a few modifications and improvements dictated by experience would be far more beneficial and useful than the classification by price.

We are aware that our criticisms have been pretty severe, but they are intended to save and preserve that inestimable benefit to the trade and to the whole motoring community, the Scottish Reliability Competition. If these abuses go on people will say, what certainly is untrue, that trials such as these are useless. We know that these things are done abroad to a far greater extent than in England, but that is no reason why absolute standard cars, driven absolutely rationally, should not compete in an honest and straightforward manner in the best trials ever organised. That trials even now are unnecessary we most emphatically deny. Why this should be is merely waste of ink and paper to explain, since a glance at the records of the famous six days shows. Out of sixty-eight entries only eighteen cars had a clean sheet. There were few cases of very bad luck, but, generally speaking, troubles were due to real defects. Until ninety-five per cent. of the entrants have clean sheets may the splendid officials of the Scottish Club continue to hold their invaluable competitions.

A Motor Driven Torpedo.

ON June 23rd there was launched from the boat yard of Coninck, at Maisons-Laffitte, Paris, a motor-driven torpedo, which is devised to be controlled electrically from a ship by a wireless apparatus. An Antoinette motor drives the torpedo, which carries at its bows an explosive charge of 770 lbs. Two collector masts are fitted, and on each of these is carried a lamp working in connection with the controller which guides the torpedo in accordance with the number of electrical waves established. For example, one wave steers it to the left, and to show that the order has been received and executed the rear one of the two lamps goes out; to keep it on its course nine waves are sent forth, the order is obeyed, and out goes the front lamp; to divert it to the right three waves are released, and the rear lamp blinks back three times; and so on. The upper part of the works contains the necessary petrol and oil, and rests nearly level with the surface of the water. One of the collector masts serves as an air intake, the other as an exhaust pipe. The

torpedo is calculated to maintain an average speed of twenty miles an hour for from eight to ten hours. It



costs £3,200. Tests of the controlling mechanism have been successfully carried out.

R.A.C. Dust Experiments.

Representations having been made to the Dust and Dustless Roads Committee of the Royal A.C. that more useful results might be obtained by substituting for the usual public dust trials for makers a private test, of which the results would only be communicated to the entrants themselves, for the "Makers' Trials" this year "Dust Experiments" will be substituted, to which the public will not be admitted. It is hoped (says the Secretary in his weekly report) that the result will be that nearly all makers will send in their standard cars, and not merely those who, believing them to be more or less dustless, expect to have a fair

chance of an award. It is only by a test of this sort against a large number of other cars under perfectly similar conditions that makers can really tell how their cars stand for dustlessness, and to what extent it is possible to improve them. The test will be exactly on the same lines as last year, except that there will be no admission of the press or public, and no publication of results.

The Inter-club Trials and tests of experimental devices will be on the second day, and will be exactly on the same lines as last year, when several interesting devices were tried.

We understand from a Dutch correspondent that British motor cars and accessories are much appreciated in Holland, and are more advertised in that country this season than they were last. Our informant states that if British manufacturers would only push their goods a little more and establish agencies he is sure larger business would be done.

* * *

Even at the present time many motorists are much inconvenienced by having to raise the bonnet every time they wish to flood their carburetters. Much inconvenience can be saved by the fitting of a simple flooding device known as Bowden's float agitator, obtainable from E. M. Bowden's Patent Syndicate, Ltd. The fitting of this device is extremely simple, and can be easily accomplished by the average amateur, while of its efficient working we can testify after having used one for two successive years.

Something like a record has been made in the life of accumulators in the case of a Castle accumulator fitted to a Maudslay car supplied seven years ago. A report is to hand to the effect that the car is still in daily use, although it has covered over 86,000 to 90,000 miles and nothing whatever has been done to the accumulator beyond charging it.

* * *

More than one of the cars figuring in the Scottish Trial provisional report as being delayed at starting were put behind their official time of departure by causes altogether apart from the car. For instance, on the fourth day's run at the moment when the driver of the 10 h.p. Riley wanted to fill up his radiator there was no water supply available, and as a result there was a delay in getting away. We also hear of another car being delayed through the hotel servants failing to call the driver.

Motor Union Notes.

(Communicated by the Secretary.)

Diary of Summer Tour.

- July 8.—Banquet to L.I.A.T. Delegates. Hotel Great Central.
 OFFICIAL TOUR (Saturday, 10th July, to Monday, 19th July).
 " 10.—Maidenhead, Henley, Reading, Oxford.
 " 11.—Oxford.
 " 12.—Warwick, Leamington.
 " 13.—Stratford-on-Avon, Cheltenham.
 " 14.—The Wye Valley, Swansea. Smoking Concert.
 " 15.—Visit Docks, Tin Plate and Steel Works. Garden Party, Civic Reception.
 " 16.—Speed Trials on Pendine Sands.
 " 17.—Tour of Gower Castles. Garden Party. Gymkhana. Official Dinner.
 " 18.—Swansea or Tenby.
 " 19.—Cardiff.

Please advise the Secretary whether it is your intention to take part in the tour.

Thursday, July 1st, was the day appointed by the Chancellor of the Exchequer upon which to receive the deputation from the Motor Union with regard to the amendments which it proposes to the motor clauses of the Finance Bill. It was also the day appointed to receive the deputation from the Union's Committee of Medical Motorists, which has joined with the one from the British Medical Association.

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Members whose subscriptions became renewable on July 1st are asked to kindly forward them to the Union with as little delay as possible. Subscriptions paid now cover membership up to June 30th, 1910.

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The L.I.A.T. Congress.

On Wednesday next a Reception Committee, presided over by Mr. W. Joynson Hicks, M.P. (chairman), will receive the foreign delegates of the International League of Touring Associations to the Congress which is being held in London at the invitation of the Motor Union. The subjects which have been put down for discussion at the Congress indicate its importance to motorists. Apart from purely political organisations, the L.I.A.T. is one of the largest and most powerful federations in the world. It has already a membership of half a million, and it is expected that the forthcoming Congress will see a considerable accession of members, as the national touring organisations of Finland and the United States, and a number of European associations interested in touring, are seeking admission to the League. The delegates who will be entertained by the Motor Union during the next two weeks represent the various clubs and associations of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Luxembourg, Holland, Russia, Sweden, Switzerland, and the United States of America.

The Official Banquet.

The attention of members is particularly directed to the London banquet, which will be given on Thursday night, July 8th, in honour of the foreign delegates. A very large gathering of influential motorists is expected, and all members of the Union are cordially invited. It has been found possible to reduce the price of the tickets to 7s. 6d., and members who intend to be present should apply for tickets at the earliest possible date. The chair will be taken by Mr. W. Joynson-Hicks, M.P., and ladies will be heartily welcomed.

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The Union has been consulted with regard to a dispute between a member and a firm of manufacturers, and has agreed to appoint an arbitrator to settle the dispute. In the past the Union has acted as arbitrator in several cases, thereby saving the parties concerned considerable legal expense.

The M.U. Tour and Swansea Meet.

The second number of the *Motor Union Journal*, which will be issued to-day, contains a revised programme and full particulars of the summer tour. Members are reminded that the tour commences next Saturday, and those who wish to take part should at once notify the Union, if they have not already done so. The tourists may travel by road in their own cars or by rail in the special saloon carriages which will be placed at their disposal. They will leave London on Saturday morning, July 10th. For those who travel by rail a break in the journey has been arranged in the form of a launch trip from Henley to Maidenhead, from which place they will proceed to Oxford to meet those who have travelled direct by road. On Saturday evening the Mayor of Oxford and the Oxfordshire A.C. will hold a reception of the foreign delegates and members of the Union. No formal programme has been arranged for Sunday, but the Oxford Reception Committee will conduct the visitors over some of the principal places of interest in Oxford. On Monday the tourists will proceed by road or rail to Leamington. In the afternoon Warwick Castle will be visited, and on returning to Leamington the Reception Committee, presided over by the Mayor, will entertain the visitors to tea in Jephson Gardens, where in the evening an illuminated concert will be given in their honour. On Tuesday, July 13th, the tourists will proceed to Stratford-on-Avon. Visits will be made to the birthplace of Shakespeare, Anne Hathaway's Cottage, and other places of interest. The Stratford Reception Committee, under the chairmanship of the Mayor, have made arrangements whereby members will be admitted free to the above places. At four o'clock on Tuesday afternoon a start will be made for Cheltenham, where in the evening the Mayor and the Local Reception Committee will hold a reception. On Wednesday, July 14th, a tour of the Wye Valley will be made, including visits to Chepstow and Tintern, a special train being provided for this part of the journey. Swansea will be reached on the evening of Wednesday, July 14th, and the Swansea programme commences with a smoking concert, at which the chair will be taken by Capt. D. Hughes Morgan, J.P., the president of the Welsh A.C. Into the three following days a long programme of entertainments and social functions has been crowded. The Swansea meet, at the close of the official tour, will take the place of the three Provincial Meetings of the Motor Union, which have been held annually for the last few years. Space does not permit of publishing here the details of the elaborate programme which has been prepared by the Welsh A.C. for this occasion, but full particulars may be obtained from the Secretary of the Union or the Hon. Secretary of the Welsh A.C., and will be found in the second number of the *Motor Union Journal*. Those members who are unable to take part in the whole of the tour are cordially invited to join the party at any place *en route* or to proceed direct to Swansea, but the Union will be glad if members will notify their intention to take part in any or all of the events, in order that an estimate may be formed of the number of those for whom arrangements must be made, so that those responsible will be able to arrange everything to work smoothly.

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The Motor Union. Chairman, W. Joynson Hicks, M.P.
 Albemarle Street, London, W. "Speedway, London." 9090 Gerrard.

The K.E.W. High-tension Magneto.

A Machine of Few Parts and Simple Construction.

A NEW high-tension magneto, known as the K.E.W., has lately been introduced by The Magneto Company, Dreadnought Works, Phillips Street, Aston Manor, Birmingham. By reducing the number of parts and simplifying these the vendors are enabled to supply this machine at a price which compares favourably with many of the well-known magnetos which are on the market.

Special attention has been given to accessibility. When necessary the contact maker cover can be instantly detachable, and the ebonite cover to the high-tension distributor is likewise detachable, a single thumb operated wing nut F holding the spring which keeps the covers in position.

The armature is of Siemens H type, and is built up of laminated and varnished soft-iron plates, so that the maximum magnetic flux is obtained in the armature, and also a freedom from eddy currents. The

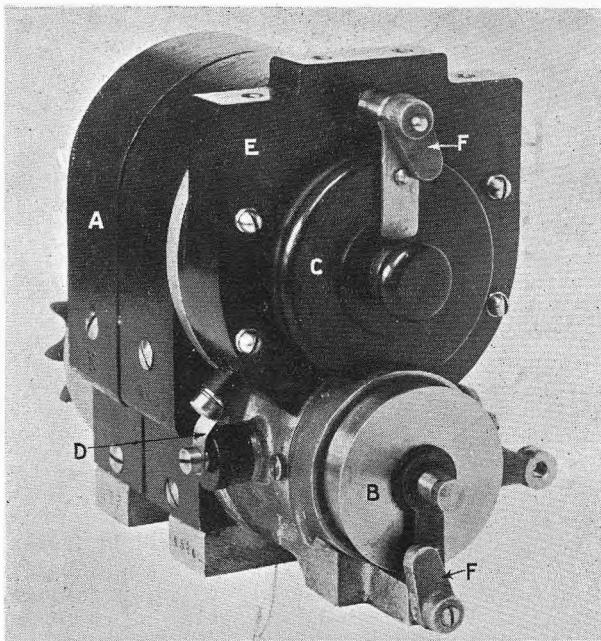


Fig. 1.—General view of the K.E.W. magneto.

- A, field magnets
- B, contact maker cover
- C, high tension distributor cover
- D, high tension connection to distributor wire
- E, Stabilite distributor base
- F F, thumbscrews to hold B and C in position

core carries the high and low-tension winding, the scheme of wiring being shown in the diagram (fig. 3). The condenser is carried at one end of the armature, and is secured to the core by means of a brass casing which is used to lock the condenser up as a solid part of the armature. The condenser is of mica, and is warranted not to break down, whatever speed the armature be run at.

The contact maker, the high-tension collecting ring, and the high-tension distributor are all carried on the armature-shaft at the opposite end to the condenser, which is at the driving end of the armature-shaft; thus as the distributor and contact maker end is quite clear of any obstruction it will be gathered that adjustment or attention to working parts is easy.

Fig. 2 shows an end view of the contact maker, which is extremely simple and easy to adjust when such an operation is necessary. The bell crank lever B has been given special attention. It is centred on a long hardened steel pin, so that no trouble will be experienced by slackness of the bearings or from swelling of bushes, as usually happens when this part of the mechanism is mounted on a red fibre bush. One end of the bell crank lever is kept in contact with the red fibre cam-shaped piece, the light flat steel spring D serving to give the necessary pressure on the bell crank lever.

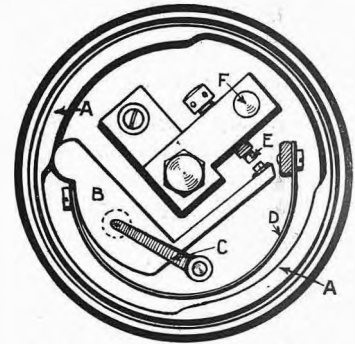


Fig. 2.—Sketch of the K.E.W. low tension contact maker.

- A A, fibre cam
- B, bell-crank lever carrying platinum contact screw
- C, spring pressing on end of B
- D, spring to operate B
- E, insulated contact screw

The latter is held in place endwise by the small flat steel spring C. The crank and block are thus kept square with each other, and over-adjustment of the contact screw E is at once seen, for the parts will not then look square with each other. The spring C can be turned round by the finger, and then the bell crank lever can be removed for inspection.

The other end of the bell crank lever has a platinum contact piece fitted, this serving to make contact with the platinum pointed screw E. The latter is mounted on a metal base and insulated from the contact maker plate, but is in metallic connection with the insulated end of the primary winding of the armature by means of the long screw which holds the contact maker in place. When the platinum points make contact by means of the rounded end of the bell crank lever falling into the cut out cam space of the red fibre disc A the primary circuit is completed, and electrical current passes through the primary winding of the armature, through the insulated platinum screw, and to earth by

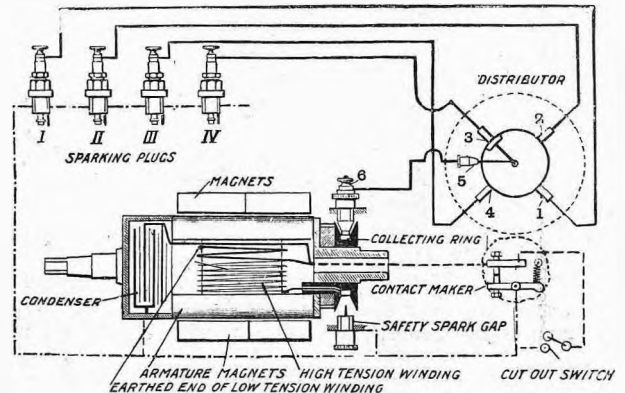


Fig. 3.—Wiring scheme of the K.E.W. four-cylinder magneto arranged for cylinders firing in the order 1, 2, 4, 3. 1, 2, 3, 4, distributor terminals for attaching the sparking plug wires.

- 1, II., III., IV., sparking plugs
- 5, terminal attached to collecting brush
- 6, collecting brush for high tension current

way of the bell crank lever, the circuit thus being completed, since the other end of the armature primary winding is earthed to the armature core. A point to notice is that the makers arrange to keep the primary circuit open as long as possible, so that overheating is prevented, and a more sudden rush of current is obtained.

