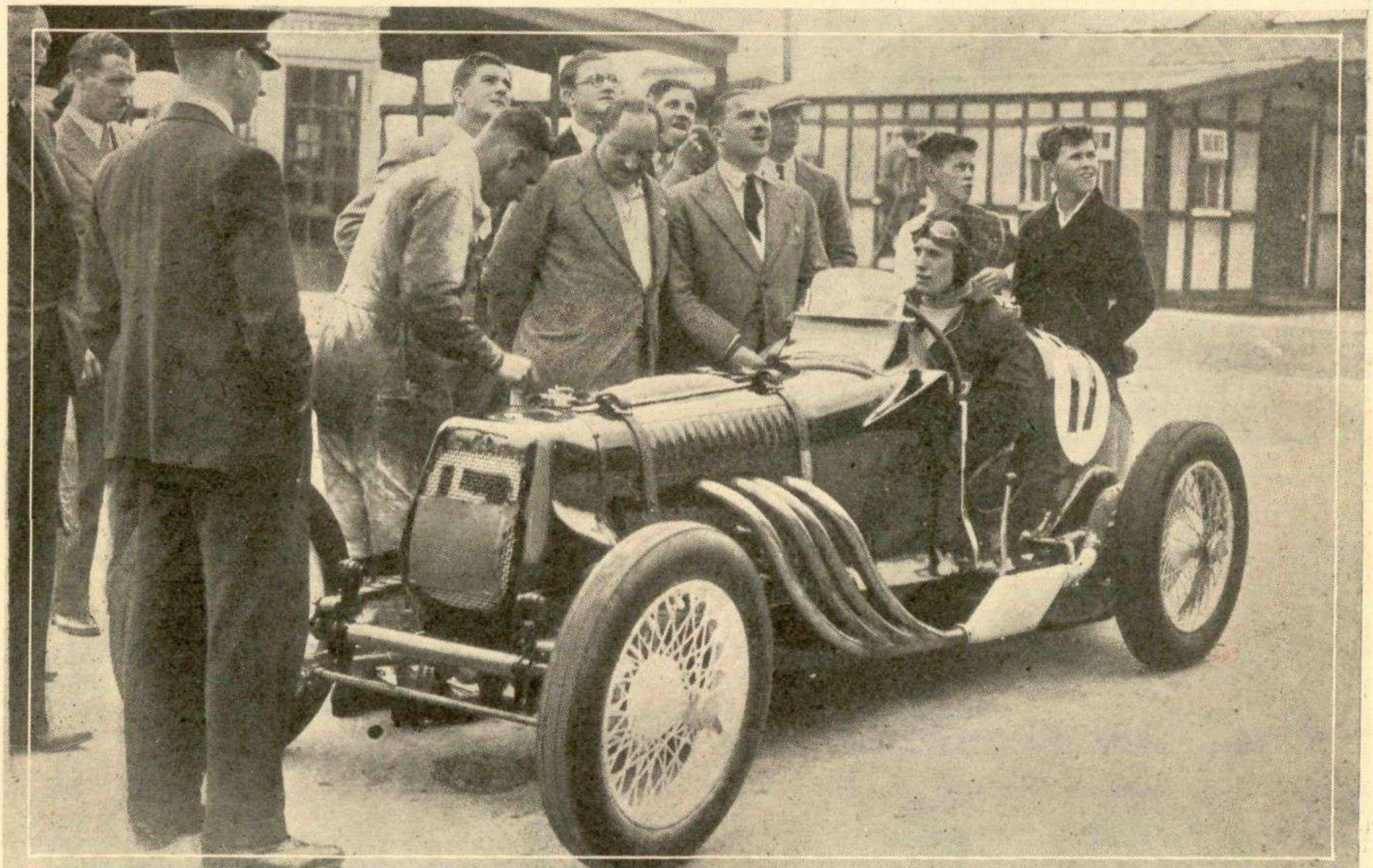
Vol. XXI No. 7 THE RACING CAR ENGINES OF 1935-1940 *July, 1945*

MOTOR SPORT

INCORPORATING Speed

ONE SHILLING MONTHLY



Keystone Press Agency

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"BASIC" IS BACK

But what are the Prospects for Rallies, Trials and Racing?

RATHER more than a month's enjoyment of motoring on "basic" ration petrol will have been experienced by the time these words are read. This new freedom is excellent and the future looks distinctly more rosy from our point of view than has been the case for a long time. We can expect rallies such as that at Chessington and the London Zoo to happen again, and it should not be impossible to have short trials on saved-up "basic," perhaps in August—for officialdom this time encourages the saving up of our pleasure "Pool." The ration is not sufficiently generous to give rise to hopes of a resumption of the M.C.C. "Land's End" this year, but maybe in 1946 . . . .

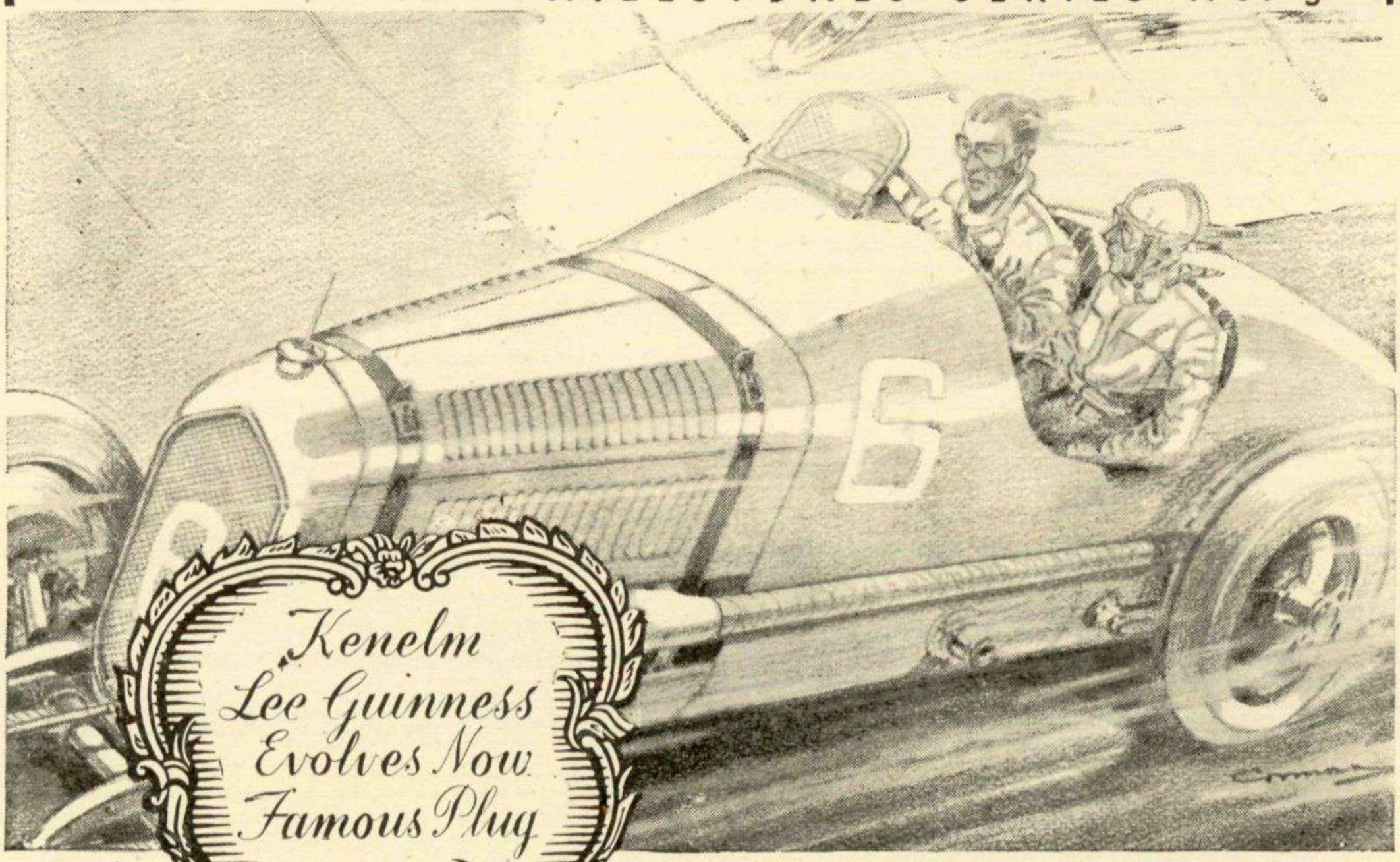
And how grand will it be to once again make those happy excursions to compete in, marshal, or spectate at, trials. Once more cars will park in convenient places at the foot of slimy gradients and long vigils will be observed as competing cars attempt the hills. Once again there will be hasty calculations as to whether it will be possible to spectate at another hill on the route before the competitors are due. Gum boots will be dragged off, maps consulted, and cars hastily started and driven across country. . . . After it all there will be gatherings of queerly-garbed men and girls over tea, when motor talk will prevail, interrupted only as the results are read out. We shall realise, when such things happen again, what we have missed these last five years. But it will not be as it was pre-1939 for many a long day.

For some considerable time trials must, of necessity, be infrequent, and very brief as to route. Racing will take longer to recommence. Donington, Shelsley Walsh and Prescott look like being available fairly soon, but the Crystal Palace may not again see racing on the outskirts of the Metropolis. And the future of Brooklands—mysteriously, excitingly new centre of speed in 1907, surviving the 1914–18 war to resume in 1920, when men motored fast with a vengeance, in tricky, spartan cars—the future of Brooklands after this war is, alas, decidedly uncertain. However, we must be thankful for small mercies, and the freedom which "basic" provides will be appreciated by none more than the enthusiast.

Carefully-stored sports cars are again coming into use, and all over the country plans are being laid for new "specials" and changes of car to meet our long-postponed ability to motor where we will, for pleasure. In the excitement and relief of peace, let us not forget those of our world who have fallen in its attainment. The number of racing motorists who laid down their lives has been large. Surely some form of memorial, not necessarily a cold slab of stone, should be founded, that such men shall not be forgotten when cars race again at places where they once raced? Perhaps an appreciative Government will preserve Brooklands Track for posterity in order that there, where the chequered flag has so often flown, suitable tribute may be made.

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Kenelm Lee Guinness on Brooklands Track

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Scientific S.E.51

THE RACING CAR ENGINES OF 1935-1940

By Capt. John Moon

Last month Capt. John Moon described his idea of a 1½-litre G.P. car. In this article he reviews the racing engines of 1935-40, and the figures he quotes make an interesting comparison with those he would expect to obtain from his ideal design—Ed.

THERE ARE, I think, few more interesting subjects to the motoring enthusiast than the progress of racing-car design through the years, and to my mind the series of articles on "Racing Car Evolution" which appeared in MOTOR SPORT some two years ago are amongst the most interesting that have ever appeared. Of these Laurence Pomeroy's three particularly stand out, covering, as they do, one of two periods when development has been most spectacular, and it is a matter for much regret that the period 1933 to 1939, which saw equally spectacular development, has not been covered by the same pen in the same manner. Presumably, the necessary facts and figures for such an analysis are still more or less closely guarded secrets. Another difficulty is that progress was made in four parallel directions—in Grand Prix racing and in the three small-capacity classes, which renders comparison difficult.