Adjustment of the platinum pointed screw can be accurately made either with a screwdriver or with a tommy-bar. To adjust the screw the clip screw F is first loosened, then the screw E adjusted to the right position, and the clip screw F tightened, so that locking up the clip screw does not interfere with the adjustment of the platinum pointed screw.

The distributor-shaft is driven at half the armature-shaft speed by means of two to one gearing. The armature and distributor-shafts are mounted in Tormo load ball bearings.

At the outer end of the distributor-shaft is mounted the distributor piece. In one model this takes the form of an instantaneously detachable carbon brush which wipes over metallic segments, the brush being supplied at its centre with the high tension current from a wire embedded in the distributor cover. The high tension wires are connected to the distributor wipe pieces through the plug terminal holes in the usual manner.

In another form the terminals are fitted with spring-actuated carbon brushes, which continuously press on a collector ring and on a distributor ring, and either forms can be supplied as desired. The distributor in the 4Dz type is made in Stabilite, a special compound having extraordinarily high insulating properties, and not so brittle as Ebonite, nor does it take up moisture or oil nor swell like fibre.

Great attention has been paid to eliminating eddy currents in the armature and prevention of heating of the magnets and base. The magnets are made up in two single magnets, or in two pairs with soft iron pole faces, according to price and pattern; the body and base of the machine are of aluminium. The range of advance given to the contact maker is 35°. The screw holes in the base are set out at the same dimensions as well-known standard patterns. The weight of a four-cylinder model is approximately 15 lbs.

The same general construction of the magneto is embodied in the single and two-cylinder types, although, of course, in the single-cylinder model the distributor is not required.

It might be mentioned in conclusion that all magnetos are run for a long period sparking under a high compression, this being the final test before they are delivered from the works.

Automobilism in America.

An Interview with Mr. S. F. Edge on his Return from the United States.

IT is always interesting to have the views of an intelligent man upon any country, other than his own, which he has visited for the first time. Particularly is this so when the traveller is able by his personal connections to contrast like interests in both countries. Hearing, then, that Mr. S. F. Edge was lately returned from the United States, we hastened to New Burlington Street with a view of drawing our traveller to talk about his bustling visit. We found him seated as usual in his big office, quite in panoply of business, and after the usual greetings and congratulations on our part that there was as yet no evidence of an accent, we thought it well to plunge at once into the subject.

"Well, Mr. Edge," we asked, "and what do you think of America, and why did you go?"

Our subject suggested that the first half of the query could not have adequate attention in a short interview, and that as to the latter half, he crossed chiefly to satisfy his personal curiosity as to what was doing in the States.

So, descending from the general to the specific, and to get at matters which more particularly concern these columns, we asked Mr. Edge to give us some notion of how the motoring conditions which obtained in the part of the States he visited struck him.

"Well, you know," was the reply, "I only went as far west as Buffalo, but, leaving out the question of New York altogether, it struck me that the Americans are motoring a great deal more than we are in this country. I mean that motoring is a great deal more general; the percentage of people who own and use motor cars is obviously greater than it is here. You meet many more cars on the roads; indeed, motors are infinitely in excess of all other kinds of traffic."

We asked how our friend accounted for this.

Mr. Edge said that it was because the possibilities were greater for two reasons—one, that a far larger

number of people could afford motor cars, and two, there was a much larger section to whom motoring was almost a necessity. He instanced the farming class, members of which were brought into touch with each other and with civilisation by the cheap runabout, which had become to them an absolute necessity.

"But the roads, Mr. Edge," we returned; "one always hears that —"

"Oh, yes," interrupted our friend; "one always hears a lot about the roads in the States which is not true. There are vast lengths and extents of good roads in the States quite suitable and comfortable for motor traffic, but, of course, the percentage of good roads to the area of the country is not nearly so great as here, although that percentage is rapidly increasing every year, and will continue to increase. Even in the West, where the roads are bad, people still motor, because, although it is not the pleasant form of progression it is on the better roads found farther East, it is, after all, better and more convenient than any other form of transport, and by its possibilities permits people to go and live in places and on properties which before its advent they shunned altogether by reason of being very much shut off from the society of their fellows. This much at least has motoring done for many lonely and distant places in the States."

"What class of car is used for this work?"

"Oh, the comparatively light, high-built car—that is to say, in the country districts—but in the cities there are large numbers of people who drive big cars for pleasure even as they are driven here. Indeed, the number of big, high-powered cars in some of the cities quite amazed me. In and around large centres of population the big car is more a feature of the road than here. So many more people drive their own cars, too, which is due partly to greater keenness on the subject of motoring, and partly, maybe, to the lack of and the difficulty in obtaining chauffeurs."

"Keener than we are here?" we asked in some astonishment.

"Oh, yes, certainly keener."

"Then if chauffeurs are difficult to obtain, the average American must have plenty to do to his own car?"

"Well, you see, in the provincial towns and cities— not New York—the garage system is so much better than in this country. Cars are kept very largely, if not wholly, in garages, where they are housed and carefully looked after and maintained in a manner quite foreign to garages in this country. A man always finds his car ready to go out. That is because the system is so general, for very few private residences have motor houses of their own."

"How do you consider that American motor cars compare with cars here?"

"Some of the big cars of three or four of the leading makes are quite as good as the best chassis made here. They will do all you can ask them to do."

"Now," said we, seizing the bull by the horns, "are they equal to a Napier or a Rolls-Royce?"

"Yes," was the instant reply, "in many particulars. Take the Pierce-Arrow, for instance, a car of which I saw more while I was over than any other. It is an excellent vehicle, in every way first-class, its only archaic feature being the use of six coils for the six-cylinder engine. The Pierce-Arrow people have extremely good works where everything is very well done."

Having some recollection of the early days of the Yankee cycle industry, and the great fuss made with regard to repetition work, and its subsequent effect here, we asked Mr. Edge if he discerned similar symptoms in the motor industry of the States, but his reply was more or less in the negative.

"You see," said Mr. Edge, "many of the big factories have large quantities of their stuff put out, and under these conditions they may, and probably do, find that the quality of their output varies. This is perhaps at present the weakest point in American motor manufacture. It makes perhaps for cheapness, but it is a great danger, and is the reason why at Acton we try to make everything and every part of a Napier car as far as possible."

"How do our fellow motorists fare as motorists on the road, Mr. Edge?" we asked. "In 'the Land of the Free,' and with a people who claim to be in the forefront of progress, the persecution and injustice which motorists meet with here must surely be conspicuous by its absence?"

"Oh, well, I don't know as to special freedom and advantages, but I did notice—indeed, no one could help remarking—how closely the law is respected, and how perfect is the behaviour of the traffic. I never saw a vehicle out of its proper place, and as to what you describe as the selfish user of the highway—that is to say for a vehicle to wander out on to the crown of the road, and cut a third of it to waste on the inside, to the detriment and delay of all the rest of the traffic—the thing isn't done. Either the American drivers won't do it, or are afraid to do it. Every London policeman, including the Chief Commissioner, would be the better for such an object lesson. Really the people seemed frightened to do anything wrong. They obeyed the directions of the police without the slightest grumbling, and if in coming from a side street a motorist or horse vehicle was held up, he did not hang over and obstruct the foot passengers desirous of crossing,

but quickly got in his reverse and went back out of the road. He seemed to think something horrible would happen to him if he didn't. I don't know what would have occurred, because I never saw a driver who transgressed in any way. I was extremely interested in the traffic management, and it seemed to me that whoever was at the head of affairs had issued clear, definite instructions as to dealing with modern traffic, which he had obeyed to the letter. The effect of a police whistle on the traffic was electrical."

"Keen to find some flaw in all this, we gently whispered a query as to road surfaces in New York, and Mr. Edge's enthusiasm suddenly vanished. He said quite promptly that the street surfaces in New York were a disgrace to a great city.

So we suggested the backward folk of this city have still something to be thankful for.

"Oh, yes," laughed S.F.; "London wants a lot of beating in some points, but I do wish our traffic was controlled on the same lines as that of New York."

In reply to a query as to the commercial side of motoring, Mr. Edge told us that the taxicab was only just beginning in New York; he could not but think that it had a great future before it there. "I can't think," said Mr. Edge, "that business men of means will go on using the noisy, uncomfortable, scrambling means of transport, such as the tubes and the overhead railways, when they can go to their offices in comfortable and reasonably fared taxies. The tubes in New York are nothing like so quiet, clean, and comfortable as our own. But the taxi, if it is properly kept up, which it is not there at present (those I saw about were very shabby, and a great contrast to ours), will surely appeal to all the people who can afford them."

"Do our cousins differentiate in the matter of motor bodies at all from us?" we asked.

"Well," was the reply, "I noticed a type of body called a miniature tonneau, which is an outgrowth of the two-seated racing car, and which struck me as very nice, smart, and convenient. We have nothing quite like it here. Oh! and another thing which struck me in New York," continued Mr. Edge, "was the standing of many large, well-appointed, high-powered cars for hire in the streets outside the hotels. I counted as many as thirty-five Packards presumably engaged in this service. There do not appear to be any high-grade small cars at present, but doubtless the demand will arise there for these as it has done here."

The telephone bell had gone twice, and sundry of Mr. Edge's able lieutenants had looked somewhat severely into the room in our direction.

Mr. Edge exhibited much enthusiasm in replying to our final query. He regretted he had not gone to America five years ago. Indeed, he seemed to suggest that had he done so, 14, New Burlington Street, might have been in Broadway. He is more than emphatic on the obvious chances which offer in the States, altogether out of proportion to those in this country. Of his reception on all hands Mr. S. F. Edge cannot speak in too grateful terms. Everywhere he was received with the keenest welcome, and found cars put readily at his disposal by hospitable people whom he hardly knew.

By a few words dropped as we made way for the impatient members of the staff, we imagine that the States have not heard the last of the Napier cars or the names of Napier and Edge.

On the Track. By H. C. Lafone.

UNFORTUNATELY, these notes have to be despatched at a time which just makes it impossible for me to comment on this week's meeting at Brooklands, but I hope to be allowed to deal with the main features of the racing in *The Autocar* next week. At the moment of writing chief interest, of course, centres in Nazzaro's prospects of setting up new world's records for sundry of the shorter distances. Whether or not the Italian will have succeeded in knocking down the old figures before these lines appear in print I do not propose to guess about, but I will say that if he is not successful, he will be quite justified in attributing his failure to the abominable weather which has hindered him ever since his appearance on the track. Those who have never driven at very high speed in the rain may imagine that the effect of a shower, or even of a steady downpour, will merely be to make things unpleasant and damp for the high speed driver, but let them but once travel in rain at, say, eighty miles an hour, and they will find that not only does the water make things uncomfortable, but that it renders existence absolutely unbearable. They will find, perhaps, for the first time, that rain does not fall vertically, but dashes at them horizontally, getting under the cap's peak, however low it may be pulled over the eyes, and making it quite impossible to keep a watch ahead. If goggles are worn the water blurs them, and prevents that clearness of vision which is absolutely indispensable when the car is moving at a speed which makes an express train's best effort appear by comparison a crawl.

On Wednesday and Thursday in last week, Nazzaro did all he could between the showers, and travelled fairly well, but evidently not quite to his own satisfaction. The average of several laps timed by me was ninety-nine miles an hour, but, of course, this speed had to be materially improved upon if he was to better his own performance at Brooklands last summer. On Friday the rain was incessant, and the famous driver put in his time making various adjustments, particularly to the carburetter. A big and enthusiastic crowd filled the paddock on Saturday afternoon in the hope of witnessing an attack on some of the standing start records, but the visitors were doomed to disappointment, for, after Nazzaro had completed a couple of practice spins, the rain once more came down in torrents, the storm lasting till almost seven o'clock and putting any further driving out of the question. On Monday afternoon the elements were somewhat kinder, but Nazzaro's evil star was evidently still in the ascendant. Having made several experiments with carburetter jets of various sizes, the largest appearing to have an opening about $\frac{1}{4}$ in. in diameter, the Italian did a lap at the rate of slightly over 101 miles an hour, but was then obliged to retire with a damaged back axle. His tyres were blown up very hard, and, at one of the worst bumps, the frame had come down hard on to the axle, and had bent it so much that the near side driving wheel was badly splayed. In connection with this matter of very tightly pumped tyres, it may be remembered that last week I ventured to suggest comparatively low pressures in very big covers.

Mr. Massac Buist has taken me to task for putting forward my low pressure theories, his argument being that "the enormous side strains" on the banking would tend to tear the covers off. But, with all respect to Mr. Buist, there are *no* side strains at Brooklands if

a driver takes the banking at the correct height. It is for the very purpose of eliminating side strains that the banks have been built. As Nazzaro long ago forsook his evil way of cutting the tail of the banks, and now takes the proper course all round, I really do not see quite why his covers should be more likely to rip off on the banking than on the flat, however low the air pressure.

We had a chance of seeing Mr. Guinness's 200 h.p. Darracq at Brooklands on Thursday evening of last week. He never let it out, but his performance was very fine, all the same, and augured well for success at the Saltburn speed trials, for which he was training. Mr. Tate's big Mercédès was also going extremely strong, averaging just about one hundred miles an hour for the lap.

One of the most interesting novelties I have ever seen was being officially tested by the R.A.C. on the track last week. This was the Challenge Reinforced tube, which came through its ordeal with flying colours. This tube has embedded in the rubber one, two, or three layers of fabric, which extend almost entirely round the tube. To obtain the necessary elasticity, *i.e.*, to allow the tube to expand as it is blown up, the fabric is discontinued for about one inch just where the tube is protected by the rim. Here the rubber is of double thickness to provide for the stretching. A series of holes in each in diameter had been punched right through the cover surrounding this tube, but the tube itself showed no symptom of blowing out. The most amazing point was this: One of the rim holes in the cover had torn out and become about $4\frac{1}{2}$ in. long and $2\frac{1}{2}$ in. wide, and the tube had not burst even through this gaping chasm. When I saw the cover the car had run over two hundred miles on it as it was. The air pressure I tested myself, and found to be 55 lbs. to the square inch. As there is practically no loss of resilience with it, the future of this tube appears to me decidedly promising.

Next week we shall really have the hundred-guinea car! Mr. Jackson, of "Jackson racer" fame, is just marketing a small Jackson. The engine is a $6\frac{1}{2}$ h.p. De Dion. It has accumulator and coil ignition and thermo-syphon cooling. A metal to metal disc clutch conveys the drive to a neat three-speed and reverse gear box, whence the final drive is by countershaft and side chains to the back wheels. The frame and body are all pressed out of one piece of metal, and ball bearings are fitted throughout. The first of these small machines was at Brooklands on Monday last, and Mr. Jackson is going to make yet another attack on Bogey with it.

Netherhall Gardens on Top Gear.

On Monday afternoon last we were afforded an opportunity of watching from the seat the sweet, certain, and unconcerned manner in which, with two passengers of average weight, the 45 h.p. six-cylinder Sheffield-Simplex will ascend Netherhall Gardens, Hampstead, on its top or only speed (emergency gear not accounted). The climb was effected twice, the hill being taken from the Finchley Road at a crawl. There was an armchair kind of ease with which this delightfully sweet running car swept round the sharp left-hand bend where the gradient is steepest that was more than refreshing.

Ligue Internationale des Associations Tourists.

Congress in London and Summer Tour.

THE International League of Touring Associations constitutes one of the largest and most powerful federations of its kind in the world. It has already a membership of half a million, and is steadily growing. Founded in 1898, it is, as its name suggests, an international league of the principal touring clubs, formed with a view to securing from the different governments of Europe facilities of all kinds for tourists, and especially for the users of motor cars, and with a view to preventing legislation hostile to motorists. Each of the constituent associations retains complete autonomy in its own affairs, whilst for the administration of the League there is a central office known as the Bureau Central, which is managed each year by a different association. This year the congress will be held in London on July 7th, 8th, and 9th at the invitation of the Motor Union, and the management of the Central Bureau will devolve on the Motor Union for the succeeding year. The delegates to the congress will represent the various clubs and touring associations of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Great Britain, Luxembourg, Holland, Russia, Sweden, Switzerland, and the United States of America. The Motor Union has prepared elaborate entertainments

for its foreign guests. On Thursday, July 8th, an official banquet will be held in London in their honour, at which a large and representative gathering of motorists and others interested in travel is expected. On Saturday, July 10th, a start will be made on the summer tour which has been organised by the Motor Union. The route has been carefully chosen in order that the foreign delegates may be afforded an opportunity of visiting some of the most beautiful and historically interesting places in Great Britain. Proceeding *via* Oxford, Warwick, Leamington, Cheltenham, Stratford-on-Avon, and the Wye Valley, to Swansea, the Motor Union's foreign guests and the large number of members who are joining in the tour will be entertained at each stopping place by the Reception Committees that have been formed for that purpose. At Swansea a three days' meet has been arranged in conjunction with the Welsh A.C., who are the Motor Union's representatives in this district. The Corporation of Swansea have voted a sum of money towards the entertainment of the delegates, and the Mayor will hold a civic reception on Thursday, July 15th. Garden parties, speed trials, gymkhana, and visits to places of interest in the neighbourhood go to make up a splendid three days' programme.

Petrol Importation and Taxation.

PRESSURE is now being brought to bear upon the new Port of London Authority by the large importers of motor spirit for increased facilities for the importation of petrol. As is known, the nearest point to London on the river where motor spirit may be stored in bulk is Thames Haven, a few miles inland from Southend-on-Sea, and from this place of bulk storage the whole of the imported motor spirit has to be carried to London either by road tank cars or railway tank waggons, either of which operations is very costly. It is urged that if the present unreasonable restrictions were abolished the retail price of the spirit in London could be dropped at least one penny per gallon.

While much agitation continues to be waged against the enforcement of the 3d. per gallon tax upon motor spirit, our Governmental departments are making their arrangements for the collection of the tax throughout the country. At first it was the general belief that the spirit would be taxed at the port of entry, and this opinion was strengthened on account of the excise authorities opening negotiations the effect of which would be to make the large storage installations

bonded stores for the time being. Another plan of action has, however, now been decided upon. The spirit enters the country duty free, and is stored, as it hitherto has been in the bulk stores at Thames Haven, Barrow-in-Furness, Avonmouth, and other places. When occasion requires the spirit is taken from these large storages and packed in the familiar two-gallon tins, and then despatched to the wholesale stores owned by the various distributing companies in the large centres of consumption. It is only when the spirit leaves these wholesale storages for the hands of the retailer that it is taxed. A special delivery book has now to be kept, and the whole of the consignments leaving the wholesale stores entered therein. The tax is 3d. per gallon upon the whole quantity delivered, the onus of claiming and receiving the rebate of one half for commercial vehicles resting with the consumer himself. Although no special line of action has been laid down, it is believed that all claims for rebate will have to be made to the local excise officer, whose duty it will be to make himself certain that the spirit has solely been utilised for commercial uses ere he grants permission for the payment of the rebate.

Every reader of *The Autocar* will, we are assured, agree with us when we say that Mr. Lionel B. Martin deserves the sincerest thanks of the whole body motorate for the most plucky and persistent fight he put up against the combined attempted tyranny of the Richmond magistrates and the police. On the findings of the Lord Chief Justice, Mr. Justice Jelf, and Mr. Justice A. T. Lawrence, it will be no longer necessary that motorists should be forced to make long and expensive journeys either to plead guilty to, or to fight the majority of frivolous charges which are to-day preferred before so many benches in all parts of this

country. So long as the offence does not incur a sentence of imprisonment under the Act of 1903, a motorist charged need not attend personally, but may appear by solicitor. The remarks of the Lord Chief Justice in the matter cannot be too strongly emphasised. His Lordship said that it appeared to him that the warrant issued to compel Mr. Martin's appearance was intended to enable the prosecution to establish their case, if not to give evidence against himself. Mr. Justice Jelf's remarks were almost stronger, for that learned judge said that it was a case in which the liberty of the subject was at stake.

In the House of Commons.

Tuesday night.

Two important deputations will wait upon the Chancellor of the Exchequer next Thursday. One is from the Motor Union, and the other will consist of mixed representatives of motorists and the British Medical Association. The first interview will deal, naturally enough, with the whole question of motor taxation, and, it is expected, a vigorous protest will be made against the proposals contained in the Finance Bill. The second will be concerned solely with the aspect of the Bill so far as it affects medical men, and in this case further relief will be requested.

Mr. Jeremiah MacVeagh asked the Chancellor of the Exchequer whether he can say if the proposed tax on petrol includes gasoline or refined petrol used for lighting purposes.

Mr. Lloyd George: Gasoline or refined petrol comes within the definition of motor spirit. But if the hon. member will refer to Clause 65 of the Finance Bill he will see that the intention is not to tax motor spirit used for purposes other than supplying motive power for motor cars. It will be a matter for decision by the Commissioners of Customs and Excise.

Is it Persecution?

The police in Godalming appear to be again very active in their persecution of motorists. Recently the ten-mile limit was granted through the whole of the town, and day after day a trap has been set. Several cars were stopped on a recent Sunday, and drivers of cars should be careful to drive very slowly from about a mile before reaching Godalming on the London side until the foot of Hindhead is reached.

On Sunday evening, June 13th, a trap was laid for cars returning from the Portsmouth direction and approaching Eshing Lane on the outskirts of Godalming. A policeman in plain clothes may be seen standing high up in the trees. When a car reaches the ten-mile notice board he gives the signal to the superintendent who is on the railway bridge, and who times the car. When the car reaches the bend of the road to come up the hill into Godalming another plain clothes policeman will be noticed saluting in some way as the car reaches him. The superintendent who is timing the car sees this signal, and if the car has travelled beyond the ten-mile limit he signals to another policeman some distance along the line, who then signals across to a policeman in uniform who is hiding behind a house. When this uniformed constable gets the signal he immediately goes up a passage into the road and stops the car.

Another trap laid at an early date was in Bridge Road. This was a double trap working to and from Godalming. A plain clothes policeman stands on the bridge crossing the river Wey with his back to the road, and signals with his hand over the side of the bridge. This can be seen by the other end of the trap, but not by the motorist.

There appears to be only one object of the police in the Godalming district, and that is to catch as many motorists as possible. There were recently two cases of burglaries and no clue—one of these only on Sunday last. No wonder when the police are heart and soul in some other object!

We wonder if the police have permission to use the railway for the purpose of trapping.

The Prince Henry Tour.

The following awards in the Prince Henry Tour are reported from Berlin:

Prince Henry Trophy and Imperial Automobile Club of Germany's Prize.—Councillor Wilhelm Opel (Opel).

Bavarian Automobile Club's Prize.—Willy Pöge (Mercedes).

Austrian Automobile Club's Prize.—C. Kittsteiner (Opel).

Hungarian Automobile Club's Prize.—Eduard Forchheimer (Benz).

City of Vienna's Prize.—Ernst Sachs (Opel).

City of Budapest's Prize.—Dr. Ludwig Opel (Opel).

City of Berlin's Prize.—Count Kolowrat (Laurin and Klement).

An Ideal Pavement for Motor Roads. Cork Asphalt.

With the question of road improvement so very much to the front, it is interesting to have some particulars of what appears to be a substance which would make an ideal pavement for motor used roads in cities. This substance is known as cork asphalt, a compound of bitumen and other materials, including cork. It is claimed to be both durable and elastic, non-absorbent, and therefore absolutely hygienic and sanitary. From actual observation of the London and Chatham portion of the entry to Victoria Station, where a sample is to be seen, we can testify to the fact that it is comparatively noiseless and non-slipping. These characteristics are, of course, very valuable from the motorist's point of view, as is also the fact that the pavement is non-skidding in wet weather, without the necessity, as is the case with wood pavement, of the surface being sprinkled with finely broken flints, which are so destructive to pneumatic tyres. The substance is supplied in homogeneous blocks of uniform size. As it is also a good non-conductor of heat, frost does not act upon it so readily as on other kinds of pavements. The cork asphalt has been laid down in the Royal Mews at Buckingham Palace, and in Godliman Street, E.C., where there occurs very heavy traffic on a steep gradient, and where, when granite blocks obtained over a year ago, the noise of the traffic was such that people complained and vacated their offices in the vicinity. With the cork asphalt the street is almost noiseless. The substance is claimed to be absolutely damp-proof, most easily dried, and readily cleaned. We understand from those interested that it is very little dearer than the objectionable wood pavement, and will, moreover, last three times as long, while it wears quite evenly all over its surface.

In our report of the car section of the Motor Cycling Club's London-Edinburgh Twenty-four Hours' Trial we made a statement about Miss Muriel Hind and her 25 h.p. Deasy which was not quite correct. We stated that she carried some of the M.C.C. officials on her car. As a matter of fact she did nothing of the kind either on the outward or return journey. She was accompanied by one lady passenger, and our mistake was due to the fact that Miss Hind was acting as second official car. That is to say, she followed up the official car in case that broke down, when she would have taken on the officials to their destination. We must congratulate Miss Hind and her lady companion on the trip which they made of some 800 miles, not a mere potter, but in two prolonged instalments of 400 miles each.

The Police and Motorists.

Judicious Driving Only Necessary to Abolish Traps.

THE Standing Joint Committee, as the police authority of Norfolk, has issued to motorists the letter which we print below. It should be particularly noted by the police authorities of certain other counties that the problem of dealing with motor traffic has been successfully solved by a manly and straightforward note to motorists; which has done more to attain the end in view than have the sneaking hide-and-seek police traps of other counties.

Sir,—I am permitted by the Joint Committee, which is the police authority for the county of Norfolk, to address the following letter to motorists driving in this county.

Last year the Joint Committee gave instructions to the police to the effect that police traps upon the open road and prosecutions for simply exceeding the speed limit were not approved of, but that the action of the police should be confined to preventing and punishing dangerous driving. They were instructed to stop motorists whom they considered to be driving dangerously, whatever the speed might be, and hand them a printed caution, and motorists generally were made aware of the attitude of the Norfolk County Police. The result was extremely gratifying, and goes to show that the bulk of motorists are honestly desirous of playing fair with a county in which they are fairly treated.

As the touring season is now approaching, when a great many cars will visit Norfolk, it has been thought well that I should again remind motorists that the police authority of this county are extremely reluctant to proceed for mere infringements of the speed limit if dangerous driving can be otherwise eliminated. I have therefore to ask all motorists to exercise the greatest care in driving through the villages and towns in this county, and, in particular, along the coast road from Wells through Sheringham and Cromer to Mundesley. This road is extremely narrow, full of turns and

sharp hills, and frequented in the summer by persons driving small pony cars (very often unskilfully) and by children. It is such a road that a ten-mile limit may have to be imposed upon it if it is not used with greater consideration by motorists.

I trust that owners will not only assist the county authority in the manner indicated when they are driving themselves, but will impress upon their chauffeurs most stringent instructions to the same effect, as it cannot be overlooked that a great deal of trouble has arisen through the speed which the chauffeur drives at when he is alone, or taking out his fellow servants for a drive.

Trusting that this appeal will not be in vain,

I am, sir,

Your obedient servant,

G. CHRISTOPHER DAVIES,

Clerk of the Peace for the County of Norfolk.

The Shirehouse, Norwich.

June 28th, 1909.

The Devon and Cornwall A.C. has addressed the following letter to us on the same subject:

MOTORING IN DEVON.

Dear Sir,—May I on behalf of the committee of the Devon and Cornwall A.C. ask you to be kind enough to appeal through your columns to motorists who intend touring in Devon this season to use every care to avoid giving any ground for offence to the police and others, by driving considerably, more particularly through villages?

There are at present no police traps in Devonshire, the club and the police being on excellent terms, and my committee have reason to believe that if due care and consideration for other users of the roads be shown by motorists, and assistance given to the police in bringing to justice any cases in which such care and consideration are not shown, they will refrain from resorting to the otherwise inevitable traps.

Yours faithfully,

A. E. NIAS, Secretary Devon and Cornwall A.C.

Huntingdonshire Police Traps.

THERE is no doubt that many of the people in Huntingdonshire who would not be altogether expected to sympathise with motorists have recognised that they do not usually get fair play when caught in a police trap. Only the other day a motorist was warned of a trap by a man carting manure. It was a purely friendly act, as the man was right out in the field, and at first his gesticulations puzzled the motorist, but the labourer pointed down the road to a railway bridge, so that the motorist prepared himself for anything, and crept cautiously through the bridge. Once through it he found an innocent-looking person standing with a bicycle in a most draughty and uncomfortable spot on the other side of the bridge. This man looked suspiciously like a policeman in plain clothes, so, to take no risks, the motorist stopped a few yards further on, and then proceeded to crawl, to find a real genuine uniformed constable ready to receive him. The uniformed individual saw that there was no luck in this instance, and the humour of the situation came in by the man enquiring the road to the next place. The policeman told him, and then, as an afterthought, suggested an alternative route which would have taken the motorist through a place where the motorist knew a trap was established. However, he did not betray his knowledge, and after thanking the policeman drove on, only to be warned later by a driver of a brougham of another trap. He was very much struck by this very friendly feeling and consideration, as it certainly demonstrated that the Huntingdonshire people are by no means the anti-motorists that might be imagined from the decisions of some of the benches in the county.

There is no doubt that many of the roads in Huntingdonshire are tempting, and there is also no doubt that there has been some unreasonably fast driving over these roads. What we complain of is that there is no discrimination, and a motorist who is driving in a perfectly safe and reasonable way is treated precisely as though he had really been driving furiously. If there were an honest desire to regulate traffic, and not merely to collect outrageous fines, there is no doubt all reasonable requirements could be met by the occasional posting of men in uniform at spots where the county authorities consider special care should be taken. If this were done, and the police were instructed to stop and courteously warn all drivers to take special precautions or to go slowly, there would be no friction of any sort, and every reasonable non-motorist would be perfectly satisfied.

Mr. C. D. Rose, a former chairman of the Royal Automobile Club, was amongst those who received birthday honours from the King in the form of a baronetcy. Sir Charles is a vice-president and a life member of the Club, which he joined the same year as he entered the House of Commons (1903). Sir Charles has done yeoman service for automobilism.

* * *

A police trap is working by flashlight on Millbank, between the old Vauxhall Suspension Bridge and the Tate Gallery, for a measured furlong. There are also intermittent flashlight traps in Whitehall and on the Embankment between the tunnel where trams turn off to the north and the Houses of Parliament. Traps have also been worked in Grosvenor Place.

Correspondence.

EDITORIAL NOTICES.

No letters from members of the motor industry will be published when they deal with subjects which may be regarded as advertisements for the writers' or their business interests. At the same time as many of the most practical suggestions come from those engaged in the motor industry, their letters will be inserted when possible, though the names of the firms they represent may be expunged, and the initials of the writers substituted.

Letters of a personal nature will be withheld.

The Editor, although accepting no responsibility for the opinions expressed by correspondents, reserves the right to publish a portion of a letter, and to omit any part which he does not consider interesting or essential.

All communications under a *nom de plume* should be accompanied by the name and address of the writer, not necessarily for publication, but to assure the Editor as to good faith.

Inquirers who ask for the experiences of private owners with specified cars, parts, or accessories, are requested to enclose a stamped addressed envelope, so that replies which space will not permit us to publish may be forwarded to them. Circulars or letters from interested parties will not be forwarded.

SMALL CAR RACES.