Serial	Make	Year	No. of Cylinder	Bore mm.	Stroke mm.	Capacity c.c.	Bore-Stroke Ratio	B.H.P.	Speed r.p.m.	H.P. per Litre	B.M.E.P. lb/sq. in.	Blower Press. lb./sq. in.	Unblown M.E.P. lb./sq. in.	H.P./ Piston Area sq. in.	Piston Speed ft./min.	Remarks
1	Benelli ...	39	4	42	45	249.9	1.07	52	10000	208	270	—	—	6.09	2940	Believed Long Race
2	M.G. ...	36	4	57	73	746	1.28	141	7300	189	335	26	116	8.91	3480	Short Race
3	Austin ...	37	4	60.32	65.1	744	1.07	134	8500	180	275	—	—	7.58	3480	Short Race
4	M.G. ...	39	6	57	71	1086	1.25	200	7400	184	323	26	117	8.40	3440	Sprint
5	Delage ...	26-36	8	55.8	76	1484	1.36	185	8000	124	202	7.5	134	6.00	3940	Long Race
6	E.R.A. ...	38	6	57.5	95.2	1488	1.67	255	7500	170	296	—	—	10.6	4680	Short Race
7	E.R.A. ...	39	6	63	80	1495	1.27	250 305	8000 8000	167 205	272 332	28 —	94 —	8.60 10.5	4190 4190	Long Race Short Race
8	Maserati ...	40	4	78	78	1486	1.00	240	7300	162	287	—	—	8.12	3730	Long Race
9	Alfa-Romeo T 308 ...	40	8	58	70	1479	1.21	220 218	8000 8500	149 147	241 225	— —	— —	6.75 6.69	3670 3910	Long Race
10	Mercédès-Benz ...	39	8	—	—	—	—	250	—	—	—	—	—	—	—	Long Race
11	Alta ...	39	4	79	100	1963	1.23	275	5000	140	363	20	155	9.07	3270	Short Race
12	Mercédès-Benz ...	39	12	67.2	70	2970	1.04	500	7500	168	291	25-30	108-96	7.55	3440	Long Race
13	Ricardo ...	40	16	62	62	2995	1.00	500	9000	167	241	—	—	6.68	3670	Long Race

In an effort to get some idea of the direction in which progress was being made, I spent some hours one evening last winter collecting as much data as I could regarding racing engines of the period 1935 up to and including the very short Italian racing season of 1940. Since then I have loosed my slide rule on these figures, with results that are interesting but of very limited value, for two reasons.

First, without casting any aspersions upon our excellent semi-technical Press, I feel the figures are not too reliable—in fact, in some cases one finds two completely different sets of figures for one car. Secondly, little or no indication is given of the state of tune for the particular output quoted.

However, for what they are worth I give selected examples from my delvings in an accompanying table, and have followed it by certain remarks on the various engines listed therein. In the table I have attempted to give in the remarks column some indication of the state of tune by writing "long race," indicating state to withstand 200 miles or more of racing, "short race" to cover races up to 25 miles, or "sprint" to cover hill-climbs or short-distance record runs.

(1) The 250-c.c. Benelli engine, which is, of course, a motor-cycle power unit, is rather outside the usual sphere of MOTOR SPORT, but is included because it is an excellent example of the way in which the power output, judged on a swept volume basis, can be increased by reducing the size of the cylinders. While the Benelli's piston speed is much the lowest on the table, being less than 75 per cent. of the generally accepted limit for racing engines of around 4,000 ft. per minute, and the brake mean effective pressure is by no means the highest, the horse-power per litre figure is the highest quoted. While the war has brought us 24-cylinder aero engines and 30-cylinder tank engines, the prospect of 24-cylinder 1½-litres, and 48-cylinder cars to the 1938–39 G.P. formula is awe-inspiring, to say the least.

(2) These figures refer to the R-type M.G. engine, fitted with the McEvoy-Pomeroy twin camshaft head, the development of which has been described in the war-time pages of MOTOR SPORT, and it is unnecessary to add to the comments made there, except to record my belief that these figures apply to a state of tune for sprint events only, and that that power output could not be maintained throughout a long-distance race.

(3) I have always been a fervent admirer of T. Murray Jamieson's brilliant twin overhead camshaft Austin, representing, as it does, the only racing engine planned *ab initio* as such, to be designed and produced in England in the last decade. The figures that I quote were given to me by the Austin Motor Company in early 1938, and are quite likely to have been improved upon during subsequent development. An interesting point that does arise is that if the blower pressure is assumed to be about 18 lb./sq. in., which is about the highest value that it can have in view of the use of a Roots blower, the b.m.e.p. of an equivalent unblown engine comes out at 124 lb./sq. in. This leads one to suppose that had the Austin had anti-friction bearings throughout, it would have shown itself at least the equal in this respect of the 1½-litre straight-eight Delage, held by many to be the most efficient engine yet produced in cylinder head design and porting layout. Incidentally, should this engine be developed to run up to 12,000 r.p.m., as was its designer's intention, piston speed will reach 5,140 ft. per min., a pretty staggering figure.

(4) The 1,100-c.c. 6-cylinder engine fitted to Major Goldie Gardiner's 200-m.p.h. car is unique amongst engines of ultra high output in being without the advantage of an inclined valve head, in spite of which the mean effective pressures are commendably high. It is thought, however, that the engine is probably tuned to the "*n*th" degree and that it would not have sufficient stamina to last through even a short race.

(5) Figures for the 1926 1½-litre Delage,

in the form in which it was raced in 1936 by the late Richard Seaman, are included largely for the sake of comparison. Of chief interest is the equivalent unblown m.e.p., which at 134 lb./sq. in. has few rivals. This, I think, is due to three reasons. Firstly, to the Delage's magnificent porting layout, which gains a lot from Lory's decision not to use a detachable cylinder head. Secondly, the rather high stroke-bore ratio enables a 7.5 compression ratio to be used without having to have an odd-shaped combustion chamber, and, finally, the well-laid-out mechanical design ensures that a minimum of the power developed in the heads is wasted.

(6) The figures for the 1938 1½-litre E.R.A. are interesting as showing what can be done in the way of developing an existing design, even though it has unsatisfactory features. In this case the small bore and long stroke put the piston speed way above the 4,000 ft. per minute figure, and the horse-power per sq. in. of piston area is again very high.

(7) The stroke-bore ratio of the 1939 E.R.A. is much reduced, though the piston speed is still rather above average. It will be noted that two sets of figures are given, the first being those quoted when the car was described in the Press and which, it is assumed, are those for sustained output. The second power output comes from a Raymond Mays article in the *Autocar* in which the '39 E.R.A.'s output is described as 25 h.p. less than that of Mays's black 2-litre, which is credited with 330 h.p. The speed at which this power is developed is my own estimate, and figures deduced therefore should be viewed accordingly.

It is interesting to note that the 1939 E.R.A. can sustain over a long race the same output as its predecessor could for a short race only.

(8) The 1½-litre Maserati is remarkable in view of the large power output obtained from the four large pots. The design of a piston 78 mm. in diameter transmitting 60 h.p. must be quite a problem. Four valves and four ports are used per cylinder in order to assist the induction and exhaust. Although this represents one of the most successful pre-war 1½-litres, it is difficult to foresee much development for the Maserati brothers until they return to a 6- or 8-cylinder 1½-litre.

Incidentally, a 3-litre 22-valve engine was also produced, giving much the same performance figures.

(9) I quote two sets of figures for the T 308 Alfa-Romeo in order to indicate the sort of difficulties that one comes up against. Although the power outputs are similar, the m.e.p.s vary considerably, due to the differing speeds. In view of the use of a single-stage Roots blower, probably blowing at about 15 lb./sq. in., one can only say that either figure is possible, though I am inclined to think the former is more correct.

(10) Unfortunately, my researches did not reveal any figures for the interesting 1½-litre Mercédès, though I believe that the bore and stroke have been published and are remarkable—in fact, I think, so far unique in that the stroke-bore ratio is less than unity.

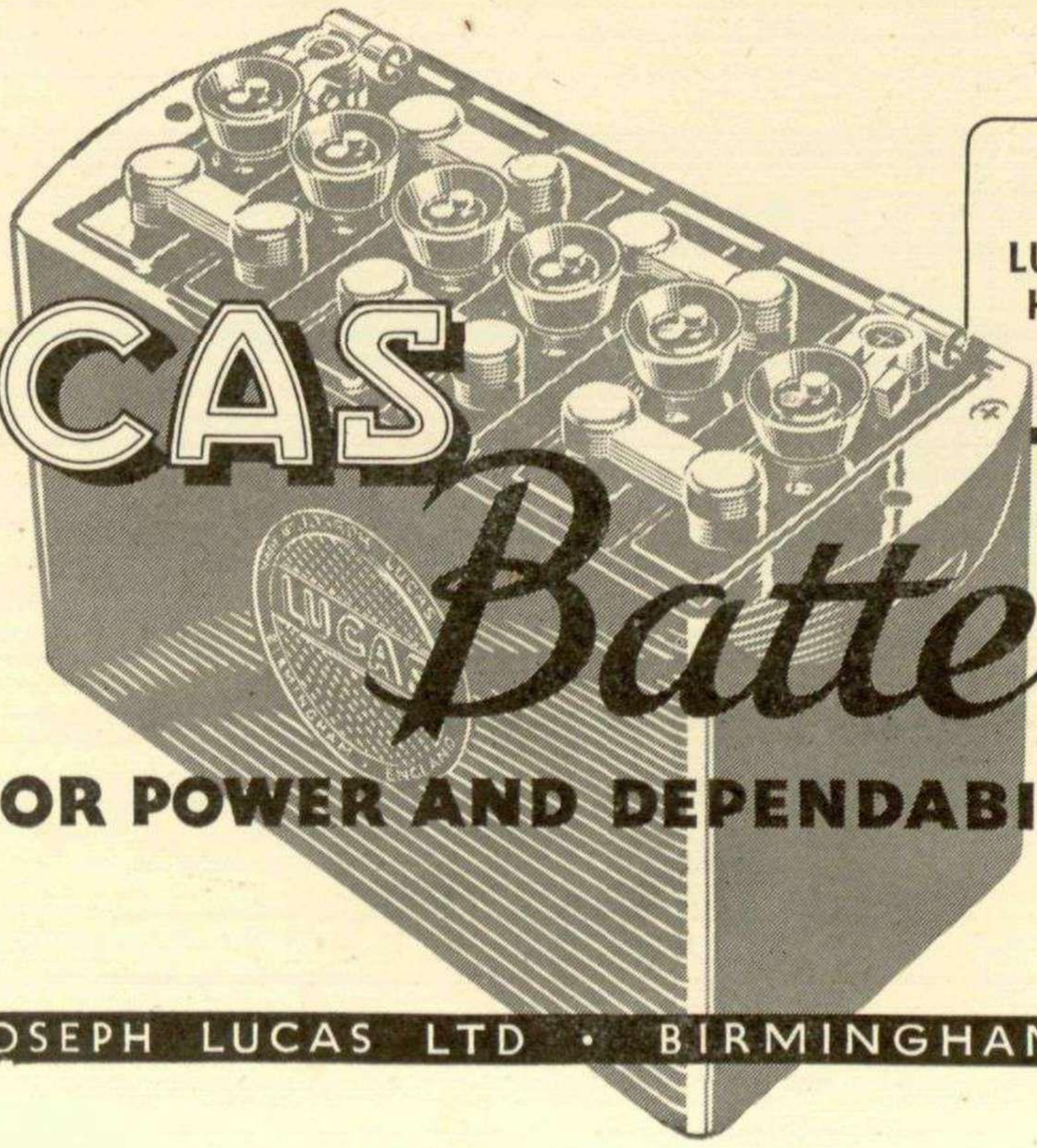
(11) The Alta figures are included as, if accurate, they show that more than a little is known of cylinder head design at Tolworth, as is indicated by the high equivalent unblown m.e.p.s, though these must be aided by the low crankshaft speed at which maximum power is developed. Nevertheless, things augur well for the 1½-litre V8, with the possibilities of which Geoffrey Taylor was known to have been toying.