[14384.]—In company with several other Englishmen I had the pleasure of witnessing the Grand Prix des Voiturannes, or small car race, at Boulogne last week. I am somewhat hazy as to the true intentions of the organisers, but I believe it to be a race for the purpose, among other things, of proving which is the best type of engine—single-cylinder, twin-cylinder, or four cylinder—also to improve the breed generally.

Now, it is common knowledge that a single-cylinder engine is the most efficient size for size, or rather when the combined cubical capacity of the twin or four-cylinder does not exceed that of the single the latter must be the more efficient. That being so, what does the race prove? In my opinion, absolutely nothing. First of all, who would care to sit in most of the cars constructed for this race, particularly the single-cylinder cars? The sensation of sitting on one of these is akin to that of riding on a gun carriage with the gun limbered up and, if it were possible, firing away at full blast. Those who saw the race will know what I mean. For those who did not I will explain that the cars bound; they do not run. The movement is more like a kangaroo's leap than anything else, and the noise and vibration of some of the vehicles are awful.

As I said, the race has proved nothing; it has only confirmed a theory, that one big gun barrel is better than four little ones. One does not attempt to pierce armour plate with a Maxim. It was a sporting race as far as I could see from the barricades, and the best man undoubtedly won. Guiponne has had a good training, I understand, on racing motor bicycles, with probably more kick in them for their size than his car. At corners there is probably no man his equal in England or the Continent on the particular type of vehicle he now drives, and he must be up to all the moves on the board, and they are sometimes made more rapidly than at chess.

Well, Guiponne won, and won well. Another car of similar make to his was second, and still another fourth. But what do we know more about small cars now than we did before the race? Nothing. The winning cars are never heard of in this country now, and if they were they would be so little like the car that won at Boulogne that no one would recognise them as emanating from the same factory. The engine is a special one I saw it, and it has more than one auxiliary exhaust valve besides several other features which are not embodied in the commercial Lion-Peugeot.

I was much amused last year by reading letters in *The Autocar*, written by some misguided individuals, regarding racing for small cars. They wanted to know why Rover, Humber, Swift, etc., did not build cars to run in these races. I laughed at the time, because I knew how little chance they would have if they had done so. These firms, with the Englishman's confiding trust in everything, would have built cars of the accepted touring type with perhaps one or two details altered from standard for the sake of lightness. They would have gone over to Boulogne full of hope until they saw a French racing small car, and then "Tableau." But Humber, Rover, Swift, and other British firms have too much sense to attempt to compete with cars which are built for speed and buck jumping. English cars are wanted for touring, not hunting.

Some people appear to have been misguided enough to think they stood a chance with a four-cylinder engine not exceeding the cubic capacity of a single. They might as well have stayed at home; perhaps they did not expect to win. The Calthorpes are natty and trim, and will catch the eye of some Varsity motor cyclist whose rich relation has just left him a few thousands. Personally, I would very much prefer one of these jampot cylindered cars to a

glorified motor cycle on four wheels. The wheels will keep on the ground at speeds of about 35 m.p.h., and that is more than some will do. When shall we see the finish of this farcical one-sided business, which proves nothing, and when are officials of clubs and organisations going to frame rules for competitions that really will improve something?

Probably our Scottish trials are the best examples of what can be done by competition to improve the construction and design of motor vehicles, but some other bodies I hear about are sadly deficient in useful rules to govern their events, and even when rules are

made they are like pie-crust—only to be broken.

If the R.A.C. were to organise a small car race now in the Isle of Man we might (I say "might") have a good race, and also obtain some valuable data to go upon. But it should be on cubic capacity alone, and entrants, if trade, should be compelled to hand a duplicate car to the club for examination, the duplicate to be an exact counterpart of their model for the succeeding year. After the race all winning cars to be examined, and any deviation from duplicate to be noted, and if serious the car to be disqualified. Very few French cars would enter, because such a regulation would bar them out in most cases. Although such firms as Bayard-Clément, Renault, De Dion-Bouton, Aster, Charron Girardot, Voigt, Brasier, etc., could and are building some delightful small touring cars, and would make things hum in a race, they would not enter, because they would not understand a race for standard pattern or next year's pattern vehicles. That, in my opinion, is the reason they have boycotted the race this year. They will not build specials of the ricochet type, and know their standards do not stand a ghost of a chance.

I have been led to pen these few lines purely from a spectator's point of view, and because I read accounts of the race sent to English daily papers in which sympathy was expressed for the plucky little Calthorpes, and they were patted on the back and told to be good boys and do better next time. To tell the truth, they were fairly well handled considering the opportunities the men got for practice, but as for a chance of winning they were out of it from the moment the flag dropped. I could have told them before they went what chance they had if they had told me the top speed of their cars; but perhaps they had some fun, and the cars will not sell any worse for their cross-Channel trip. Probably, if they had been made with engines which lifted the whole top of the combustion head every time the exhaust wanted to come out, they might have done some good.

Has anyone who contemplates the purchase of a small car ever taken a ride in or driven a car with a very high compression single-cylinder engine? If so, he will know what I mean by a bounding car. High compression is the very last thing we want on a small car for comfort, and although perhaps nothing is gained by going abnormally high with the compression, a point sufficiently high to destroy all comfort is used on these racing cars to gain a little extra efficiency. If the efficiency be gained at the expense of comfort and wear, what good purposes do these races serve? None, in my opinion, except advertisement. *The Autocar* has always existed for the enlightenment of its readers, and if this letter merely inform them of the actual difference between a British and foreign small racing car I am content.

MONTE CRISTO.

A DEFINITION WANTED.

[14385.]—May I ask that *The Autocar*, as one of the authorities on things motoring, should give to the public in general, and to readers of *The Autocar* in particular, a definition of what is a "Man of moderate means?" I have examined him from my lowly standpoint of £700 a year income. I have in imagination gone to a lower financial level, and as a curate on £250 criticised this "bogey man." Then putting my fancy on its top gear I have mounted to the dizzy heights of "Something in the City" at £5,000 a year, and looking down I have scanned this "Man of Moderate Means," but all to no purpose. He takes a different appearance as I move up or down the hillside.

According to the maker of a car at £250 he is a very distinct personage who out of his moderate means per

Correspondence.

annum can pay that price for a car, and also each year pay cut from £70 upwards for wear and tear and expenses.

If these car vendors (and motor writers also) are correct then am I with my £700 a year a "Man of Paltry Means," and my friend the parson with his £250 a "man of no means at all." If, sir, I had my way I would prohibit the use of the figure "A man of moderate means" by every advertiser and every motor writer unless he also gave a clear definition of what he meant in pounds, shillings, and pence. Until this definition comes I am safe in signing myself,

A GILDED PAUPER.

[We never refer to the "man of moderate means," but we suppose any person not a pauper would consider himself as coming within the definition.—Eo.]

DRIVING ON LONDON AND WINCHESTER ROAD.

[14386.]—Might I ask you to draw the attention of your readers to the great danger and inconvenience which the inconsiderate driving of certain motorists is causing at Hertford Bridge, Hartley Row, and Hook, on the London and Winchester Road? The Automobile Association has undertaken to remove all scouts from the neighbourhood of Hertford Bridge, because it is considered that the Association's notice-boards are quite sufficient warning for considerate motorists. This being the case, it is quite certain that if the police do trap the stretch of road to which I have referred, and happen to catch any motorist exceeding the speed limit or driving to the danger of the public, such offences will most certainly be made examples of.

I put this appeal on the lowest ground, viz., self-interest, because I am certain that before long we shall be hearing bitter complaints as to the high-handed action of the police in the vicinity of Hertford Bridge, and it is as well for all of us to realise that if traps should be once more set in that part of the country it will be solely as a result of the selfishness of a certain section of the motoring public.

D. C.

MOTOR CARS AND PARLIAMENTARY ELECTIONS.

[14387.]—Having lately assisted by the lending of my car at a bye-election, I have received a form from the (Liberal Unionist) organiser of the cars that were used at the time, asking me the following questions:

A. "Have you a motor car?"

B. "Would you be disposed to lend a car to assist (Unionist) candidate at elections?"

To which I have replied as follows: "Yes, on the distinct understanding that the candidate will use his endeavours if returned to Parliament to obtain the removal or reduction of the proposed excessive licence duties on motor cars, and ditto tax on petrol; if he does not entertain this, I do not assist."

I venture to ask if you will publish this as a hint to other car owners, as it appears to me, judging from my experience, that an election is dependent on motor cars for its successful carrying out, and I think if we adopt these tactics we may make our influence felt pretty considerably.

O 3481.

A NEW FUEL FOR MOTOR CARS.

[14388.]—The article on page 877 in *The Autocar* of June 19th has no doubt been read with great interest by many. Whatever the substance contained in the metal drum, it will be universally welcomed if it is capable of reducing the cost of fuel for internal combustion engines to an insignificant figure.

Near the end of the short article you express the opinion that the fuel in question was some particular kind of dust. Having experimented largely with all kinds of dust fuel in internal combustion engines, I think this is hardly likely, though possibly lycopodium may have been used. Coal dust would, I think, have spoiled the lubrication of the cylinders in even a twenty miles run. In any case, for use in such a fast running engine, the pulverisation would have to be so fine as to render the cost of the fuel absolutely prohibitive. Diesel is mentioned as having experimented with coal dust, but I believe I am correct in saying that it was only to a very limited extent; and, further, I am pretty safe in stating that for every pound of coal dust burnt by Diesel in an internal combustion engine I have used at least a ton, during experiments in Glasgow and Edinburgh some years ago. These investigations convinced me that coal dust could only be successfully used in a comparatively slow running engine.

Without attempting in any way to depreciate Diesel's important work, I may mention that the *modus operandi* of his engine, i.e., the injection of the fuel, whether in the form of liquid or powdered solid, into the combustion air

after compression, forms a claim in a patent of mine dated January 16th, 1891, or fully a year in advance of Diesel's application. This is, of course, now only of historic interest, as both patents have lapsed.

P. F. MACCALLUM.

[Our correspondent encloses copies of reports by several engineers referring in terms of appreciation to the success of his pulverised coal dust as fuel.—Ed.]

STARTING ON THE SWITCH.

[14389.]—Your correspondent, Mr. Colbourne [letter No. 14357], raises a very interesting point in connection with this subject. Perhaps consideration of the following points in favour of this method of starting may help to allay any fears of tendency to cause damage. The effect which it is assumed will cause damage is, I take it, the sudden explosion acting on parts of considerable inertia. First of all, is the rise in pressure, consequent to the explosion, as sudden as it would at first sight appear to be? I think not, and for the following reasons. The cranks of a vertical four-cylinder engine when ready to start on the switch are, in ninety-nine cases out of a hundred, in approximately a horizontal position; that is to say, the piston on the firing stroke will have travelled about one-half of its outward stroke, therefore the compression in this cylinder will be very much below normal at the usual time of firing. Again, when an engine is started on the switch it has usually been standing some little time—perhaps not very long, but long enough for the pressure of compression to become isothermal rather than adiabatic, an effect which still further reduces the compression. Slight leakage at the valves, condensation of the petrol vapour in the carbon deposit, and other possibilities might be mentioned, but I think I have given sufficient reasons for my point, which is that the initial starting explosion is not nearly so violent as those which take place when the engine is running.

I have assumed—and I think the assumption reasonable—that the cranks, before starting, are in a horizontal position, and I need only point out that this position gives the benefit of the full radius of the crank circle.

Engines have to be designed and made to withstand the greatest strain to which they are likely to be subjected, and on the principle of the greater including the less, there is, I think, no cause for fear of damage from starting on the switch, so long as engines do not go to pieces the first time pre-ignition occurs.

Mr. Colbourne says "the mechanism is set in motion as suddenly as though by a blow." I maintain that the blow is not so sudden as might be supposed; that it does not take place between two almost rigid bodies, but between one rigid and one very elastic body; that the rigid body is in the best position it can assume to recede from the impulse; and that the blow, if blow there be, is more in the nature of that which puts out a candle than that which knocks out a pugilist.

J. DALRYMPLE BELL.

A POINT IN INSURANCE.

[14390.]—A curious anomaly in the insurance of cars has come to my notice in the last few days, and the simplest way to express it will be to state the actual case and the problematical accident, and show how the accident would be outside the ordinary policy.

I own two cars, and have a paid driver; my uncle owns two cars, and has a paid driver. I practically look after his cars for him, and therefore often drive them. All four cars are fully insured against accidents, third party claims, etc. No matter which of the four of us drive any given car it is insured against accidents to the car itself; and third party accidents in the case of my cars for myself and my driver and in the case of his cars for himself and his driver. However, should I order his driver to drive one of my cars, that I apprehend would also be covered; but should I drive one of my uncle's cars or he drive one of mine, we would each be liable to third party claims, though we were fully insured in other respects, unless we could prove that we mutually acted as servant to one another.

Now it seems to me that a complete insurance of the car should include third party accidents when that car is out with the consent of the owner, but driven by some such person as a friend who could not be considered a servant; or in the converse case, if I insure myself against third party accidents, it should cover me when driving other cars. In other words, the liability should be complete for the given car or complete for the given person. In Lloyds' Policy B they go a step in that direction, but it is not clearly stated.

I shall be glad if anybody wiser than I in insurance matters can elucidate this point. After all, what we most want in

insurance is to be covered in the case of a regrettable accident to some person who would be able to take an action for a large sum of money. The loss of the car would be bad enough, but it would be ten times worse to have to pay £1,000 damages.

HORSE-POWER RATING.

[14391].—Mr. Edward H. Fryer [letter 14369] gives a table which at first sight would lead anyone to suppose that the formula I have recommended produces very poor results.

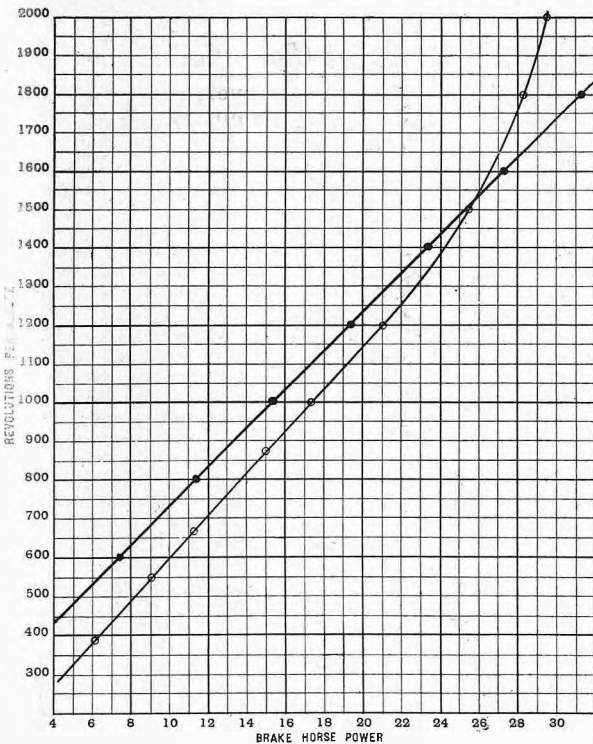
The figures in the last column are those given by $\frac{D^2 S N}{96800}$,

which is an expression no one in his senses would advocate. The formula I put forward in the *Automobile Club Journal* of January 3rd, 1907, which is recommended by Mr. Worby Beaumont in his able report recently drawn up at the request of the Technical Committee of the Club, and then ignored by that body, and which you wrote so favour-

ably of a week or two ago, is $\frac{D^2 S N}{12}$ when the measurements are expressed in inches. The exact equivalent of this for millimetres is $\frac{D^2 S N}{196634}$,

less than half, corresponding roughly to an "inch" formula of $\frac{D^2 S N}{6}$, which, as Euclid would say, is absurd. It

has been urged against my formula that it is difficult to work in the metric system, and certainly the above divisor is alarming, but if 200,000 be substituted for it, the results are quite near enough, and then you simply square the



diameter, multiply by the stroke and number of cylinders, divide by two, and move the decimal point five places to the left. Taking 196634 the top figure in the last column of Mr. Fryer's letter is 1.0985, by the simplified process it is 1.08.