(12) The Mercédès 3-litre gives a rather low equivalent unblown m.e.p., which indicates either that there is still room for development or that the head and porting are not so efficient as they might be.

(13) I do not know whether the 3-litre 16-cylinder engine designed by Ricardo for the 1940 Grand Prix Alfa-Romeo exists except on paper, but in any case it is an extremely interesting project. The boost pressure, which is probably about 25 lb./sq. in., indicates a low equivalent unblown m.e.p. of about 90 lb./sq. in., due in some measure to the high engine speed and the consequent short space of time available for filling the cylinder.

There appears to be, however, very considerable scope for development in this engine, and thermo-dynamically it would appear that an output of 650 h.p. is within its capabilities.

As I have stated before, it is difficult and, indeed, dangerous to attempt to draw far-reaching conclusions from the above. It does appear that the limits for engines for sustained output are at present about 290 lb./sq. in. m.e.p., and fairly well under 4,000 ft. per minute piston speed. It also appears that these two figures are seldom reached simultaneously. One fact does, I think, stand out, and that is that no engine yet appears to have been built to equal the 1926 Delage as regards efficiency of cylinder head and porting layout.



THE VINTAGE IN INDIA

A 1926 3-litre "Speed Model" Bentley and a 1925 20-h.p. Rolls-Royce compared over going which is, to-day, more familiar to many of our readers than was the case before the war.—Ed.

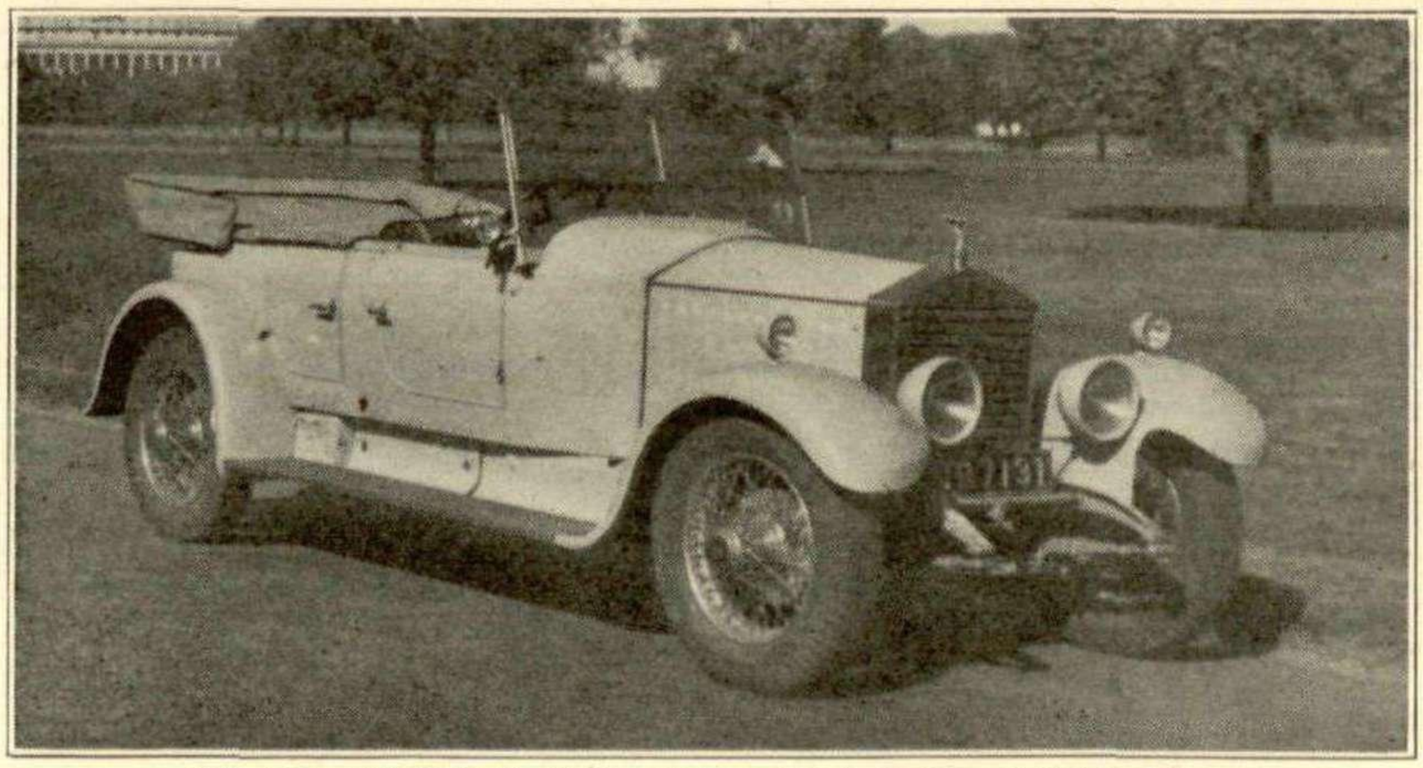
THE opinion has been expressed to me several times at home that over 100 miles of ordinary motoring (*not* the Great North Road), equally good time could be made with a well-tuned 20-h.p. Rolls-Royce as with a "Speed Model" 3-litre Bentley, and with considerably less fatigue to the driver. My personal experiences with a 1927 3-litre Bentley (chassis No. BL 1607, at one time owned by Sir Malcolm Campbell) in the U.K. leads me to doubt this opinion as to time, but leaves me in no doubt whatever as to the fatigue side of the matter. Weighing a mere 10 stone, I used to find that 100 miles driving in the Bentley over ordinary roads, with normal traffic, at an average speed of, say, 37 m.p.h., left me at the end of the trip hardly as "fresh as paint." For speed no 20 or 20/25 Rolls-Royce could hold this car, and on many a run, notably one from Winchester to Oxford in one hour dead late on the night of the Naval Review, 1937, I cannot imagine a pursuit by one of them. As a matter of interest, BL 1607, when *well warmed up to 85° C.*, would attain 92 m.p.h. on the A.T. speedometer at just over 3,600 r.p.m. (slight valve bounce at this speed), which was probably a genuine 88, and would accelerate from rest to 50 m.p.h. in 13 sec. as timed by a Longines chronometer over four runs; this acceleration test was made with only one change, *i.e.*, from first to second gear. This car was kept in perfect tune by Bentley Motors (1931), Ltd., and had only covered 46,000 miles at the time of purchase. Petrol consumption was 22 m.p.g. when driven quietly, and anything from 18-16 when hustled, particularly with the hood up. So much for my initial experiences with this splendid type of sporting car; the real purpose of this article is a comparison of the Bentley and "Twenty" Rolls-Royce in the East.

In March, 1941, I discovered a 1924 "Speed Model" Bentley (chassis No. 443) in Poona, but owing to having on the previous day purchased by wire to Delhi a 1935 Lancia "Dilambda" sports tourer, funds did not permit of buying and maintaining a second car. However, in due course No. 443 was purchased by a friend of mine for about £30, and though the bodywork was rough, mechanically the car was in very sound order. Its big snag was the old-type wheels fitted with 820 by 120 tyres for which, search as we might, and did, we were never able to find the much-needed spares. This car was driven to Delhi by two friends, the time taken being two and a half days. I was to have been the third driver for this interesting trip but, unfortunately, was removed to hospital with paratyphoid a few days before we were due to start. The journey of 800-odd miles was accomplished with only one puncture, much to the surprise of the crew, and in good running time. The old car averaged 18 m.p.g. throughout and went over the Western Ghats in great style and without any signs of overheating. No. 443 is still running daily in Delhi, although I do not like to think of the present state of the tyres!

October, 1941, saw me in possession of a 1925 20-h.p. Rolls-Royce (chassis No. GPK 71), fitted with a light barrel-sided 4-seater touring body by Barkers. This car had the 4-speed, right-hand change gearbox and servo-operated 4-wheel brakes, also 20-in. stainless steel wheels fitted with 6.50-in. by 20-in. tyres. Being stationed in Quetta at the time, the car had to make the journey of some 650 miles from Lahore—this journey was *via* Multan, Dera Ghazi Khan and Loralai, and was without incident, *i.e.*, without any mechanical trouble and without being shot at by tribesmen (the section Rakhni-Loralai, through the Sulaiman mountains, is only open to traffic twice a week and all vehicles have to go in convoy with an escort provided by the nearest armoured regiment). I shall for long remember my first drive in this car (which, incidentally, began at midnight) seated behind the famous R.R. mascot and the astonishingly smooth engine. The late start was due to having worked all day on the car with an excellent R.R. mechanic from Delhi. It had been laid up for years, and time was getting short and there was little left of the five days' leave which I had snatched in order to travel to the Punjab to inspect and to acquire it. Evidently I had pressed the poor mechanic beyond his "peak revs.," for he developed a high fever and I had to leave him on Ferozepore railway station to find his way back to Delhi as best he could.

At this time there was in Quetta a 1927–28 4½-litre Bentley fitted with an open Van den Plas fabric body, owned by a friend of mine who had brought the car out from England some years previously. This was probably one of the first "4½s" to be produced, but it had done only a moderate mileage and had been very carefully driven and maintained. I had the pleasure of several short runs in this car, which handled superbly and proved surprisingly flexible. For this country the "4½" has many advantages over the 3-litre, due to its longer wheelbase, greater weight, and less harsh suspension, which factors make it a much more comfortable car on the roads out here, in addition to the very necessary extra body space. I am not advocating that the 4½-litre is a better-balanced car on wet roads, etc., than the 3-litre, as I believe the contrary to be the case, nor am I stating that the springing of either type is ideal for this country—far from it, as, except when heavily laden, both suspensions are much too harsh. It might here be added that fabric bodies are not a great success in India as in the hot climate they soon tend to become shabby; however, regular cleaning with engine oil helps them to retain their appearance and condition. Quetta also held two other Bentleys, a 1931 4½-litre open car, *mechanically in very good order and with* a terrific performance, but with the coachwork in a very untidy state; and a 1922 3-litre (chassis No. 62) which had covered goodness knows how many thousands of miles. This latter car had the Smith multiple-jet carburetter and the original old-fashioned wheels with high-pressure tyres. On a short visit to Quetta in August, 1944, I had hoped to find old No. 62 still there and to be able to get some spares off it for my present 3-litre, but, unluckily, I was too late, as it had been sold for scrap after ending its road career in 1943.

To return to the old Rolls-Royce: it performed very well in Quetta despite the altitude of 5,500 feet above sea level, but I was never able to adjust its complicated carburetter to give as good a performance as could be obtained in the plains. However, it used to pull up the hill past the Staff College at 50 m.p.h., which is a very fair speed, and slightly dangerous, too, considering there are two roundabouts to be negotiated. Minor trouble was experienced with the platinum

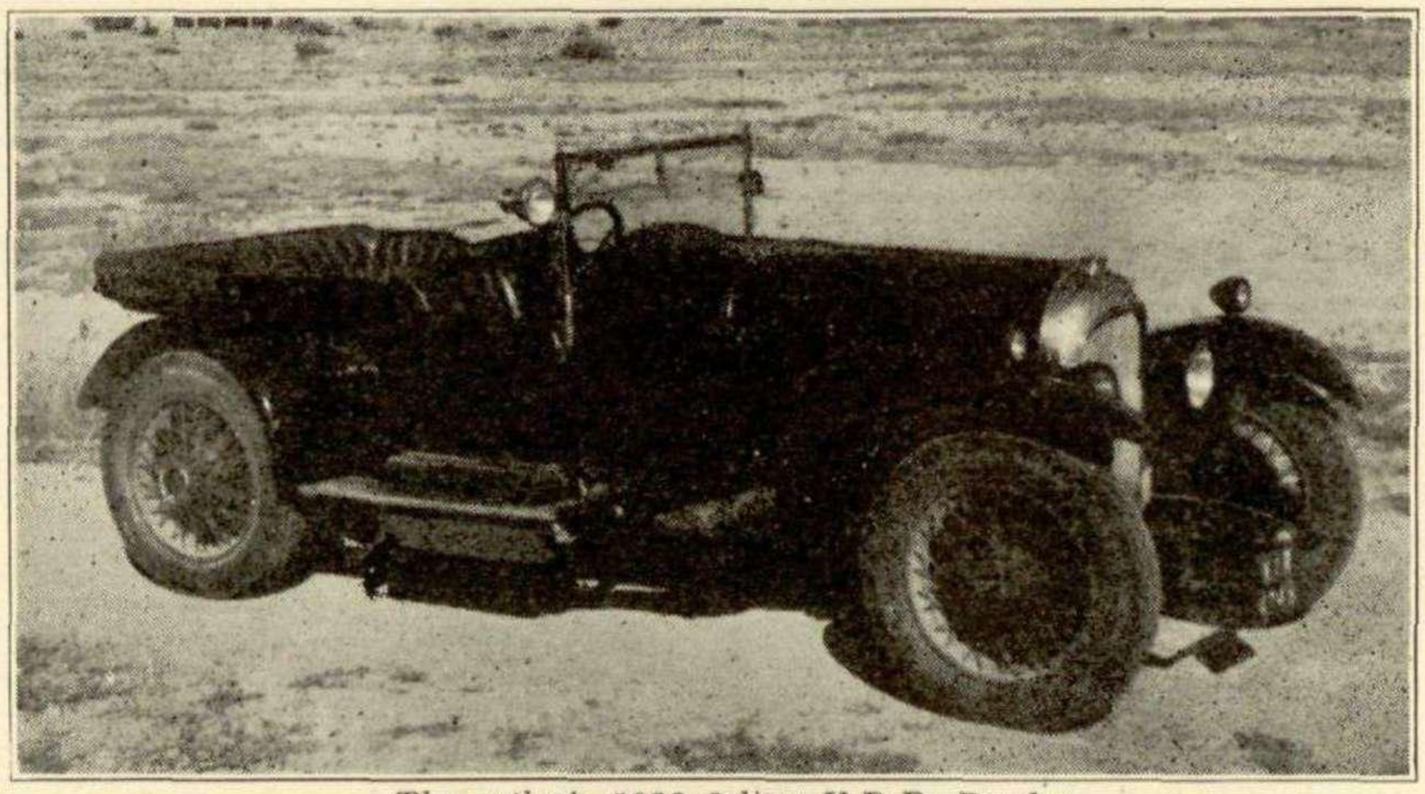


The "Twenty" Rolls-Royce photographed in New Delhi in 1942.

points and with the condenser, both of which items were renewed as the result of a wire to Delhi. A new battery was also obtained to bring the car up to scratch for long-distance travelling. Unfortunately, the magneto was missing, having been sent to England for repairs before the war, and I was never able to trace it in spite of the kindly help of Messrs. Rolls-Royce, Ltd., Derby. I am a great believer in magneto ignition over the coil type, since in a country where the life of one's battery is very short—18 months at the best—it is wiser not to have to be dependent on even the best battery. Dual ignition, magneto and coil, or else twin magnetos, is the ideal arrangement.

My stay at Quetta concluded at the end of January, 1942, and the Army desired my presence elsewhere, so off we set for Delhi; I made for this city as, not knowing my future destination, I considered it the best place to leave the car, there being located the R.R. agents and service station, who could look after it for me. We (I was travelling in company with some friends who had a 1935 straight-eight Pontiac saloon) drove from Quetta down the "hill" to Sibi, thence to Multan by rail as no proper road existed in those days. At Multan we detrained the cars. From Multan to Lahore there is a magnificent metalled road on which one can travel at a mile a minute all the way. However, as GPK 71 was not of the "40/50" type, this was beyond our capabilities; nevertheless, the old car did very well to average over 42 m.p.h. for this section of the trip. The car was very heavily laden, with my servant, myself, and more than 3 cwt. of luggage—in fact, my kit was stacked in the rear compartment to a height of about 7 ft. The Barker body had the spare wheel at the rear and there was no grid, but by removing the back seat and taking advantage of the flat floor, an amazing amount of kit could be stowed away. I preceded the Pontiac, which was even more heavily loaded, set the hand throttle for 48 m.p.h., which was the R.R.'s best cruising gait, and merely sat and steered. The Pontiac, whose springs were on the weak side through much use, could not maintain this pace and fell back a few miles astern. For this journey my car averaged 20 m.p.g., which exceeded my expectations.

At Lahore one joins the Grand Trunk road which links Bombay to Peshawar in the North-West Frontier Province, *via* Delhi, Lahore and Rawalpindi, a distance of some 1,400 miles. I do not know the Bombay–Delhi section, but that from Delhi to Peshawar provides very good going, although towns such as Jullundur and Ludhiana might be more effectively by-passed. On this occasion the final stage (Lahore–Delhi) of my journey was the greatest distance to date that I had driven "solo"—the speedometer "trip" registered 327 miles when I eventually arrived at the Cecil Hotel two hours after nightfall. There is little of interest about a journey such as this as the scenery becomes very monotonous, the countryside being quite flat to the horizon, and except for bullock carts and a few 'buses there is very little traffic. After the first 100 miles, with no one to talk to, driving even the most exciting car would become rather tedious, especially with the glare of the sun and the clouds of dust that rise whenever one meets a vehicle travelling in the opposite direction. Most of the trunk road was then really only one-car wide, with the result that when meeting or overtaking, one vehicle at least had to move over on to the unmetalled sides. To reduce the glare the screen of my car had been fitted with blue safety glass, which was a great boon, and if I were staying on in India I would go to considerable lengths to get hold of some similar glass.



The author's **1926** *3-litre V.D.P. Bentley.*

Much to the credit of GPK 71 this long day's driving did not fatigue me unduly, although admittedly I was not displeased when I saw the lights of Delhi ahead of me. The front seat, which was in one piece and well upholstered, provided a first-class driving position, with a good view of both wings, and made one feel well in control of everything. The very light brakes and steering, combined with the excellent suspension, rendered this car quite the most comfortable and pleasant to handle of the old timers that I have driven. For the journey under discussion the Rolls-Royce averaged 37 m.p.h. and just under 22 m.p.g. of petrol, which, I think, will be judged a creditable performance, in view of the subsequent "discoveries" made within the "works," and referred to below.

This trip brought to light the existence of slackness in both the main and the big-end bearings, so that at 38 m.p.h. there was a pronounced engine "period." However, above and below this speed the engine retained its smoothness. This factor decided the question of whether a thorough overhaul was necessary, so after a quick look at the state of my bank balance—not very impressive when one is a lieutenant in the Indian Army!—the car was handed over to the Delhi agents to make as good a job as they could of the engine for £50. The dismantling process revealed several "interesting" defects, notably the condition of (*a*) the valves, which, if ground any further, would have fallen through the cylinder-head, and (*b*) the bearing caps, which appeared to have been packed with tin-foil. The condition of the pistons and bores showed that these were good for a considerable extra mileage. Work carried out included fitting a complete new set of both inlet and exhaust valves, decarbonising, the fitting of new main and big-end bearings, with consequent re-trueing of the crankshaft journals, new plugs, overhaul of timing mechanism and of the dynamo and other minor adjustments. The clutch, except for adjustments to the withdrawal mechanism, the gearbox, universal joints, differential, wheel bearings, etc., all proved to be in good shape, but the opportunity was taken of relining the brakes. As luck would have it, owing to the exigencies of the Service, I was not to benefit from this overhaul for, except for a brief 10 days' leave in the winter of 1942, I never had a chance to use the car again. Nine hundred miles separated me from it, and after 15 months of this, I advertised it and a purchaser was not long in coming forward; I think he found a really good old motor all ready for him. I parted with GPK 71 with much regret, and if circumstances ever brought me near its present location, I would gladly buy it back again. My short experience of it during my winter leave showed that the engine had taken on a new lease of life, although, with new bearings, it had naturally to be driven quietly for the first 500 miles. In addition to the mechanical work carried out, the coachwork was tidied up and a new tonneau cover and hood bag fitted; the paintwork, which was primrose and of many years' service, needed very little touching up.

In July, 1943, I invested part of the proceeds of the sale of the R.R. in another of the old, and even bolder, cars of the middle 1920's, this being a 1926 3-litre "Speed Model" Bentley (chassis No. DE 1208), fitted with the standard Vanden-Plas open fabric body. I had had my eyes on this car since late 1941, and I knew that it had a good history and had been well cared for by its previous owners. In fact, in 1938 its enthusiastic owner had put it into trim for the overland journey from India to England, and I have on the car's file a letter from Bentley Motors, Ltd., showing their interest in the projected trip. Since early 1940 the log book showed the car as having covered 7,500 miles only, although it had been laid up for over a year when I purchased it. A purchase, I may say, conditional on my reselling it to the owner if

he returned to India from the U.K. and I desired to part with it.

Owing to the very limited amount of petrol available (a basic ration of four gallons per month), which allowed only occasional use of the car, it was decided to dismantle the engine and to have a look inside it. Some I.E.M.E. friends, who had a little spare time, offered their very kind and much appreciated help and knowledge ; and so we set to, wearing the minimum of clothing as the weather was hot, the day temperature never falling below 100° F. in the shade. We were lucky in having the car's original instruction manual and also a detailed decarbonising instruction from the makers to assist us. First of all, after the usual preliminaries such as disconnecting the dynamo drive and removing the radiator, off came the cylinder block—there is no such luxury as a detachable head on the 3-litre engine !—and this operation allowed us to inspect the crankshaft, pistons and cylinder walls. All these parts were in good condition, particularly the main. big- and little-end bearings, which showed no signs of wear—they had probably been renewed in a previous overhaul. Next the top half of the engine came in for inspection. We removed the valves and guides, also the rocker gear but not the camshaft ; we also took off the water jacket cover plates, but found no great quantity of "foreign" matter inside. The state of the valves was the worst feature, and was responsible for the engine having compression a lot below par. However, we gave them the last grinding-in that they will ever get and replaced them with their original guides in which they were too slack a fit. As spares are unobtainable in India, a cable was sent to England requesting a new set of both these parts if such could be located in war-time. This done, we assembled the engine, having, of course, also decarbonised it and checked over what parts we could, and transferred our attentions to the valve and ignition timings, both of which we had found not to be in accord with the makers' stipulated settings. For anyone interested, these are as follows :—

Valve timing : Taken on No. 1 cylinder. Inlet valve opens at 10° before t.d.c., and exhaust valve closes at 10° after t.d.c. ; 10° according to our calculations represented 3½ teeth on the flywheel periphery.

Ignition timing : Both magnetos to fire at 45° before t.d.c. when fully advanced. The o.s. magneto should be set first, and n.s. one synchronised with it.

Tappet clearances when hot are 0.019 in. for both inlet and exhaust valves, but these are different for some of the earlier-series engines.