These are the figures that should be in his last column if he wished to give the results of what has come to be known at the $D^2 S N$ formula, namely, that with 12 for the divisor when inches are used :

1.08 : 1.44 : 1.8 : 2.43 : 3.64 : 4.86 : 6.07 : 8.64 : 10.8 : 12.96.

My formula was intended to represent the power at 1,000 revolutions, and subject to correction for other speeds. The enclosed diagram shows how it applies to the power curve

given in *The Autocar* of June 26th (page 896) for the Crossley, which I think is as good an approximation as one could possibly expect to get from a straight line.

Mr. Fryer does not admit that there is any virtue in simplicity; most people would think it even worth making a small sacrifice to gain it, but as Mr. Beaumont has pointed out, the simple formulæ give quite as good results as the complicated ones. All are very far from perfection.

C. F. DENDY MARSHALL.

[14392].—In reading my copy of *The Autocar* for June 5th I noticed on page 784 an article commenting on Mr. Worby Beaumont's report on horse-power rating. In this article you advocate for adoption by the R.A.C. the formula $D^2 S N$

12. You state that you believe that it was originally suggested by Mr. Dendy-Marshall.

Unless the gentleman above-mentioned devised this formula before December, 1906, he is not the originator. While at Nice I read in an issue of *The Autocar* of that month a contribution by an eminent engineer in which the formula $D^2 S N R$

16,000 was advocated. Immediately after reading that

article I devised the formula $\frac{D^2 S N}{12}$. This formula, while

possessing the merit of simplicity, is sufficiently accurate for ordinary purposes. A great advantage of using the constant 12 is the fact that it is divisible by 2, 4, and 6. Therefore, for four-cylinder motors, the formula is simply $D^2 S$

$\frac{D^2 S}{3}$, for six-cylinder motors $\frac{D^2 S}{2}$, etc.

Recently, I have had in *Motor Age*, a magazine published in Chicago, several letters advocating the adoption of my formula in place of that of the Association of Licensed Automobile Manufacturers, which is, in reality, the R.A.C. rating.

Trusting that you will rectify the error as to the originator of the formula $\frac{D^2 S N}{12}$,
JOHN JAY IDE,
New York.

THE POLICE IN MERIONETHSHIRE.

[14393].—I have read with pleasure the letter warning motorists from touring through Merionethshire. The warning is very proper, and as a resident allow me to hope that the fewer motoring visitors the better. The ways of men, like the roads in Wales, are narrow, and we do our best to discourage motor traffic by advising our police to secure as many convictions as possible for "driving to the common danger," which is much preferable to speed evidence, specially when speedometer records are unfairly opposed to the evidence of our officers.

The Welsh residents in our county who can afford motors all enjoy certain social distinctions, and why should we have our roads driven upon and destroyed by English motorists, while we bear the expense of maintaining the roads, and govern the county?

There are comparatively few moderately wealthy men resident in our district, and we very properly enforce penalties against English motorists who endanger our lives and ruin our motor sport on our own roads. Unless the present nuisance be discontinued, there appears no alternative but to impose somewhat harsher measures than hitherto against intruders.

J.P.

THE PRICE OF PETROL.

[14394].—My attention has been called to a letter in your issue of the 12th ult., in which my name has been used with the evident intention of holding me up to the public as a person who is willing, if allowed to do so, to take a mean advantage of them by overcharging for my goods. This is the innuendo running through the letter of "Vibstad" [14325], and plainly shows the ill-informed specimen of humanity that he is. I cannot do better than refer you to the official prices quoted for petrol in Scotland, viz., Scotland (South), 1s. 3d.; Scotland (Mid), 1s. 4d. to 1s. 5d.; Scotland (North), 1s. 6d.

"Vibstad" evidently had purchased from me one gallon Shell, for which I charged 1s. 5½d., the halfpenny being charged when a can is broken. If he had bought a full can

Correspondence.

the rate would have been 1s. 5½d. per gallon. Had I charged less than I did, I would have been breaking faith with my fellow traders, which I decline to do. I do not think "Vibstad" can complain, since it is the course he himself has chosen, to attempt to hold me up to scorn. If he has any feelings of what a gentleman's duty is, he will immediately correct his misapprehensions through your columns. In any case, I hope you will give this the same publicity you bestowed on the communication in question.

J. FITZPATRICK.

[14395.]—I notice a letter [14325] written by "Vibstad" with regard to the price of petrol, the wording of which I consider will create quite the wrong impression among motorists.

All the petrol companies supplying me have made me pay the extra duty charge from May 15th. How Mr. Conyers has escaped this charge I cannot understand, but I do think the remark as to the characteristics of the motor trade is distinctly unfair to the majority of garage proprietors.

HAROLD C. READING.

FILLED TYRES.

[14396.]—Seeing recently in *The Autocar* a report of the R.A.C. trials of a set of Pneuomatic filled tyres, I thought that your readers might be interested to hear my experiences of the Pneuomatic filling and some interesting experiments I have had with it. My car is a 14-20 h.p. Renault limousine landaulet. In December last I decided to try this Pneuomatic

filling, and, to make comparisons fair, fitted new tyres all round—Palmer Cord back wheels and studded Michelin on front, all 880 by 120 mm. The near side wheels, back and front, were fitted with inner tubes as usual, but the off side wheels were filled with Pneuomatic, the object being to see if there was any difference in wear or resiliency, as I did not quite like giving up the air tube at first.

Since the tyres were fitted in December I have done well over 3,000 miles, including six weeks in Ireland, where the roads were very far from perfect, unrolled stones abounding. The remainder of the distance has been done in Surrey, Sussex, Kent, and Essex, but even there there was much road repairing going on, as is usual in the winter and spring.

I have always carried four passengers, and many times six, as the car is very roomy, and usually a fair amount of luggage as well, added to which I always carry a good assortment of tools, oil, carbide, etc., so that the car is by no means lightly loaded. Now for results.

Resiliency.—I find it quite impossible to tell from the running of the car which side is fitted with air tubes and which filling. In fact, my friends usually think that the filled ones are the pneumatic. I should mention that I inflate to 75 lbs. front and 85 lbs. back, and make sure with a good gauge that I really have the proper pressure.

Wear.—This, to my mind, has been so remarkable that I have had a photograph taken of the two back rims, Parsons E.R., side by side, to show the difference in the wear of each. The one marked with a cross is the one with the Pneuomatic filling, and which, as you will see, is not nearly so much worn as the one with ordinary air tube, the ribs being hardly worn at all, whereas the air tube one has the ribs more than half worn down. In either case it speaks volumes in favour of the Palmer covers not to have worn more in the distance. With the front wheels it is the same; the studs on the Michelin tyre with the air tube are more

worn down than those on the corresponding cover filled with the filling. In my opinion, all the claims of the Pneuomatic Co. are fully borne out in practice, removing as it does one of the greatest drawbacks to motoring—the puncture and burst tyre trouble.

I hope these experiences of a private owner may interest your readers.

E. M. YETTS.

THE WAY TO WEYBRIDGE.

[14397.]—With reference to your remarks in *The Autocar* of June 19th as to the "unfrequented and therefore fairly safe route" to Weybridge, may I point out that the advantages the main Portsmouth road still retains over all other approaches to Brooklands (Weybridge) are first, that it is the most direct, bearing in mind that after passing the celebrated White Lion Hotel, Cobham, and attaining the top of Pains Hill (where the only purely footbridge spans the Portsmouth highway), the second turning on the right takes one to the road in which the only car entrance to the track is situated; secondly, the Portsmouth road is tarred nearly all the way from Putney Bridge to Cobham; and thirdly, it is now pretty well generally known that the Surrey police this season do not take the notice they did of speeds under thirty miles an hour. Most of the cases at Kingston recently have been over thirty miles an hour. One I noticed was fifty-six miles—several over forty miles an hour—on the narrow road from Oxshott to Esher.

W. W.

SIGN FOR SLOWING DOWN.

[14398.]—I read in your issue of June 12th letter 14319, and would like to state that I agree with the writer as to the sign for slowing down when cars meet on the road, such as when a car meets a horse ridden by a gentleman or groom, especially if restless. On the other hand, I find it is not only the paid driver, but also the owner, who will open up his car and fly past another car. If a paid driver give way the owner sitting by his side might take advantage of the opportunity for using language. I have always been used to cars of a good turn of speed, and in my experience the paid driver is as much sinned against as he is a sinner.

40 H.P. PAID DRIVER.

DISPOSAL OF OLD TYRES.

[14399.]—In your issue of June 26th (page 927) you have a notice from a correspondent of yours who complains of something we have done. Will your correspondent kindly write and say what he complains of? As far as we can gather, he says he received a tag from us, the particulars of which are quite clear, as it states that we will give a credit note for old covers. Apparently, your correspondent complains of our doing this. We do not pretend to buy covers for cash, and we enclose you a copy of our letter which we send to people who ask us to buy their old covers for cash after they have received this label.

Your correspondent has no need to send his old tyres to us, but if he does send them according to our invitation on our labels, we shall be pleased to send him a credit note.

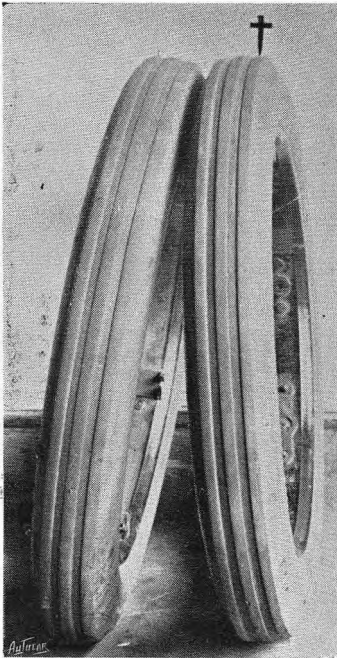
THE NEW MOTOR AND GENERAL RUBBER CO., LTD.

[The letter referred to states: "We do not purchase waste rubber for cash. Our idea in offering you the prices as per our circular label is to tempt you to give us a trial order for new tyres or repairs on *contra* account, as the prices we are offering are from fifty to seventy-five per cent. above the actual market value of waste motor tyres."—ED.]

THE TAX ON PETROL.

[14400.]—Don't you think that English motorists are displaying rather a defective sense of proportion in regard to the new taxes on petrol and cars? Here in France I pay £14 a year in taxes on my 18-22 h.p. car, while petrol, bought in large quantities and at the cheapest stores, costs the equivalent of eighteenpence a gallon, and anything up to two shillings if bought casually. And yet all motorists in France are not millionaires.

The only item in our motoring accounts which is lower than those of our British *confreres* is under the heading of "fines," for whenever one has the bad luck to fall into a police trap in France—and such things do exist, *experto crede*—one feels aggrieved if the fine and costs exceed as many francs as in England they would pounds sterling! Which



perhaps compensates us for our high taxes and costly essence.

But, for all that, it sounds just a little ridiculous to read of a would-be purchaser of a £600 chassis of a well-known six-cylinder make crying off after the Budget taxes had been announced on the ground that he could not afford it! The new tax on such a car cannot greatly exceed the cost of a pair of non-skid tyres, which he presumably would not dream of denying his car if they were wanted; and as for the extra threepence on petrol, I fancy a ten-pound note would amply cover this for a year's normal running, unless the carburetter in question is madly extravagant.

VERE.

[14401.]—When the Chancellor of the Exchequer promulgated the tax on petrol he evidently was quite unaware that there was any source for motor spirit except that from abroad. By this time he has discovered that this is made in large quantities in this country, and his proposal to tax at the source every liquid capable of driving a motor car, and then refund on application, besides being unworkable, is a tremendous set-back to a distilling trade which at present is already passing through a crisis serious enough in all conscience without the tampering of badly-informed individuals. If Mr. Lloyd George is wise, he will drop his petrol tax the same way as an apprentice in a blacksmith's shop drops a piece of black iron he has picked up without knowing that it is extremely hot inside.

ALI BABA.

[14402.]—Two thoughts have prominently emerged in motor circles from the discussions which have taken place regarding the Budget. The first is that the Motor Union in general and myself in particular are to some extent responsible for the increased taxation. The second is that if anything is to be done with the proposals of the Chancellor, there must be united action by the various bodies interested in motoring.

As to the first, I deny *in toto* that either the Union or myself is responsible for Mr. Lloyd George's proposals. It is true that a year ago when we were threatened with taxation, we attended before the then Chancellor of the Exchequer, Mr. Asquith, and after distinctly objecting to any increased taxation all we said was that we would submit to a moderate increase if, and if only, the moneys from all motor taxation were placed to a fund for improvement of roads.

This year the Chancellor has acted entirely in consultation with the Royal Automobile Club. It is perfectly true that he did consult myself, but I told him I could not be taken in any way as assenting to his proposals, and that I was for every reason entirely opposed to the petrol tax.

My own attitude goes even beyond that of the Motor Union. I am totally opposed to increased taxation on motor cars. They are no longer a luxury; they are a commercial incident in the lives of an enormous number of the general public. A tax such as is proposed is bound to decrease the use of cars. It would tend to smaller cars, cheaper cars, and therefore less money being spent in their manufacture; and further, I am opposed in principle to the road fund. It is going back to the old days of the turnpike. The turnpike was abolished by general consent because it was felt that the man who used a road was not a wretch to be hampered and taxed every day, but was really a benefactor to the country in moving commerce and trade, and circulating money throughout the whole of the country districts. Roads are a public amenity, just as policemen, street lamps, and so on. They have no more right to say that I shall not use the roads of Sussex without paying taxation for them than to say that I am not to go to stay at Brighton unless I pay something towards the police and the lighting rate.

However, the second position is that agreement must be, if possible, arrived at between the different sections of the motoring community. For this reason I have sunk my own opinions, and am prepared to consent to a moderate increase, but not the penal rate proposed by the Chancellor, and am also prepared to accept the road fund and the road scheme in order to work in harmony with the R.A.C. and other institutions. With the petrol tax I can make no treaty of peace. I regard it as wrong in principle from a financial point of view, and entirely detrimental to motorists.

I hope I have made the position clear, and trust that all motorists will join in resisting the petrol tax, in modifying the general taxation, and in demanding to have the money spent not for road maintenance, but for road development by a body upon which motorists themselves shall be represented.

W. JOYNSON-HICKS, Chairman M.U.

HOMOIL.

[14403.]—I was interested to read your account of the demonstration of Homoil, but rather surprised that a fuel of a lower gravity than paraffin could only be properly vaporised in a particular carburetter. Personally, I have made carburetters to work with all grades of fuel from paraffin downwards without smoke, smell, or deposit, and I shall not be afraid to tackle this one as well. Burning the fuel in the open is no test of what takes place within the cylinders.

J. JOHNSON.

[14404.]—The prospectus of the above company has come into my hands, and I have read it with some interest, but should be glad to have the reply of the directors to the following questions:

Taking the fuel first, it is evident from the description that Homoil is a crude benzol, probably what is known as 65% unwashed benzol, and, although the prospectus states it is "almost odourless in combustion," it is a well-known fact that the serious drawback to the use of unwashed benzol is the smell. Even the 90% washed benzol, which costs about 3d. more per gallon and is a more refined product, suffers slightly from the smell it produces in the exhaust gases, due to the presence of a small proportion of sulphur compounds in solution in the liquid. How is the smell eliminated in using Homoil?