The remainder of the car was checked over with the exception of the rear axle, and all parts were found to be thoroughly serviceable bar the magnetos, whose best days had been ended by the period of storage in the damp climate of Karachi. I have had the latter remagnetised, but not with 100 per cent. success.

On the road the car performs well, although with the worn state of the valves it obviously cannot give of its best, but in any case I very seldom drive it at more than 50 m.p.h., as in the hot climate the engine tends to overheat. However, it will attain 45 and 55 m.p.h. in second and third gears, respectively, and the highest speed so far on top has been 75 m.p.h. The province of Sind, in which the car has been used, has, with one exception, very inferior roads, and it is probably the most unsuitable part of India for a car of this type. The main road, Karachi–Rohri, is the only metalled highway, all the minor roads being unmetalled and covered with layers of the finest sort of dust which, as will be appreciated, does not tend to produce an ideal mixture to go through the intakes of the twin S.U.s. If one were using the car extensively under these conditions some sort of improvised oil bath air-filter would be essential, but such a device is not easy to fit owing to the very narrow space between the carburetters and the side of the bonnet. The simplest solution to this problem would be to redesign the induction manifold and carburetter positions somewhat on the lines of the system adopted for the 25-h.p. Wolseley. The only long trip that I have done so far in the Bentley is that from Hyderabad to Karachi, a distance of 120 miles, with an average of one Irish bridge per mile, which is probably a conservative estimate. However, there is almost no traffic on this section, so again it is a matter only of steering the car, there being no gradients which the car will not ascend in top gear. This run provided an interesting comparison between ancient and modern types of suspension for following astern of me was our Staff Captain driving the Brigade Commander's 1941 Ford de luxe staff car. We were travelling at a consistent speed of 45 m.p.h., and although the Bentley went over the Irish bridges without slackening of pace, the Ford lost 100 yards every time we encountered one of them. Its transverse suspension sets up an unpleasant "oscillation" if taken over such a bridge too fast, whereas the Bentley, well laden, with its hard semi-elliptics, rides over it very comfortably. My remarks earlier on about the harshness of the suspension for this country of both the 3- and 4½-litre cars is not modified by this last statement. I have somewhat improved the riding of my car by fitting 6.0-in. by 21-in. oversize tyres in place of the 5.25-in. by 21-in., as I was very lucky in finding an almost new set of the former size on a derelict 1925 Hudson. The Hyderabad-Karachi trip was accomplished at an average speed of 38 m.p.h. and 20 m.p.g. of petrol.

The future is, again, most uncertain, and it is very likely that I shall be separated by many miles from my old car, but it is my present intention to store it until better times come and then to ship it home to England for stripping down and reconditioning. I am normally rather sceptical about such undertakings, but in this case I consider that the chassis and coachwork of DE 1208 are in sufficiently good order to warrant some expenditure. I say this not without some sentimentality, for I feel it will be a sad day indeed when one can no longer see an old-type Bentley wearing its original appearance.

In conclusion, I find it very hard to say which of the two motor cars I enjoyed owning the most, so I give as my opinion that for reasonably short journeys on main roads the Bentley was the more fun, whereas for long-distance travelling over varied conditions of road surface the Rolls-Royce was undoubtedly the more suitable and pleasant car. The Bentley could be improved by softer springing and better engine ventilation, and the Rolls-Royce, if fitted with a rather higher rear axle ratio which it has ample power to pull in a flat country like India, and also a clutch stop, could give a better road performance.

C. A. H. (Major).

A Bol d'Or Development

THE pre-war 24-hour Bol d'Or race was an event of particular interest to the amateur enthusiast. In view of France's apparent intention to build numbers of ½-litre cars as soon as she is able, this race seems likely to be revived in the future. In this connection, a catalogue relating to La Voiturette Huascar, which Harold Biggs has sent us from his well-known collection of motoring data, is of more than passing interest.

The Huascar came into being about 1931 and was one of several such cars put on the market by firms who built cars for the Bol d'Or and subsequently decided there was money in them. A sports Huascar had performed well in the 1930 Bol d'Or, covering a greater distance (1,575 km. 860) than any other car in the sports or racing up to 750-c.c. categories and beating the old record by 217 km. In the 1930 G.P. des Routes Pavées a Huascar averaged over 40 m.p.h. for six hours, putting up the best performance in the sports and racing 750-c.c. classes and winning the Coupe Lilia and the Coupe de Régularité Marcel Plateau. The production version was interesting. It had a 2-cylinder monobloc, 73 by 75 mm. (625 c.c.) 2-stroke engine, which had special crosshead-type pistons which dispensed with crankcase compression. The crank throws were at 180°. Cooling was thermo-syphonic, ignition by coil, and a Solex carburetter fed into ports on the near side. Starting and lighting were by Paris-Rhone dynamotor. In unit with the engine was a 2-speed gearbox, final drive being by shaft to a Gleason spiral-bevel back axle. Suspension was by a transverse spring at the front and ¼-elliptics at the back. A scuttle tank held 18 litres of essence and four litres of oil. The wire wheels were reminiscent of those on a Senechal and carried 26-in. by 3.50-in. Dunlop tyres. There were cable-operated four-wheel brakes. The facia carried merely an ammeter in a central panel, and a 12-volt, 30 amp. hour battery was used. Approximately 47 m.p.h. was claimed for the 2-seater and coupé models, and 53 m.p.h. for the sports 2-seater, with a fuel consumption of some 50 m.p.g.

THE AXIS IN AFRICA

Some interesting data about four Continental Military Vehicles

THE subjects of this article are a Fiat, a Mercédès, a Stoewer and a Lancia. The first two are civilian chassis adapted for army use, the third is a genuine four-wheel drive military machine, and the fourth could well merit the description "sports" car, although designed as an open staff car for the Italian Army.

The Fiat was the open 4-seater model as supplied to the Italian forces, and had an ordinary 1,100-c.c. "Balilla" chassis, complete with i.f.s. and aluminium cylinder head. The chassis was standard except for a low back axle ratio, and was fitted with a very neat pressed-steel 4-door touring body; the earlier models had a fold-flat screen, although this feature was subsequently dropped, and the all-weather equipment was first class.

As issued, they had solid pressed-steel wheels carrying rather thin-section high-pressure tyres, but plenty of ordinary Fiat wheels were available, and these usually replaced the originals, since they took 6.00-in. by 16-in. Jeep tyres! The bodies on these cars were rather heavyish, and the maximum speed was about 60 m.p.h. Our first example was captured from Jerry before Alamein and lasted until the end of the campaign at Tunis, during which time it ran thousands of desert miles with practically no trouble. I had many pleasant drives in this car, and the i.f.s. was a delight after the normal suspension (?) of my work-a-day Jeep. The 4-speed gearbox was silent in use, and plenty of revs. were obtainable from the extremely smooth engine. I tried fitting a higher ratio crown wheel and pinion from a civilian job, but the weight and lack of streamline combated against any great increase in speed. So much for the Fiat.

After the German collapse at Alamein we moved forward, and at Mersa Matruh I "acquired" a Mercédès from a B.T.A. of a sister battalion. I was very surprised when he offered me the motor—B.T.A.s, as a rule, are not fairy godmothers to each other—but found, on examination, that a big-end had run and that the brake master cylinder was missing. Like us, his regiment was moving fairly quickly in a westerly direction, and he had no time to locate the spares to repair it; hence his generosity! However, I knew of the whereabouts of another derelict Mercédès only a few miles away, and so despatched a truck and a couple of fitters to get the engine and other necessary parts. This may seem a somewhat strange procedure when engaged in chasing a hurriedly retreating enemy, but any sort of extra transport was acceptable to an armoured regiment, who were always short of issued Jeeps; recces. had to be done and contact kept with the following echelon—as well as higher or attached formations—and the captured utility runabouts of Axis origin were put to good use. Anyway, the other Mercédès yielded an engine in good condition and a master cylinder which were fitted to my machine; the master cylinder at once, and the engine when a halt permitted. Despite big-end clatter the old engine served for about 200 miles before being changed. This was the 4-cylinder 1.6-litre engine—I think the capacity is correct—and was a very smooth and pleasant unit. The valves were side-by-side, and the rubber mounting was just about the most flexible thing ever! I.f.s. by two transverse leaf springs, one above the other, gave a comfortable ride and superb steering made the front end of this car a dream. The rear end was not so good; the system was the swinging half-shaft type controlled by a single coil spring and located by a radius-rod jointed to the chassis.

Whilst giving a comfortable ride, it had the disadvantage of the outside wheel tending to roll under the car if any fast cornering was attempted, and the effect on the steering was deplorable. Despite this, which was no handicap for the designed purpose of the car, the general "feel" of it was thoroughbred, and I enjoyed the many miles it gave me. The body was an ugly 3-seater with a *huge* boot—just the job for luggage—but was very light in construction and well built; once again the all-weather equipment was excellent. Near Tripoli I came upon the remains of the very pretty 2-seater civilian model which was not unlike the later Triumph "Dolomites," but, unfortunately, I had no time to swop bodies. This car eventually expired after a particularly bad run of about 20 miles in bottom gear through soft sand whilst trying to locate a detached squadron.

At Homs we had come into possession of a Stoewer, the original occupants of which had had large holes made in them by R.A.F. bullets, but luckily the car was undamaged. This was a pukka cross-country German military vehicle and all four wheels were independently sprung and driven; a gearbox with five forward speeds was fitted, the lowest of which was marked "G"; this, I believe, stood for *Gelande* (cross-country in Aryan), but our drivers always referred to it as "ghastly low"—and it was! No 9-h.p. "trials" special ever had a bottom gear like that. To my mind the i.f.s. and i.r.s. were too hard and did not give such a good ride as might have been expected. However, there was no trouble about the cornering in this car. All four wheels were sprung on the same system, two swinging arms, one on top of the other, and controlled by two coil springs. The drive was by short half-shafts, with a universal at each end. The steering was positive, but rather heavy. This car was also fitted with a three-seater body, complete with boot, but was shorter and not so ugly as the Mercédès. The C.O. used this car instead of a Jeep for a long time, until I provided him with a Lancia "Aprilia"—the ordinary (or, should I say, extra-ordinary?) civilian saloon, whereupon he passed the Stoewer on to me. Speeds were about 60 m.p.h. in top, 40 in third, and 5 m.p.h. in *gelande*!

The power unit was a 4-cylinder push-rod o.h.v. of about 1½-litre capacity. We took this car with us to Italy and it was still running well, after the fall of Rome, in the hands of another battalion to whom we had handed over our transport when leaving the country for a period of rest and overhaul.

The last car to come into my possession before I returned to a tank squadron was the Lancia, and it really was a lovely motor. I built this car up after the Axis surrender in Tunisia. I had been exploring an enemy dump and found the car stripped, but there seemed to be plenty of parts around, so I brought along a couple of fitters and we had a pleasant three days working on a real motor car once again. The body was an open 4-seater—of very pleasing lines—and formed the chassis of the car. The front "axle" was Lancia independent, but the rear axle was normal and mounted on semi-elliptic springs. The engine was the 4-cylinder unit as fitted to the 80-m.p.h. "Aprilia," and had an aluminium crank-case and cylinder block in which were inserted steel liners. The drive went through a grand 4-speed box, and by a divided propeller-shaft to the rear axle; the universal joints were of metal with rubber inserts, and the whole transmission was "tight" and smooth. The car was very low and had a most businesslike appearance, especially with the screen folded flat. The performance was good, about 70 m.p.h. in top—the low ratio again—and about 50 in third. The acceleration was terrific, and many a Jeep driver got the shock of his life when trying to compete. Steering was superb and the "feel" could not be bettered. The Lancia gearbox has to be used to be believed, and the change is controlled by a fairly short and extremely stiff lever. Cornering and general roadholding were beyond reproach, and after the Fiat, the Mercédès and, above all, the Lancia, I am completely sold on i.f.s. In passing, I may say that it broke my heart to see perfectly good Lancia and Fiat i.f.s. units lying around and myself not able to bring one home for use on a post-war special. Oh, well! possibly British manufacturers will go in for i.f.s. in a big way after the war is over, that is, if they have the chance, since the Chancellor of the Exchequer seems determined to do all he can to limit motoring. Personally, I think that the above-named official and the persons responsible for British tank design are just about on a par—they're both lousy! Fortunately, we don't have to fight "in" the tax—only against it.—R. S. (Capt.)

CARS I HAVE OWNED

This time by Capt. S. M. Townsend, who will be remembered as the Chairman of Townsend Bros. Ferries, Ltd., who were the first people to provide a special cross-Channel steamship service for motorists, at low rates. He likes the continentals.—Ed.

IN all I have owned 25 cars and handled and looked after two owned by my father. Of these only two were "bad" cars, in the sense that they had incurable defects, and one of these "bad" cars I liked more than any. Most of them I bought secondhand and many were foreign. This for the reason that I like high-class cars, but have not been able to afford them new, and because the best secondhand bargains are to be found among foreign cars, to which I was accustomed by my early experience.

I learnt to drive in 1904 on a Darracq 8-h.p. single-cylinder with a tonneau body. The gear-change was controlled by a lever under the steering wheel (the latest fashion!) This was at Brighton. My teacher made me drive through the traffic on Brighton front during my second lesson. This car was driven on the gears. Second speed was required for slight rises, such as the one past the old fish market at Brighton.

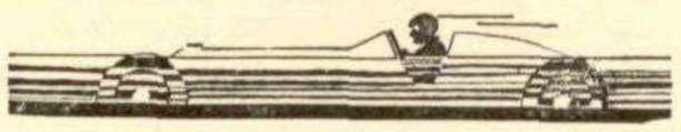
My father then bought a Panhard-Levassor 8/11-h.p. 3-cylinder chassis, which he had fitted with a "Roi des Belges" body by Thorn, with a detachable canopy. He was advised by a friend who was one of the leaders of the motor industry, that there was no British car fit to buy. This was in 1905, and I think it was wrong. The Panhard, although famous, was out of date, with chain drive and automatic inlet valves, etc., and friction-driven water pump. This model was miserably under-powered. Maximum speed was about 25 m.p.h., and any hill with a gradient of 1 in 15 or so called for 1st speed (4 m.p.h.) We were often overtaken by cyclists and trams!

My mother and I took this car for a tour in Spain in early 1906. The car was shipped to Malaga and driven over the Sierra Nevada to Granada and thence to Cordova and Sevilla. Local information said (I believe erroneously) that there was no practicable road to Madrid, so the car was sent by train. Attempts to get north from there were foiled by snow on the Sierra de Guadarrama, and again the car went by train to Bilbao. We drove it from there out of Spain.

In those days it was the correct thing to hold the clutch out downhill. This I remember was very tiring down mountain passes on this trip. It was a piano-type pedal with a strong spring. When one wished to change up from 1st when a hill eased, it was often impossible to do so because the speed fell off too much before the clutch shaft stopped spinning sufficiently to engage the gear. This was cured by fitting a crude form of clutch stop, which was most effective.

We carried a real French chauffeur-mechanic on this trip, fortunately. At a remote village in Andalusia one of the radius rods collapsed. He dismounted it, took it to the local blacksmith's, welded and refitted it.

This car was supplemented after three years by a 30-h.p. Thornycroft, a very massive job of up-to-date design and a real treat after the Panhard. Unfortunately, I specified a high gear ratio, which spoilt the top gear performance. The Thornycroft was in use up to the 1914 war, and was most reliable. It did at least one Continental tour and was never much trouble. One great feature was accessibility, of a degree for which



one now sighs in vain. One could remove a valve in two minutes or less.

This car had 880 mm. by 120 mm. tyres. We lived in Sussex, where the roads were flint, and ordinary canvas tyres, Dunlop or Michelin, only lasted 2,000 miles. Palmer cord lasted 5,000 miles, but had to be run at a pressure of 90 lb., and cost £60 the set of four. I consider that the spread of motoring is due almost entirely to the modern road surfaces and improved tyres. One car I now own, a Lincoln "Zephyr," has done 47,000 miles on the original tyres, spare unused.

In 1910 a friend bought a racing car which bore on each wheel cap a note of interrogation. He found himself unable to control it, and first lent, and then gave, it to me. It was one of three cars built for the Darracq Co. to their design by Messrs. G. & J. Weir, of Glasgow, in 1904. They were intended as British entrants for the Gordon-Bennett race, and are reputedly the most expensive cars ever built. They failed in the eliminating trials. The engines were 4-cylinder 160 mm. bore by 140 mm. stroke. After various adventures with my member of this family I scrapped the engine and had a 42-h.p. Daimler fitted in its place. At that time Daimlers had taken to the Knight engine and were selling off the poppet valve motors they had in stock. This Daimler engine coped easily with the top-speed ratio of 1–1.25 and provided me with a remarkable car. The engine was only ticking over at 30 m.p.h., and yet it was possible to drive from Brighton to Reigate in top and climb Reigate Hill at over 50 m.p.h. in second. The brakes were rather sketchy, but that didn't worry me. The quadrant gear-change had no notches, and one had to feel for the gears, but that didn't matter either. After three years I sold this unique car to a friend, Capt. F. O. Morris, who won three races at Brooklands with it in 1914, lapping at 97 m.p.h. The weight of the car was 2,251 lb. with the original engine.

My next was a very different affair, a 12-h.p. Rover given to me as a wedding present. It had a very nice coupé body by Lawton Goodman. I took it straight off on a tour round France, and neither then nor afterwards had any trouble with it. In 1916 I sold it because I took a poor view of my chances of survival, and although I got more for it than it cost, I afterwards regretted this sale.

After the war cars were scarce, but I found a secondhand A.C. Apart from a horrible clutch, which was either in or out, this was a good little 'bus, but I soon exchanged it for a very good-looking new A.C., which I liked very well until, in 1920, I bought a Fiat 10-h.p. Model 501, which was a real gem. I had it fitted with an Avro mass-produced saloon, which had nothing to recommend it but its lightness. This car cost me over £800, and I kept it for 10 years. It was as good as new when I parted with it. The only defects were harsh springing and an annoying whine from the timing gears.

Shortly before I got the Fiat I wanted to visit the battlefields and did not think the A.C. stout enough, so bought, secondhand, my second 12-h.p. Rover. With this I did the battlefield tour, breaking only one spring, and then, having had it painted, sold it at a profit. That was a red-letter day. My next was a new 18-h.p. Adler. This was one of a batch of chassis I imported from Germany as a speculation which failed, owing, I believe, to hostility to things German. It was an excellent piece of work, typically German for thoroughness, every nut split-pinned and very solid throughout. These cars were what the German Staff had used. I had it fitted with an open 4-seater, with glass windows and metal-framed hood.

Attending an auction one day at Aldridges I was taken with an imposing-looking Delahaye cabriolet and bought it for £250, I think. A good car in every other way, it suffered from an incurable occasional slipping clutch, an intolerable vice. I kept it, however, for about a year and then exchanged it for a secondhand 40-h.p. Fiat, Model 519, of 1925 vintage. This was a Weymann saloon and very large. A fine car with the cleanest design of engine I have seen. Great care was needed with the brakes, which were hydraulic servo, immensely powerful and very sudden. They saved me from a bad smash, though, at an unguarded, blind level-crossing in Switzerland, where I was abruptly confronted with a train.

In 1931 I found a secondhand 16/45-h.p. 6-cylinder 1929 Panhard-Levassor with a close-coupled saloon, which I bought for £150, and I think I got more pleasure out of driving this than any car I have owned. This was partly due to the artistic design and good finish of all the details (even the radiator cap was a joy to sit behind and the dashboard fittings were admirable), partly also to the perfection of the controls. The gearbox was ideal, silent changes requiring no effort, and the steering and roadholding were excellent. The engine, a sleeve valve, unfortunately had a defect in the design of the lubrication system and sustained speeds of over 40 m.p.h. resulted in seized sleeves and expensive repairs, so that eventually, to my great regret, we had to part. Not, however, before this car also had done a tour in Switzerland.

It was followed by a 1930 18-h.p. Panhard, in which the lubrication trouble had been remedied. A very fine car indeed, notable for a most elaborate instrument panel which had pilot lights for all the lamps, to show if they were burning. Both these Panhards had twin carburetters fitted with two sizes of choke tube, selective from the dash. The large

chokes were intended as economisers, but were also useful at high altitudes. These Panhard sleeve-valve engines were designed for power, unlike the Daimler, and both these cars would do about 70 m.p.h.

In the meantime I had bought, as chauffeur-driven cars, first an 8-h.p. Voisin coupé de ville, and then an 18-h.p. 1928 Delage, also a coupé de ville. Both these were secondhand and both very handsome. The Voisin, a sleeve-valve job, was underpowered. The Delage was the only car I have ever had examined by an expert before purchase. It was passed by the A.A. engineer, but at once I had to have the engine rebored, the clutch relined, and part of the back axle assembly repaired. However, the car cost only £150 and the repairs about £50, quite cheap for a £1,000 car. I kept it in use myself until 1938, when I had a 'bus body put on it, and handed it over to Townsend Bros. Ferries, Ltd., for use at Dover for conveying officials from the town to the Eastern Arm. On the outbreak of war it was lent to a hospital, and I believe is still going strong.

Once when on holiday at Biarritz in 1923 I took advantage of a slump in the franc and bought a new Citroen 7-h.p. for £100, selling it to a friend when I left. This was a useful little car but a bit rough.

Also on two occasions when visiting the Riviera I bought a secondhand car to drive home in. One was a 12-h.p. Berliet box-shaped saloon of great comfort and well sprung. I think this was in 1923. These cars had a bad reputation in France, and garage hands everywhere wagged their heads on seeing it, and remarked "*Mauvais marchandise.*" However, it brought us safely home, although passing through Lyon, where it was made, I had something done to it at the works. This resulted in a 36-hours stay in that centre of good cooking and a considerable strain on the digestion.

The other was a 2-litre Bugatti which I bought from the secretary of the Bains de Mer at Monte Carlo in 1924. I cannot remember what I paid for it, but feel certain not more than £300. It was fairly new, and I felt sure I could sell it at a profit in England, but no such luck. I did not keep it very long because the lower gears were so noisy and were in constant use in town. This was quite the safest car I have ever handled, and my only trouble was in finding suitable plugs (eventually a brand of A.C.s did the trick.)

The body on this car was remarkable. A 2-seater with dickey, it had a superstructure hinged behind the front seats and spring-tensioned. On releasing a catch on the dashboard the superstructure lifted up and back, taking the hood and two side windows with it, so that one could stand up and step out. There were no doors. The hood could be folded back separately. Very practical, and I am surprised I have seen no more of these bodies. English motor tourists who think the French police indifferent to motorists should try driving a Bugatti with French numbers in France. It is like a red rag to a bull. They start waving you down at sight, even if you are crawling. In other ways, too, it is an experience. Everyone wants to race you, even lorry drivers, I suppose in order to boast of having kept ahead of a Bugatti for half a kilometre or a kilometre, and generally one proceeds in a kind of aura of glory!