Taking now the price quoted in the prospectus. This is given at 5½d. per gallon for the fuel used in certain trials which are reported upon. Referring to the report of the Fuels Committee of the Motor Union, page 43, an approximate price of 6d. per gallon at benzol works in the colliery districts is given. We know that prices of this fuel fluctuate, but how is it possible to sell retail at 6½d. per gallon a fuel which costs 6d. to produce, exclusive of carriage? Comparing again the price of 6½d. with that of 8½d. for petrol, it must be borne in mind that the cost of handling petrol, putting it in tins, including the depreciation of the tins, adds about 3½d. to the cost of the fuel itself, and then there is the retailer's profit, which I take it would be the same for either fuel of 2d. per gallon. Is it proposed to retail Homoil in the same way as petrol is retailed, and if so, where does the retailers' profit come in? Who pays working expenses, as these are apparently not allowed for?

Now turning to the use of this fuel. Two reports are quoted in the prospectus. The first one gives a reduction of eight per cent. in the consumption of fuel in favour of Homoil, but Faraday House do not state the horse-power given out by the engine in these tests. What was this? The date of the report is also nearly three years old, and very large strides have been made in carburation in those three years, so on the face of it this report cannot carry much weight.

Considering now the second report of the consulting engineers, the most important detail to my mind is omitted—that is the consumption of fuel per horse-power-hour. Again, the rate of revolutions of the engine was far too low to afford any useful comparison between the two fuels. This should have been 1,000 per minute at least. Why was such a low speed adopted?

As one who has spent a great deal of time investigating the subject of carburation, I can speak with some authority upon the matter, and I therefore state that at a low rate of revolutions the engine will work more favourably for the carburation of benzol or of any other fuel whose volatility is less than that of petrol, but had the revolutions been kept up to the normal there is no doubt that a proportion of the benzol would have been carried through into the exhaust in an unburnt condition.

The statement that an efficiency of fully 30% more with Homoil does not agree with the previous statement of 8%, nor does it agree with any results I have obtained with similar fuels. What is really claimed as the saving effected?

Benzol can be obtained at most large gas works in the ordinary way, and no patents are in any way connected with it as far as the consumer is concerned; neither is it necessary to use any special carburetter, as I have obtained perfectly satisfactory results recently with the Claudel-Hobson carburetter, and some years ago with the old Longuemare. On none of these has it been necessary for me to pay user's licence. Why, then, must a special carburetter be used for Homoil?

A sale of 10,000,000 gallons of this fuel is taken as a basis for an estimate of profits. At the present time that is about the total production of benzol in this country per annum. Further comment is needless, with the exception that it would be possible in two or three years to increase this to 25,000,000

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to 30,000,000 gallons per annum by putting down special recovery plants. Does the Homoil Co. intend to do this throughout the country, and who is to pay for the plants?

I have not been permitted to examine a sample of this Homoil, but there is apparently nothing new in it, and benzol has been for some years used both for private cars and commercial vehicles, and also taxicabs, independently of any company to exploit it.

ROBERT W. A. BREWER, A.M.I.C.E., M.I.M.E., M.I.A.E.

REMOVAL OF CARBON DEPOSITS.

[14405.]—Having previously answered all the leading points relative to the above matter in my replies No. 14289 and No. 14341 in answer to Mr. Duckham's remarks, it was not my intention to personally continue this discussion; but, inasmuch as the three other critics have entered into this controversy, and as your journal has such a large circulation and read by many thousands of motor car owners, who may be led to form a wrong impression as to the real merits of our Decarboniser unless these reports are fully explained, I feel compelled to send a separate reply upon each critic's report, which standing as they do would be very unfair to my firm; but this letter must be taken as my final communication upon this interesting discussion, especially as the sole reason for both "P.B.C." and "J.H.H." failing to get proper results arose entirely from causes of their own making, and not the fault of the decarbonising compound. For instance, it may be noted that "P.B.C." says he carried out our instructions with the exception "that he did not cut off the oil supply," which he could have safely done for the few minutes required simply to warm up or dry the carbon without the slightest harm to his engine; hence readers will see that his complaint does not amount to much.

Now, as to the alleged failure of "J.H.H.," which I trace to emanate from a Mr. Harter, I have this correspondent's letter now before me dated September 21st last, in which he states, amongst other things, that his engine was in a very bad condition; he also states that "I ran all the oil out of crank case"—a very silly thing to do, and had not our Decarboniser have been a good lubricant I fear he would then have had more cause for complaint. Now, readers, please note the following: "While my engine was very hot I poured in about 1½ ozs. of your Decarboniser, and again ran engine for three minutes at full speed until all the smoking had ceased"; he also says, "I took out inlet valve and found the carbon still there." I am not at all surprised at this, for how on earth could Mr. Harter or anyone else expect to remove or vaporise a hillock of dense deposited carbon by the aid of only 1½ ozs. of our Decarboniser, whereas he should have used not less than 3 to 4 ozs. at each separate operation to have properly cleaned out his cylinders by the plan advocated in our book of instructions sent him with the compound supplied.

On receipt of Mr. Harter's letter, we wrote to him and pointed out his mistakes, and told him what to do in order to get proper results, and as the failure to remove the incrustation was caused by faults and mistakes of his own making, and not from the use of our compounds, I am rather surprised he entered into this controversy with a knowledge of these facts—certainly not a proper thing to do, tending as it may do to deter other motor car owners trying the decarbonising method to remove the carbon, which if properly used will do all we claim for it.

I never like to doubt the veracity of any gentleman, but in Mr. Calvert's case, as he has written to *The Autocar* stating Mr. Duckham's tests coincided with his own, which I dispute, and feel compelled (under the circumstances) to do so, and would here say that I will give three guineas to any charity the Editor of *The Autocar* may name, if Mr. Calvert can prove that he has ever made the alleged tests as stated, which I am inclined to think only exist in his own imagination; therefore if he will state as follows, viz.:

(a) When and where the compound for his tests was purchased.

(b) Where the alleged tests were carried out.

(c) The names of any persons who assisted him in making these supposed tests, together with a copy of his analysis.

These facts will be sufficient proof to me that he has done so. I am compelled to mention these particulars in full because Mr. Duckham has thought fit, in order to carry out his objects, to take the above critics under his wing to enable him to support his own weak opinions. I may say, however, I quite agree with Mr. Duckham's theory No. 2, published in last issue, simply altering the word "oxide" used by him to "chemical vapour," which element is exactly what our new Decarboniser produces; hence our

successes obtained in carrying out the removal of the hillocks of carbon formed in the cylinders.

I may say we have sold hundreds of tins of our Decarboniser, and as we have never heard of any other complaints beyond the above, which I think I have shown to be fallacious, even including Mr. Duckham's tests and weak arguments used, this may have caused a slight scare *pro tem*. However, the merits of our Decarboniser will soon overcome this by the splendid and continuous results daily obtained by its uses.

ARTHUR SHIPPEY.

ROAD WARNINGS.

[14406.]—I was motoring from here (Cheltenham) to New Brighton on Monday last, and it may be interesting to your readers to know that the roads, Gloucester to Worcester (*via* Cheltenham), Kidd, Whitechurch, Chester, and this side of W. Kirby, are splendid, but Kirby and Hoylake are bad (holes and ruts). Between Chester and Hoylake one would see three policemen in two miles, some with cycles, and I should fancy, by their attitude after passing, a field telephone was at work. I was not travelling fast, slowed down at all turnings, with the result that the man in blue came out of his corner and politely invited us with a wave of the hand to come on, indicating there was nothing coming along the cross roads or lanes. As this is evidently a police control you may like to know, but I must say the men were very courteous.

G. A. H.

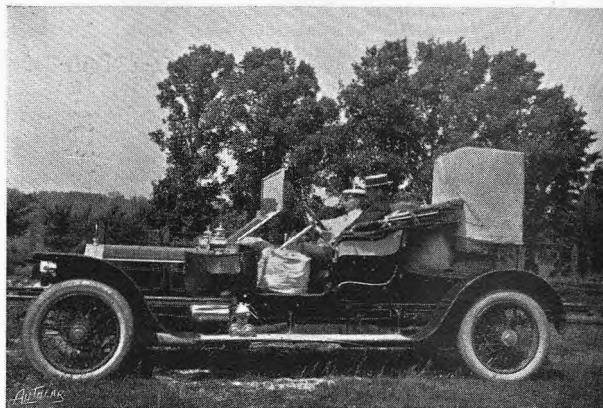
[14407.]—One of the most amusing incidents on the Coventry to Holyhead run occurred near Cerrig-y-Druidion. The official car, being a mile or two ahead, sighted a policeman hiding behind a large cartload of coal in the courtyard of an inn. The man on the top, presumably shovelling coal, was really the scout and second witness. The trap was very well laid, as a long straight stretch of road could be easily observed. However, on seeing the trap the official car at once turned back and instituted a surprise check in the middle of the straight stretch, all competitors stopping to give their numbers. It is hoped that this had the effect of neutralising the trap.

J. V. HOLROYD.

SUMMARY OF CORRESPONDENCE.

FOUND.—The Finchley Motor and Engineering Co. write that they have found a Berliet-Lyon axle cap, and will be pleased to return it to its owner. The company's address is 3, The Mall, Church End, Finchley, N.

The Rapid Car Concessions, Ltd., write: "We notice in *The Autocar* of the 26th ult., in your report of the Scottish Reliability Trials, a statement to the effect that the Rapid car stopped in the ascent of the Little Grunard Hill on the third day's run. This was not the case. The facts are as follows: The Rapid car started second in the ascent of this hill, and did not stop throughout the entire climb. The car ran slowly because the automatic air valve was not working properly, but the top was reached with plenty of power to spare. The Rapid stopped on Amulree on the first day's run, not by reason of any inability to climb, but owing to a sticking clutch."



A six-cylinder Rolls-Royce car owned by the Hon. C. S. Rolls, carrying the balloon "Imp" The balloon had made a flight of a few hours with the car following it. When it descended it was deflated and packed up on the car ready to return home. Mr. Short, of Short Bros., the balloon and aeroplane makers, is on the rear side of the car.

The Automobile Association.

Free Legal Defence for Members.

THE Automobile Association has added yet another advantage to membership likely to prove quite as attractive as the Patrol Organisation, which, the quidnuncs notwithstanding, has made certain roads out of London and elsewhere passable to the motorist, and kept many hundreds of pounds out of the magisterial maw. Last week the Association announced that arrangements had been completed by which "free legal defence" would henceforth be afforded to members without increase of the present two-guinea subscription.

In future, therefore, every member of the Association, if he so desire, will be entitled to the advice of solicitors upon any question arising under the Act of 1903, and may be defended by them or any duly appointed agent in any proceedings under the Act in any police court in the United Kingdom in respect of offences alleged to be committed by him during his period of membership. This announcement was made by Colonel Bosworth at a meeting held at the Motor Club on Thursday last week.

This attractive move on the part of the Association has been made possible by the failure of the Richmond magistrate's appeal in the case of Mr. L. W. B.

Martin, which was reported on page 929 of our issue of 26th ult. No magisterial Bench has ever received a more severe legal defeat, and it is to be hoped that the great unpaid and their clerks throughout the country will not fail to realise the gravity of the Lord Chief Justice's characterisation of their action, and the even stronger remarks of Mr. Justice Jelf. This being so, it will now be possible for members of the Automobile Association to enter appearance by solicitor to persecutive and vexatious charges preferred against them, and not to be further mulcted in time and money consequent upon personal attendance in distant parts of the country whenever some watch-holding Dogberry has chosen to clock them over a measured distance. By the accretion of numerous cases in their hands the Legal Department of the Automobile Association will be able to formulate and consolidate some general plan of campaign. The knowledge that in the future many more cases will be ably defended, and a stout fight, taking the time and trying the patience of magistrates, will be put up in the majority of cases, is certain to have a salutary effect, and we must congratulate the A.A. on its latest effort to be useful to its members.

The New 15.9 h.p. Arrol-Johnston.

Since Mr. T. C. Pullinger has taken the Arrol-Johnston car in hand he has been by no means idle. The new car, which is almost complete, will shortly be on the road, and we shall not be giving away too much in stating that it will create much interest in the motoring world when it does appear. Mr. Pullinger's idea is to make one type of car only, and he believes that there is one horse-power, namely, 15.9 (R.A.C. rating), which will meet all the requirements of the general public, being sufficient to pull a landaulet, limousine, or an open touring car with hood and wind screen. It is economical with petrol, comes within the four-guinea Inland Revenue licence class, is light on tyres, and can be made at a reasonable price. Mr. Pullinger is particularly anxious to impress upon the public that his firm is among those who recognise that it is not by calling a car 12-15 h.p., or any double-barrelled h.p., that the public can really judge what its capabilities are, as all these horse-powers are fictitious. While he admits that 15.9 h.p. only represents the actual power of the car approximately, since it is based

on the R.A.C. formula, this method of reckoning the power is the standard one in the country for the time being, and is, therefore, used. The New Arrol-Johnston Car Company are by no means in a hurry to put the car before the public until it has had a thorough road test. The car is to be on the road for a month night and day with a sealed bonnet before it will be placed on the market, and, knowing what we do of Mr. Pullinger's capabilities, we feel confident that the vehicle he produces will make its mark in the motoring world. There is yet another point connected with the company which may appeal to the public, that is the new system of dealing with repairs and sundries. Every part will be numbered, each number corresponding with the drawings in the office and with the numbers in the price list, so that a customer has only to write for a certain number without mentioning the name and he will get it by return of post. The first car produced will be known as "Mark 1," and if any alterations are made to it next year it will be known as "Mark 2."

We are informed that the spot and forward prices for Carburine and Glico motor spirits and benzines have been reduced by one penny per gallon as from the 24th June. This will bring the prices down to the same as they were before April 29th, and will place present purchasers in the same position as customers who had booked contracts prior to that date.

* * *

At Corwen Petty Sessions on Friday last week nearly £100 was collected in fines as the result of police motor traps on the Holyhead Road. Mr. David Davies, M.P., was fined £7 for driving at a furious rate through Corwen. Another defendant was Sir Hudson Kearley, M.P., who wrote stating that the police in Wales were unable to set proper traps. His case was adjourned.

Motorists about to start on motor tours either in this country or abroad should write Messrs. Alfred Dunhill, Ltd., of 359-361, Euston Road, London, N.W., for a copy of their illustrated pamphlet on "Travelling." Therein they will find many suggestions with regard to fittings, which are calculated to make smooth the way of the motor tourist before him.

* * *

At Marlborough Street Police Court on Saturday, before Mr. G. Denman, a conviction was obtained by the Motorists' Protection Association against G. T. Sharpe, a chauffeur, who in applying for an appointment submitted credentials which were found to have been written by himself. Sharpe was arrested at Saffron Walden. The prisoner pleaded guilty, and was fined £10 or two months in the Second Division.

Small Car Talk. By Runabout.

The Finish of a Chauffeurless Car.

I WAS chatting the other day about my new car with a motorist of great experience, and we got on to the subject of paints and varnishes, whereupon he asked me what colours I had selected for the coachwork just ordered. I felt rather shamefaced, because, as I have little leisure and don't keep even a bootboy, I had ordered an unvarnished body roughly painted in ironclad grey, my intention being to make the car-washing a brief and simple affair, and to keep a big pot of paint handy, and splosh on a new coat at intervals, when the first garment grew stained and dirty. I made my confession very timidly, but mentioned hopefully that with brass mountings and red leather upholstery it mightn't look so shabby after all. To my great comfort the great man acknowledged that his own big car was finished in exactly the same style, and treated in the same roughly affectionate way. Of course, such rough-and-ready methods cannot suit "kerridge folk," who want to enter for appearance competitions, and pay calls in a topper per automobile. But it occurs to me that the idea is worth printing, as it may appeal to other small car owners who don't want to pay for prolonged and frequent washings of polished varnish, and as the year goes on I will let readers know if I am satisfied with my choice. I have been very keen on getting rid of the brass work, but an oxidised finish is the only alternative, and that looks rather dree on a drabby sort of body, so I reluctantly determined to put up with a little brass—at any rate for the present. One advantage of my plan is that I can at any time have the body properly varnished and painted in some more conventional colour, if I prefer it. I am not sure that nickel plating would not suit the dark grey paint better, but the extra cost comes to a fiver or so, which will just pay for a speedometer! [Our correspondent loses sight of the fact that lamps painted grey to match the panels look smart when well done.—ED.]