Other cars I had for a short time were an 8-h.p. Morris and a 14-h.p. Hillman, the latter a coupé, both secondhand. I liked them both, the Morris having very nice controls and roadholding for a little car.

About 1931 I bought my second 10-h.p. Fiat drophead coupé, very much used. I neglected my usual precaution of immediately changing the engine oil and ran a big-end on my first journey. That is the only time I have had this occur. The oil was of the consistency of paraffin. Afterwards this car served me well for the short time I had it.

I think there is something especially attractive about a coupé (drophead, of course).

In addition to the two Panhards already mentioned, I had one more, but it was in bad condition. At this time my wife demanded a softly-sprung car, so I traded this last Panhard for a new V8 Ford (1935), American-built, which I replaced by a new 1936, English-built, after a year, because someone told me not to keep a Ford longer than that. Of course this is nonsense. The Ford V8 needs no praise from me. Both cars served me very well, but the English one was not so well sprung as the American. The first needed back-axle repairs at 10,000 miles, and so did the Lincoln "Zephyr," which I bought in 1938 (shop-soiled 1937 model). The back axle trouble did not recur. All these Ford products went for tours on the Continent, and provided very comfortable fast travel. The "Zephyr" cruises at 65, and will climb most main road hills at 60. With all my experience I cannot tell the speed without looking at the speedometer.

In 1939 I hired a 10-h.p. Model 508C Fiat on the Riviera and took such a fancy to it that I bought one on my return, a drophead coupé, not new, but nearly so. The charm of this car is exemplified by the fact that my son, who had only driven the Fords and the Lincoln, said after driving the Fiat that he never wanted to drive the Lincoln again. I laid the Lincoln up when the war started, and as my son had taken possession of the Fiat, I bought a 6-h.p. Fiat, the "clockwork mouse," for my own use. Secondhand, nearly new. I get great fun out of this. Nice controls, light steering, good lock and a very clever body (the 4-seater). The springing made even long journeys (when they were possible) comfortable. The car is lively enough with one up, but more than two make it sluggish.

I find that I have made one omission, and that closes my list. A 1934 20-h.p. Mercédès, with the smoothest engine in my experience, but bought rather too secondhand. I had the overdrive giving two sets of ratios. The lower too low and the higher too noisy, owing, no doubt, to wear.

Someone once said, "There are no bad cars, only bad drivers." I think this is almost true.

In Miniature

WE have discoursed at some length recently about matters appertaining to model cars. What follows may well be regarded by many readers as inadmissible, for it refers not to models, but to mere toys. However, those toy cars manufactured before the war by Meccano, Ltd. ("Dinky" toys) and by Line Bros., Ltd. ("Minic" toys) will seem of some moment to people who cannot resist any aspect of motoring in miniature, and to those fanatical enthusiasts who will see in them an amusing form of decoration about their homes and workshops. So it is worth recalling that up to the outbreak of war Meccano, Ltd., actually listed 28 tiny replicas of actual cars, besides various public transport and commercial vehicles and other cars to no known prototype. Of these, eight were of racing type, comprising Gardner's 200-m.p.h. M.G., M.G. Midget, Mercédès-Benz, Auto-Union, Eyston's "Thunderbolt" and "Speed of the Wind," R-type M.G. and the closed-cockpit Hotchkiss. Prices ranged from 4d. to 10d., with detachable rubber tyres. "Speed of the Wind" wasn't very well proportioned, and the Mercédès was a bit stumpy, but the others were quite realistic. The standard models covered Peugeot, Fiat "500," Austin Seven, Chrysler "Airflow," Rolls-Royce, Daimler, Vauxhall 25, Armstrong-Siddeley, Bentley, Humber "Vogue," Rover airline saloon, 2-seater and 4-seater British Salmsons, T-type M.G., Packard "Super Eight," Oldsmobile Six, Lincoln "Zephyr," Buick "Viceroy," Chrysler "Royal" and Studebaker "State Commander." As with the racing cars, realism varied somewhat between makes, but generally was remarkably good, particularly in the case of the American cars. Prices ranged from 3d. to 10d., and there were divers items of equipment to the same scale. Lines Bros.' cars were to a rather bigger scale (1/42 full size) and "real life" examples were Ford Eight, 4½-litre Bentley, Rolls-Royce, Daimler and Vauxhall, in varying body styles. These had clockwork motors and some had electric lighting, although the average length was only about 5 in. Both firms hope soon to revive these toys and to add to the range.

While on the subject of commercially-produced "near-models"—as distinct from the finished products of Dagra and March Models, Ltd.—we recall those excellent P2 Alfa-Romeo racing cars; the 7.5 and 11.4 Citroens and a constructional set of the Citroen Twelve by Citroen Cars; tin models of the later Model T Fords and larger ones of "14/40" Delage saloon, 13.9 Renault saloon, and Hispano-Suiza tourer; the clockwork "Golden Arrow"; the badly-proportioned but brisk Schko Mercédès and, of course, best of all, the small "near-models," Scale Models' replicas of E.R.A., Maserati and Alta. There were various small reproductions of different land-speed record cars. Can anyone add to this list?

A Special 2-litre Aston-Martin

RECENTLY we had an opportunity of inspecting a rather unusual 2-litre Aston-Martin which has distinct possibilities as a post-war road car of very high performance. At present this car is among the stock of Newton's, of Huddersfield, who are prepared to consider offers for it in the region of £900.

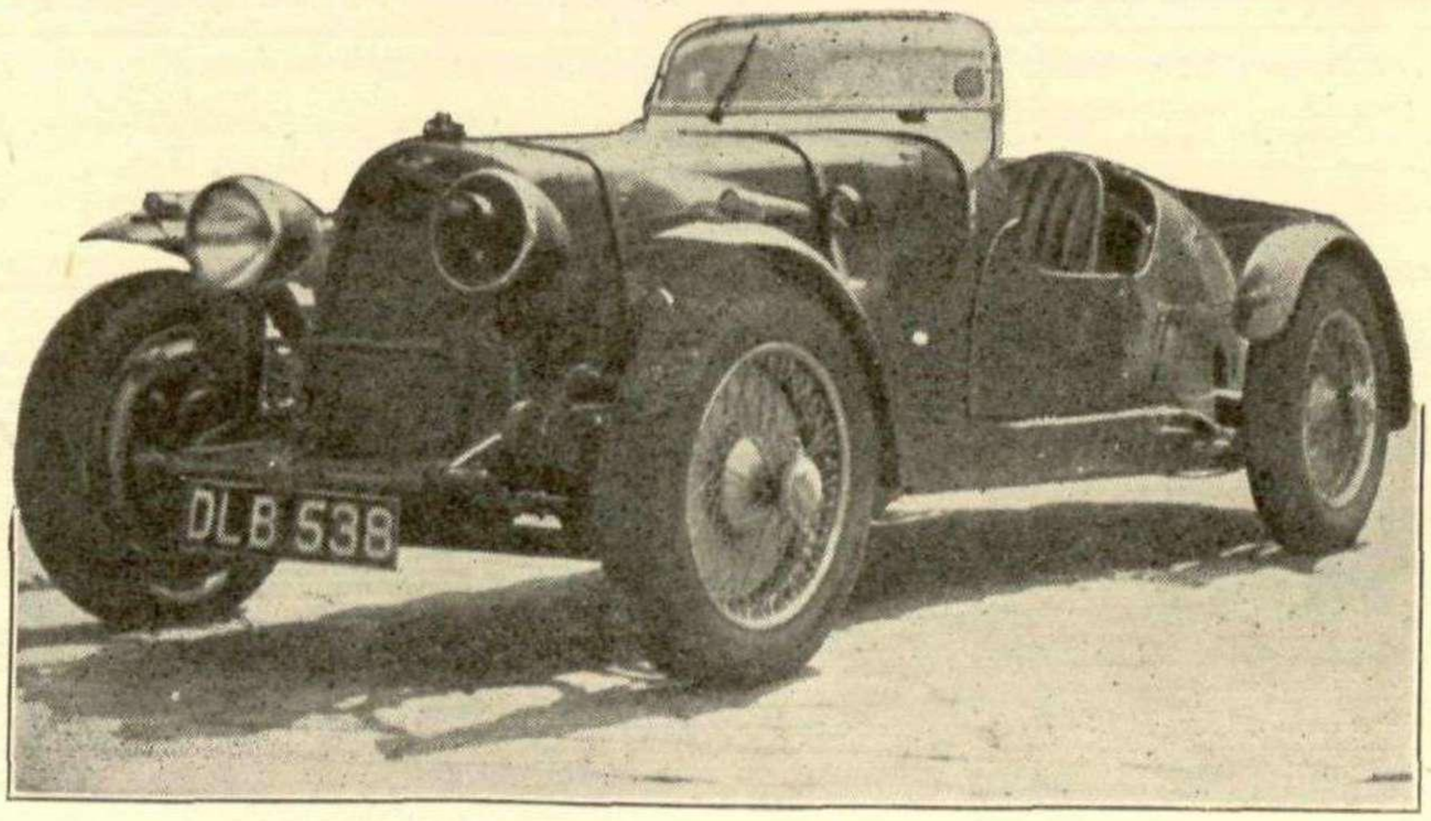
It started life as a sports 2/4-seater, 2-litre "Speed" model in December, 1936, and after covering some 12,000 miles, it was purchased by T. A. S. O. Mathieson and prepared for sports-car racing, being used by him for this purpose on the Continent during the 1938 season, without the success enjoyed by a similar car raced by Horsfall. Since then the car, Reg. No. DLB 538, engine and chassis No. L6/713/U, has been owned by a Lancashire enthusiast, who fitted four S.U. carburetters in place of the two used originally. The car follows normal 2-litre practice, the engine having dry-sump lubrication, and being mounted on rubber. The four S.U.s each have their own inlet pipe on the near side of the head, and there is no balance pipe. The float chambers are forward of the mixing chambers, and the front one is set inwards to clear the bonnet side which, even so, requires a considerable power-bulge at this point to accommodate this ambitious carburation layout. Two S.U. electric pumps feed *via* flexible pipes, one for each pair of carburetters. The chokes are controlled by a lever in the cockpit protruding before the passenger. On the near side also, the water-pump and dynamo are driven in tandem and have an N.V.4 Scintilla "Vertex" magneto above them.

The battery is very accessible on a shelf beneath the bonnet. On the off side four separate exhaust pipes merge into two flexible pipes, that for cylinders 1 and 4 running above that for cylinders 2 and 3, into a Brooklands expansion box, from which a flexible tail pipe runs to a small fan-tail. A 2-branch breather pipe on the valve cover leads into the full-length undertray, and the rev.-counter drive is taken from the end of the dynamo.

When Mathieson took over the car he replaced the original body with an "Ulster" body off a 1½-litre Aston-Martin. This has a door on each side and the usual tail, housing a large fuel tank with twin fillers, and with a detachable rear portion housing the spare wheel. The jack and tools live beneath the tank. The light wings are provided with tubular stays in addition to their normal agricultural attachments, these stays running to the radiator cowl at the front and across the tail at the rear. The low, single-pane screen folds flat when a central wing-nut is released. The facia carries a Bosch electrical panel; small speedometer and rev.-counter, reading to 125 m.p.h. and 6,500 r.p.m., respectively; oil gauge reading to 150 lb./sq. in.; and oil and water thermometers calibrated in ° C., all instruments being of Jaeger manufacture. There are separate switches for main and reserve fuel pumps, and a long lever in the steering wheel centre looks after ignition advance and retard. The accelerator pedal is of organ-type and the brake and clutch pedals are quite small, all being rather close together on account of the propeller-shaft tunnel. A foot starter-switch is used and the central hand-brake lever is of racing type, with lift-up ratchet button. Scintilla headlamps are fitted, one masked. Finished in green, this Aston-Martin looks distinctly businesslike, and sounds (and smells) more so. It has very good Dunlop "Racing" tyres, 5.00-in. by 18-in. at the front, and 5.25-in. by 18-in. at the back.