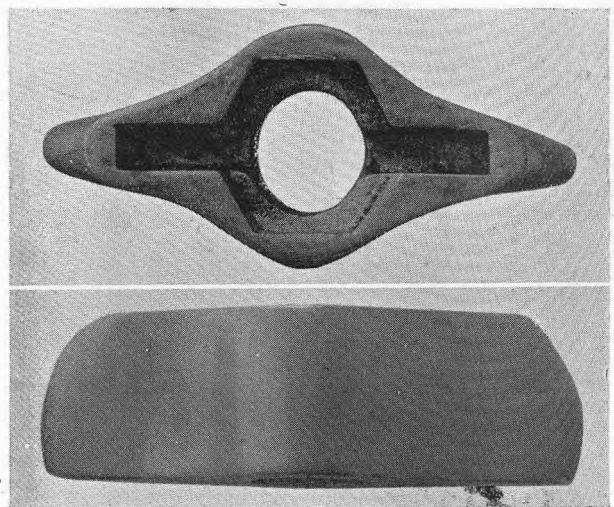
A Splendid Innovation.

Have private owners noticed that all the great motor organisations which run competitions have lately made a long-needed innovation? Formerly a discreet silence was observed about the condition of a motor competing in any trial. It ran through the trial, secured an award more or less meritorious, and its subsequent history and behaviour was "wrop in mistry." Obviously all the successful cars in any given trial do not reach the finish in equally sound condition, but for years no details were ever given of the manner in which the finishers had stood the racket. Thus I have seen a winner in a motor cycle event finish with a spanner in one hand, a penny tied to a piece of string in his teeth, and his lamp and gear lever tied round his neck. (The spanner was to hit the end of the gearshaft with, the copper coin was an improvised valve lifter, etc.) I have known a car snap its back axle within ten miles of the finish of a trial. I have heard the driver of another car garnish with oaths a speculation as to whether his main steering joint could possibly hold together till the end of the last twenty-mile section, and so on. All these first-class misdemeanants secured awards and advertisements similar in character to those won by the 15,000 miles Rolls-Royce, whereon only a micrometer gauge could detect signs of use. All that is changed. The R.A.C. has adopted an unwonted frankness in its certificates of

observed performances. The A.C.U. sometimes speaks really unkindly about the motor bicycles it has wheedled into attempting a thousand miles of hilly roads during a week of pouring rain. But the palm undoubtedly goes to the organisers of the Irish Trials. Anybody with a morbid thirst for damnatory details of a motor's private life should turn up page 405 of the *R.A.C. Journal* for June 17th last. That usually sedate publication is for once in its life quite racy and interesting. I hope the Scottish A.C. will follow suit. Time was when no car could conclude a trial without standing in urgent need of a visit to the repair shop and a big order on the storekeeper.

The Protruding Petrol Tank.

A designer of car bodies takes exception to my remarks upon the now popular cylindrical petrol tank, mounted prominently on the stern of so many two-seated cars. He points out that with a low semi-racing type of body there is no room for it under the seat, and that many people dislike the pressure-feed positions. I still stick to my guns. The tank may look well enough to certain tastes when it is slung abaft a single phaeton body, but it undoubtedly takes up valuable room, especially in a low body, where there is a minimum of inside storage. I should opine that the right placing of the petrol tank on such designs is within a Daimler type of curved dash, which has the advantage of being the most accessible place on the car. I daresay my designer friend will object on the score that the spirit slops about the tank and makes a drumming noise audible to the passengers. Well, I have driven several cars fitted with this type of petrol tank, and I never noticed the petrol "drumming" yet. It may be because such two-seaters are seldom very generously silenced, but in any case there would be no perceptible noise if the inside of the tank were supplied with several drilled baffle plates. When there is only about four inches of freeboard under the front seat, we cannot afford to sacrifice space astern.



A SECURITY BOLT AND VALVE NUT SPANNER. This most useful little tool has been made by Messrs. H. G. Norton and Co., of 1 to 5, Bath Road, Cheltenham. It is made of aluminium and gives just sufficient leverage to enable the bolts to be well tightened without an effort and without soiling the fingers.

Flashes.

There are ninety-one motor cars licensed in Corunna, Spain, of which seventy-five are French, and almost all the rest Italian and German. Cars for this district must be good hill-climbers.

* * *

We have been asked where the petrol filler with float gauge which we illustrated last week on page 909 can be obtained. The address is Mr. T. Sendall, c/o the Umpire Cycle Co., Castle Theatre Buildings, Stockton-on-Tees.

* * *

During the progress of the late Irish Trials we had a practical demonstration of the value of having one's car upholstered in real leather having a fast colour dye, such, for instance, that prepared by John T. Hart and Sons. After about three days of exceptional wet we noted that the occupants of a car upholstered with a cheap lining were having most of the colour transferred to their clothing. One man in yellow oilskins on the front and one side and graduated patches of scarlet—from the upholstery—on the other looked extremely picturesque.

* * *

The Maharajah of Mysore has purchased a White steam car. The *Madras Times* reports that the White steam car which made a record run up the Mettapalyan Ghaut in 1h. 35m., has accomplished a still more remarkable performance by climbing the celebrated Seegoor Ghaut in 59m. This has a rise of nearly 7,000ft. in twelve miles. Our Indian contemporary states that it is believed to be the first motor car that has climbed the Ghaut under its own power. This car was driven by Mr. B. C. Rhodes, who has also distinguished himself in other parts of India. For instance he drove up to Octacamund, one of the hill stations from Madras, accomplishing the climb of thirty-three miles and the rise of 7,000ft. in 1h. 35m. The car used in each case was a 20 h.p. So far as the last performance is concerned, we believe the previous best climb up to Octacamund was 2h. 40m.

A well-made metal tool box designed to replace the heavy, and often unsightly, wooden boxes which one sees occasionally is being introduced by Brown Bros., Ltd., Great Eastern Street, E.C. The box, which we illustrate, is made of stout gauge sheet steel, well riveted, and enamelled black. This is the plainest and cheapest box made, and measures 10 $\frac{3}{4}$ in. by 5 $\frac{3}{4}$ in. by 8 $\frac{1}{4}$ in. high. More elaborate boxes with single or double locks, lined with light wood or fitted with aluminium mats in sunk tops, are made in great variety up to 27in. by 11in. by 10 $\frac{1}{4}$ in. high, and are exceedingly smart in appearance.

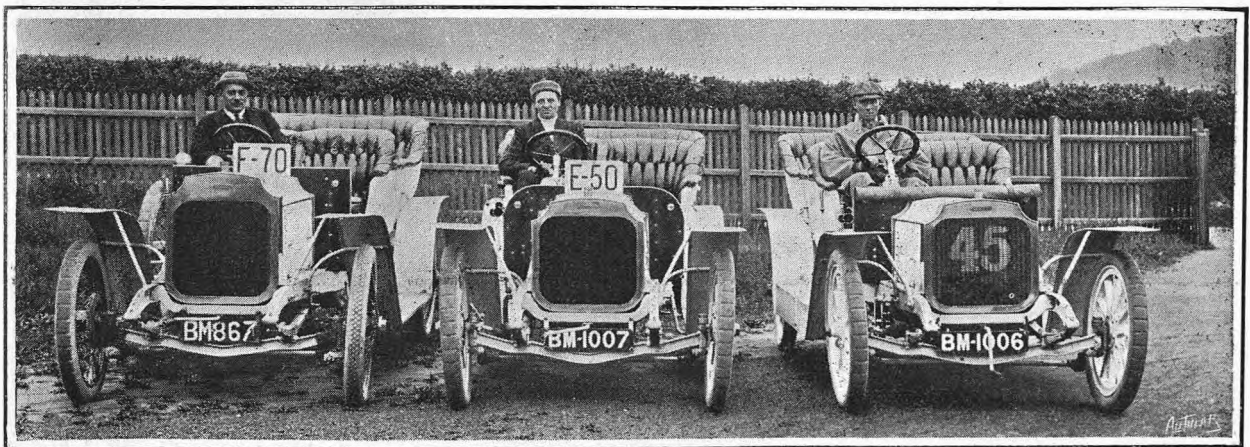


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Some time ago the Adams Manufacturing Co. displayed in their window at 106, New Bond Street, the actual gear box which had run 17,000 miles in one of their cars, with a notification upon it to that effect. Shortly afterwards they received from Spain a postcard evidently written by someone who had seen the gear box exhibited. The address on the postcard was "Signores the Actual Gear Box Company."

*

The five Cadillac cars entered in the Scottish and Irish Reliability Trials covered between them a total mileage of 4,840 $\frac{3}{4}$ miles under official observation. Throughout the whole of this distance the only replacement made was one commutator spring for the single-cylinder car, the cost of this being 6d. As showing the strenuous life which motorists are called upon to lead at these times, Mr. F. S. Bennett, from the 22nd May to the 22nd June, covered no less than 3,832 miles by road, an average (including Sundays) of over 119 miles a day.



THE VAUXHALL TRIALS TEAM. The drivers reading from left to right are Mr. Kidner, Mr. Hancock, and Mr. Hodges. The two former competed in both the Irish and Scottish Trials, the latter only in the Irish Trial. Mr. Kidner on a 24 h.p. Vauxhall had the misfortune to be disqualified in the Irish Trial; in the Scottish Trial he made fastest time in his class on all hills excepting Glendoe; he also made five non-stop runs, but on one day suffered one engine stop which cost him in the Irish Trial one minute. Mr. Hancock on a 20 h.p. Vauxhall came second in the speed test, and made fastest time in his class on both Greenane and Farmer's Bridge Hill-climbs, also winning the gold medal in his class. In the Scottish Trial he made non-stop runs throughout, fastest time in his class on Gruinard and Glendoe Hill-climbs, and second on Cairn-o'-Mount and Fintry Hills. Mr. Hodges, who drove a 20 h.p. Vauxhall, competed only in the Irish Trials, and did exceptionally well, being second in his class on final marking.

Flashes.

Mr. J. D. Siddeley has been appointed joint managing director of the Deasy Motor Car Mfg. Co.

* * *

The Special Budget Committee of the Royal A.C. has held several meetings, and is carefully considering the position created by the Chancellor of the Exchequer's proposals. On Wednesday last week resolutions were reached on that part of the proposals dealing with the direct taxation of motor cars. The constituent clubs and others have been informed of these resolutions, and asked to give the Budget Committee the benefit of their views either verbally or in writing. The committee is now dealing with the indirect or petrol taxation.

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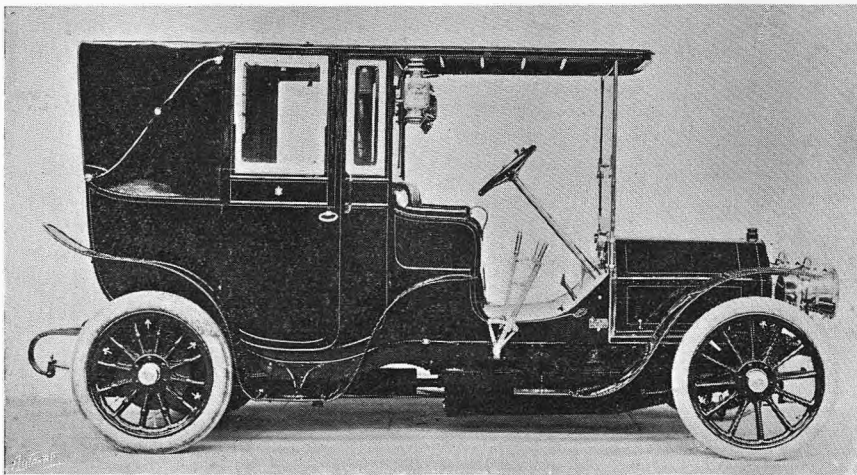
Great interest is being shown in the R.A.C. test of headlights, to be held on Monday, July 19th, and we understand that a good number of entries have already been received.

* * *

Special facilities are being offered to British firms desirous of taking space at the international exhibition which will be held in Brussels from May to October next year. A Royal Commission has been appointed to aid British exhibitors. The chairman of the Royal Commission is the Earl of Lytton, and the vice-chairman Sir Swire Smith. Its very influential membership includes two names conspicuously associated with land transport, those of Lord Stalbridge and Mr. S. F. Edge; and there is a special Land Transport Committee.

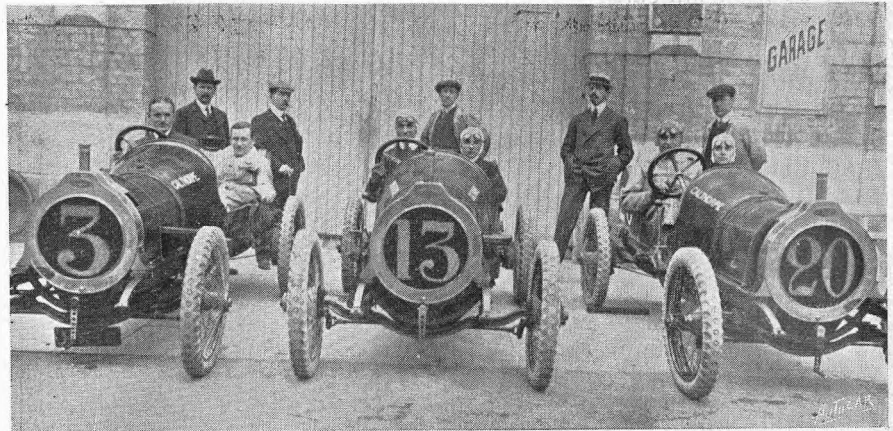
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Mr. Jerome K. Jerome recently purchased a new four-cylinder 15 h.p. De Dion Bouton car—the second he has possessed. His first was completely destroyed in a fire which recently occurred at his residence.



The 30 h.p. Itala car recently presented to His Holiness the Pope. The presentation was made by Archbishop Farley of New York, and not, as stated in the daily papers, by two wealthy American gentlemen. It is stated that His Holiness has announced his intention of never using the car, as he prohibited the use of motor cars to Cardinals except for long journeys.

H.M. Minister at Christiania reports that great difficulties are at present placed in the way of motor traffic in Norway. The sheriffs in the various counties have supreme power with regard to granting permission for the use of motors within the limits of their districts,



The team of Calthorpe small cars which ran in the recent race for the Coupe des Voiturettes. Two of the three cars finished in good time, and No. 13 won the Bennett Cup for reliability and regularity of running. These cars were practically the only ones in the race to have standard chassis, all the others being racing freaks.

and, although in most cases permission is granted on application in the prescribed form, there are certain counties in which motor traffic is either absolutely forbidden or hampered with prohibitive restrictions. Applications for permission to use a motor in any county must contain information regarding the make of the motor, its length, breadth, weight, the name of the driver, a statement as to whether he is provided with the necessary certificate issued by the Norwegian police authorities, the purpose for which the car is to be used, and, finally, in the case of regular passenger or goods traffic, details regarding the proposed traffic. Permission will only be granted after the car has passed the tests prescribed by the sheriff, and only certain specified roads may be used.

* * *

We understand that the site selected for the home of the coming airship is next door to the Clément-Talbot works at Wormwood Scrubs.

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The careful self-respecting motorist, particularly he who looks after his own car, has more than deep respect for the demon rust, against which a continuous warfare must be waged. As we are included in the above category, and have lately come across a substance which has proved a very present help in this trouble, we hasten to make it known to our readers. It is Palfreyman's (No. 1 grade) rust preventive, for bright metal surfaces, and our readers who desire to wage victorious combat with the red fiend will find that it amply justifies its name. It is the production of Messrs. W. H. Palfreyman and Co., 17, Goree Piazzas, Liverpool.

Club Doings.

Pembrokeshire A.C.

The club held speed trials on Pendine Sands on June 24th, and had a very good entry of both cars and motor cycles. The course was a straight two miles, the sand being in excellent condition. Results of car races:

Scratch Race.—1, George Ace (38 h.p. Daimler, Silent Knight); 2, W. J. Tombs (15 h.p. Deasy).

Handicap Race.—1, H. A. Jones-Lloyd (12-16 h.p. Talbot); 2, George Ace (38 h.p. Daimler-Knight).

The motor cycle events are dealt with in *The Motor Cycle*.

Kent A.C.

A very pleasant function took place at Waringham on Saturday, June 26th, when Mr. and Mrs. F. Evelyn Jones entertained the members of the club at a garden party at their residence, Whyteleafe Grange, Waringham. Unfortunately, the inclement weather prevented many from attending, but the rain held off for a considerable part of the afternoon, and a large number of visitors and members were able to enjoy the hospitality of their host and hostess. Among those present were the chairman (Mr. T. L. Boyd) and Miss Boyd, Mr. and Mrs. Taylor Marsh, Mr. and Mrs. Batchelor, Mr. and Mrs. Wyllie, Mr. and Mrs. H. J. Fraser, Mr. R. W. James, Mr. and Mrs. A. Booth Hearn, Mr. Granville Kenyon (hon. sec.) and Mrs. Kenyon, and many others.

Essex County A.C.

On Saturday last the above club carried out an interesting and instructive semi-military experiment at Chelmsford. The cars assembled at Brentwood, and twenty-eight of them proceeded to form a cordon round Chelmsford, while seven proceeded later to run the blockade established and gain the centre of the town of Chelmsford. The cars were all accompanied by Territorials, those on the blockading cars being in uniform and those on the blockade running vehicles in mufti. Four of the seven cars succeeded in getting through the line, but not without incident. Mr. S. Lomax, of Woodford, cleverly deceived the defenders by fixing up his landaulet to resemble a taxicab, and then getting the occupants to play the part of press photographers. He drove through

without being once challenged. The hon. sec. of the club, Mr. Lindus Ford, made a journey of about thirty miles in order to find a weak place where he could get through. He was running his car on to a barge to cross the river Chelmer near Little Baddow but was detected in the act. He got clear and crossed by a bridge some distance away and made for Chelmsford by way of Breham Park, driving through fields, over rough tracks, and negotiating a stream before finally reaching his goal. Other successful runners were Mr. E. Bentall's car (of Heybridge) and Mr. J. Mason (Ilford).

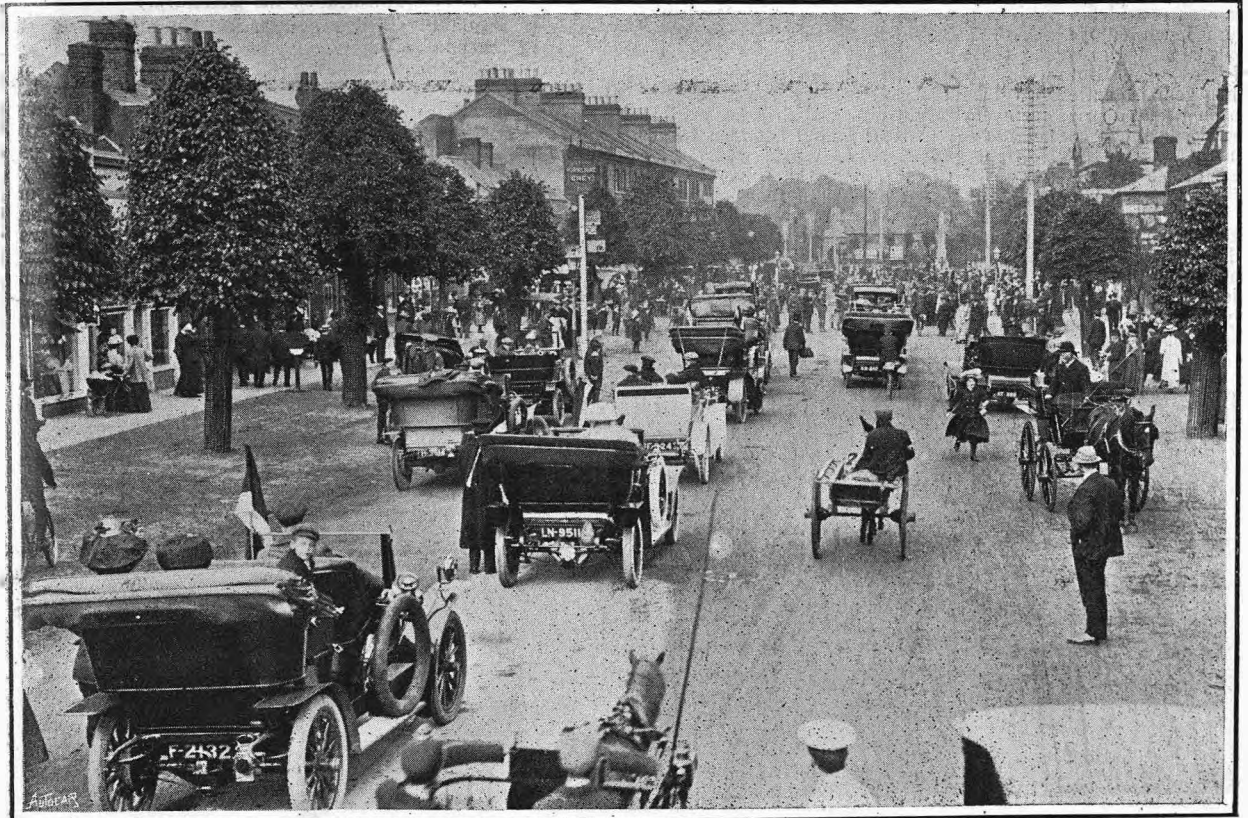
Oxford A.C.

The first motor hill-climb of the Oxford Automobile Club was held on June 24th, on Steepness Hill, a sharp summit on the Chipping Norton and Deddington road. The weather was most unfavourable, and no doubt was responsible for the small attendance. The course covered was hard upon a mile in length, and some good times were made by several of the cars. The climb was a handicap of the respective horse-powers, etc., of the vehicles. Dr. G. Horatio Jones was first with a 10 h.p. De Dion, which covered the distance in 188s., M. Phillipi's 8 h.p. Rover (218s.) being second, Rev. T. I. Miller's 14-16 h.p. Darracq third, and Mr. Morris's 28 h.p. Daimler fourth. The other competitors were Mr. H. McAllister (20-30 h.p. Siddeley), Miss Walker (14-20 h.p. Siddeley), and Mr. Biscoe (12 h.p. Riley). The winner takes the Motor Union's silver medal.

Harrogate A.C.

The members of the Harrogate Automobile Club had a most delightful experience on Saturday afternoon, when they paid a visit to Bramham Park, the seat of Captain Lane-Fox, M.P., Master of the Bramham Moor Hounds. The kennels were open for inspection, but after the glories of the grounds they could make little impression upon the visitors, who, however, were stirred to interest by the fine litters of puppies.

The members of the club present included: Dr. Solly and party (20 h.p. Rover and 14 h.p. S.C.A.T.), Mr. Howson (22 h.p. Aster), Mr. King (10 h.p. Motobloc), Mr. Bannister



The Essex County A.C. The blockading and blockade running cars assembled at Brentwood.

Club Doings.

(six-cylinder Thornycroft), Mr. Chadwick (25 h.p. Maudslay), Mr. Kirk (20-30 h.p. Renault), Dr. Mackay (10 h.p. De Dion), Mr. Blamires (40-50 h.p. Rolls-Royce), Miss Jackson (28 h.p. F.I.A.T.), Mr. Breare (8-10 h.p. Adams-Hewitt), Mr. Little (14-20 h.p. Renault), Mr. Ash (14-20 h.p. Renault), Mr. Simpson (14-16 h.p. Argyll), Mr. Johnson (14-16 h.p. Beisize), Dr. Douglas Wilson (18 h.p. Austin), Mr. J. Hepworth, jun. (40-50 h.p. Rolls-Royce), Mr. Gartside (28 h.p. Daimler), Mr. Holmes (15 h.p. F.I.A.T.), and Mr. Birtwistle (40-50 h.p. Rolls-Royce).

Stockton and District A.C.

Under the auspices of the Stockton and District A.C. a non-stop time test competition was held on Saturday, June 19th, the idea being to travel from Stockton to Harrogate (*via* Clack Lane Ends, Thirsk, Topcliffe, and Knaresborough) in two and a half hours without stopping. The object of the competition was a test of the judgment of the driver as to speed; speedometers, clocks, or watches were prohibited. Each car had to carry an observer to mark the times at start and finish and see that the rules were observed. Mr. N. Downing, Mr. C. McAdams, and Mr. R. F. Lee arrived at the destination, the White Hart Hotel, Harrogate, on time, and others were close up. On Tuesday, the committee considered the reports of the observers, and it was decided that the three prizes should be divided equally amongst the three gentlemen who completed the distance in the stipulated time. It was arranged to promote another similar competition to Clifton, York, on July 17th.

Leicestershire A.C. Cripples' Outing.

On Saturday last Leicester witnessed a spectacle unprecedented in the history of local philanthropy. Forty-nine cars were placed at the disposal of the Cripples' Guild by the Leicestershire A.C. for an afternoon's run into the country. The gaily-decorated cars formed an imposing array as they assembled in Colton Street.

The loading process was painfully pathetic. Old men and maidens, young men and children with gnarled bodies and lifeless limbs; chubby-faced boys and fair-haired girls hopelessly handicapped at the beginning of life's race, were assisted into the various cars, but all showed an air of brightness and buoyancy. Truly, life is inscrutable.

The route taken this year was *via* Groby, Newtown Linford, Ulverscroft Priory, to Hall Gates Farm, where a sumptuous tea was provided. Various games, quite unique in character, were much enjoyed, both hosts and cripples competing in serious struggles. The cocoa-nut alley, under the direction of Mr. J. A. Doran, was crowded with excited customers. This genial gentleman's business maxim, "Three shies for nothing, and a prize for everybody," was probably responsible for the boom in cocoa-nuts. A football match between teams chosen by Mr. A. McAlpin and Mr. W. Watts was chiefly remarkable for the energy of the captains, the clever tactics of the crippled players, and the enthusiasm of the spectators.

The cricket match, one leggers *v.* two leggers, proved an exciting contest. Each crippled batsman had an understudy, who played many parts with much animation and many engaging pleasantries. The one-leggers were ultimately victorious, chiefly owing to the powerful support of Captain Byron, Mr. Percy Baker, Mr. Hilton Johnson, Mr. Frank Robinson, Mr. J. McRobie, and Mr. Stagg. Chocolates were

distributed to the crippled children, through the generosity of Mr. and Mrs. Stagg, and many tender examples of chivalrous service were evidenced by "little, nameless, unremembered acts of kindness and of love" performed by a host of willing helpers.

During the evening the president of the guild, Mr. A. I. Groves, conveyed to the motorists the sincere thanks of the cripples for the red-letter day in their lives, and expressed his deepest gratitude to Mr. A. McAlpin, the courteous secretary of the club, for the excellence of the arrangements. Mr. McAlpin, who was received with musical honours, feelingly responded, and Mr. Percy L. Baker followed with a speech of characteristic geniality and tenderness. A pleasing little episode occurred immediately after tea, when the sum of £4 10s. was handed to Mr. Groves from the motorists as a contribution towards the work of the Cripples' Guild.

Blackheath A.C.

On June 26th the Blackheath Club had a meeting at the Brooklands Track. Two events were contested—a five miles flat race and a climb up the test hill. In the hill-climb Dr. C. M. Holmes's 14-16 h.p. Argyll proved the winner at 7.74 m.p.h. with an efficiency of 76.8 per cent.; Mr. A. Jackson's 18-24 h.p. Mutel was second at 9.44 m.p.h., with an efficiency of 71.4 per cent. The flat race also developed into a contest between these two cars, which made an exciting race of it, each passing the other twice. Mr. Jackson eventually proved the winner with an efficiency of 58.2 per cent., Dr. Holmes's efficiency being 56.7 per cent. Mr. Whiteway's 16-20 h.p. Calthorpe (efficiency 55.04), driven by Mr. L. Beadle, was third. The cars ran with touring bodies, and each carried four passengers in the flat race and two passengers up the test hill. The inclement weather no doubt militated against efficiency and speed on the flat, but notwithstanding the rain the participants thoroughly enjoyed themselves. Col. H. C. L. Holden, R.A., F.R.G.S., who is president of the Blackheath Club, was present, and arranged for the timing of the cars, and subsequently awarded the marks. Great interest was taken in the trial spins of Nazzaro on the F.I.A.T., and in other high-powered cars which were practising on the track.

The Society of Automobile Mechanic Drivers.

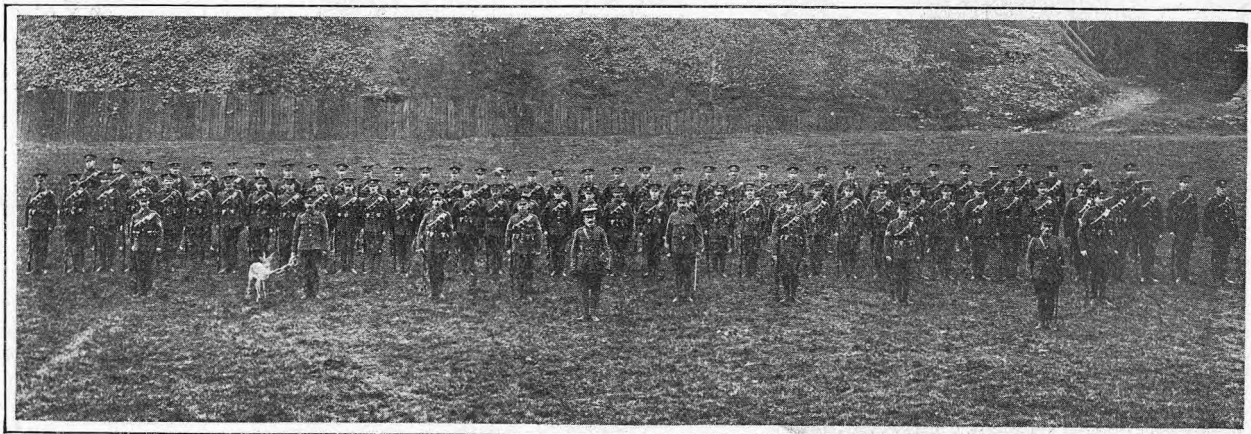
(Communicated by the Secretary.)

The attention of members is particularly directed to the following amended rules:

Rule 16. Members declaring on the sick list will only receive pay from date that declaration form is received.

Rule 17. Every member may introduce a visitor (except a person who has been expelled from or rejected as a candidate morally unfit for the society). No visitor shall pay for any drink, meal, or other refreshment in the society's rooms. The member introducing a visitor shall be responsible for everything supplied to him. Every member shall on introducing a visitor enter his name and address, as well as his own name, in a book to be kept for that purpose, and any member neglecting to do so shall be fined a sum of 2s. 6d.

Rule 18. The society premises shall open at 9 a.m. and close at 12 p.m.



D Company of the 8th Battalion of the Royal Warwickshire Regiment, composed exclusively of the employees of the Dunlop Tyre and Rubber Companies—a striking example of the patriotic enthusiasm infused into the staffs by the Du Cros family.