We had hoped to put the car through a brief road test, but although it did some spectacular work along a twisting bit of road in the hands of John Cragg, Newton's sales manager, the plugs soon displayed a dislike of "Pool" fuel. The engine would not take any ignition advance in top gear and was obviously not happy on "cooking spirit." Before the plugs failed the car showed itself to possess very fine acceleration, 4,000 r.p.m. coming up at once on a very small throttle opening. The gear-change, worked by a short lever in a diminutive central gate with lift-up reverse stop, functioned nicely. The hydraulic brakes, which have immense drums and armoured piping, were not particularly progressive, but possessed immense stopping power for a very small pedal pressure and deflection. The car should be capable of finishing high up in a race by reason of its braking power alone. The steering was light, if rather low geared, and the suspension reasonably hard, although in need of more pressure on the Hartfords. The exhaust note was the "real thing," but not such as to invite unwelcome attention. The two bucket seats offered excellent support, and the driver's came right up to the wheel. This car should stand a chance of making good showing in post-war sports-car racing, if given proper quick-action filler caps and more plausible-looking wing stays, etc. The front axle was the type with substantial tubular torque arms, to resist the effect of the immensely powerful braking. There is an "Autoclean" oil filter, and the car has been run on "R." 1,000 r.p.m. on 2nd, 3rd and top gear, respectively, equalled approximately 10½, 15 and 20 m.p.h. The total mileage is about 19,000.

Other interesting cars in Newtons, of Huddersfield, immense stock include a very fine Type 500K Mercédès-Benz cabriolet, a "Phantom III" Rolls-Royce saloon, a 1938 25/30-h.p. Rolls-Royce saloon, a 1935 32.5-h.p. Packard "Super 8" (with cylinder block separate from the crankcase), a Morgan "4/4" coupé, various T-type M.G.s, several saloon S.S. and 6-cylinder Alvis, a 2½-litre S.S. "Jaguar" 2-seater, two 4½-litre Lagonda saloons, a 3-litre Lagonda saloon, and a 3½-litre Bentley with Jensen open 4-seater bodywork.



The 4-carburetter 2-litre Aston-Martin, raced by Mathieson and sampled recently by MOTOR SPORT.

THAT IDEAL STABLE

Being Mostly a Flight of Fancy

THE return of the basic petrol ration provides an excuse for speculation as to what would constitute the ideal stable, were finance no impediment. Let us, then, set out the various purposes to which the enthusiast will put his or her cars. We can make up a simple table as follows :—

(*a*) General domestic purposes.
(*b*) Fast road motoring.
(*c*) Sprint competition or amateur racing.
(*d*) Trials.
(*e*) Veteran motoring.
(*f*) Hacking.

Although this is really an exercise in forgetting for a while the sordid limits of individual possibility, the mind, it may be, can barely comprehend personal ownership of six cars. It is, however, my duty to add that the categories (*a*) to (*f*) seem to me hardly all embracing. I would further sub-divide, as follows : (*b*) into vintage and modern manner of going ; (*c*) quite easily, into Shelsley " special " and something more M.G.-ish for the actual racing, and, of course, (*e*) into veteran and Edwardian eras, because post-war Edwardian contests are likely to embrace mileages too great to be undertaken happily in pre-1905 automobiles, yet only in such cars can you go down to Brighton each November. Let us now set down some actual cars against our self-established classes and see how the thing looks :—

(*a*) Lancia " Aprilia."
(*b*) " 30/98 " Vauxhall, 328 B.M.W.
(*c*) G.N. " Special," M.G. Midget or Magnette.
(*d*) Blown P.B. M.G. or Allard Special.
(*e*) Something pre-'05 in going order, and a 1912 10/12-h.p. Edwardian, sound in limb and tyre.
(*f*) Morris Eight, late-type Austin Seven, D.K.W., etc.

There is, to my way of thinking, quite a nice stable. All we need now is our own petrol pump, a row of neat lock-ups in a large private yard and a couple or more of skilled, full-time mechanics, and the period up to the next war should be quite well worth living.

Even our really affluent readers may be a bit jaundiced by now, and they will doubtless be endeavouring to tone the thing down a bit. For example, they may argue that the B.M.W. will suit quite nicely for trials as well as for progressing rapidly from A to B, and that they can very well use this car also, or other members of the family can, for hacking, thereby cutting out the need for the modest eight-horse. In economic vein they may well argue that if they race at all seriously they will not have time for competitions for antiques, and that the M.G. class of racing car can be used for sprints, obviating building and coaxing into rapid mobility a sprint " special." We now find we have narrowed the ideal stable down to a Lancia " Aprilia," for economic general duties at no mean hustle ; a husky " 30/98 " Vauxhall for fun motoring in fresh air and Harris tweeds ; a 328 B.M.W. with which to motor effectively along main roads when a " 30/98 " seems a bit too much, to try one's skill in trials and to go to the post in ; and some sort of effective small racing cars for actively following the Sport at Donington, Shelsley Walsh, Prescott, and such places. That, then, is rather a nice ideal stable, don't you think ? We will leave it with the proviso that in post-war Britain probably no one will be able to afford anything approaching it and that, if they can, it probably won't materialise, for the simple reason that people usually buy the cars they like and decide how to employ the resultant stable afterwards, instead of, logically, first setting down their requirements and then buying cars to suit them.

It is much more to the point, having relieved ourselves of that pleasant flight of fancy, to consider what sort of cars you and I are going to own and motor in post-war. The most important thing, to my mind, is to first concentrate on one car and get it into good trim, so that it starts easily, is adequately tyred, has efficient electrics and is dependable generally. That is the way to be able to motor anywhere (within the limits of rationing) at any time to any place and, with the cost of motoring as it is, that strikes me as a very important requirement, be the vehicle merely a humble Austin Seven saloon. The enthusiast will do some simple arithmetic to see what h.p. car he can afford, the R.A.C. rating having a direct bearing on expenses under the headings of tax, insurance, and fuel consumption over a given mileage, and will buy the most suitable car he can find. Maybe a " Nippy " or " Ulster " Austin Seven, an open Riley Nine, one of the better M.G.s, or a vintage " 12/50 " Alvis or 3-litre Bentley. His next job should surely be to get this car into really sound order, and even if business or domestic requirements call for a closed car, the same thing applies.

After this task has been completed there is time to consider the second or additional strings. As taxation makes no concessions to people desiring to run more than one car, the initial problem is whether to acquire a second car to use at the same time as the first (*i.e.*, an open car if the first purchase was a saloon, or *vice versa*), whether to buy something of exciting demeanour which will only be in use for part-yearly periods (such as a fast road car used during the summer only and worked on all winter, or a trials car taxed in the winter alone) or something like a veteran or a " special " that is quite interesting, anyway, and can be towed to meetings or taxed for a mere month at a time.

Very few enthusiasts, least of all those unfortunate or misguided folk who live in towns, have facilities for decently keeping more than two cars. So it seems very necessary to decide, before doing anything rash, whether you want to follow any particular branch of the Sport or whether you prefer to own two cars which will always be ready to perform ordinary duties efficiently, without going to extremes in any one direction. To illustrate what I mean, consider the owner who has a saloon for business purposes and seeks another car. He will doubtless buy a 2-seater or a 4-seater, probably of the same make. If he decides to participate in trials he will find that low gear-ratios, altered weight distribution, and " unfair wear and tear " will reduce the usefulness of this second car for fast road work. He would, in short, have done better to have sacrificed *ordinary* motoring in an open car and have concentrated on a sound saloon and a good trials car. If he decides to take part in sprint events or club races at Donington, then in the same way he will never feel so happy in the open car under ordinary conditions, because " hotting up " will invariably have altered its character, road use will " take the edge off " from the competition aspect, equipment essential on the track may be an embarrassment on the road, and so on. Yet again, if our enthusiast decides to motor in an Edwardian, restore a veteran or other unusual car, or rebuild an ex-racing car, etc., he will find time and money being devoted to this end detracting from his original aim, which was to have two cars in his stable both in good nick and always ready for the road. Of course, veterans apart, an Allard gives you everything ; but I am thinking of an expenditure of £200–£300 or less.

The moral of this somewhat confused thinking is simply—enjoy your post-war motoring by all means, but buy your cars to a pre-determined plan, rather than haphazardly as bargains are found—especially if you are a " two-car " man. I have emphasised before, incidentally, the advantages of owning two cars of the same make—not necessarily of the same *type*—when economy is the keynote. This applies even more now that tyres and spares are in short supply, necessitating waiting a long time for replacements. However you plan your motoring I wish you tens of thousands of enjoyable miles—and I hope to hear to what plan you are working.—W.B.

COPIES of *MOTOR SPORT* for MARCH and APRIL, 1945

We have had hundreds of requests from the Forces for copies of the above issues and would welcome the same from any of our Readers who have one to spare if they are in reasonable condition. Send them to us at *Motor Sport*, 15/17, City Rd., London, E.C.1

RUMBLINGS

Austerity Sports Car

Our remarks last month about the need for an inexpensive, reliable small sports car have borne a little fruit. F. J. Hambling has a rather intriguing design for a people's car, which is expected to perform well enough with a normal touring engine, such as an Austin, Morris or Ford Eight or Ten, to put it in the sports car category. This is something quite separate from Hambling's backbone-chassis, twin-crankshaft job which was described in the November, 1944, MOTOR SPORT. His utility design calls for a chassis having two tubes united by a simple front end which provides Lancia-style i.f.s. The engine is mounted transversely, driving a separate gearbox by a modern, oil-fed, enclosed chain drive. This enables side-valve tappets to be readily accessible from the front and obviates the effect of transverse torque reaction. The differential is mounted on the frame and chain-driven from the gearbox, the front-drive half-shafts being universally-jointed. Hambling provides for rack-and-pinion steering operating directly on the track rod, and for Girling brakes, the front brake drums being inside the chassis members. The fuel tank is welded into the scuttle to increase rigidity, feed being by combined gravity and pump action. Dunlop pierced disc wheels carry 5.00 in. by 16-in. tyres, wheelbase 8 ft., track 4 ft. 4 in., ground clearance 8 in. Due to its light weight and absence of transmission friction a good performance is expected. The appearance is quite futuristic and the cost is expected to be moderate, as no special jigs are needed. We understand that a Leeds concern is building a prototype van, and that the second car will have open sports bodywork and will use a Ford Ten engine unit, giving ratios of 4.5, 8.17 and 15.8 to 1.

On the same subject the following letter has been received from John Haining, explaining why he abandoned his project for offering re-built "12/50" Alvis cars at about £150 :—

With reference to the notes on a proposed "Utility" sports car, I would like to add the following : I had intended to produce, in limited numbers, a re-bodied edition of the famous "12/50" Alvis, for sale to genuine enthusiasts desiring a real, if somewhat stark, genuine sports car of the old school. The intention was to thoroughly overhaul the chassis and engine, and fit a light 2/3-seater open body, fitted with folding screen, aluminium dash, rev.-counter, and the minimum of modern "gin palace" fittings such as grab-handles, cigarette lighters and suchlike frippery.

To this end a large quantity of spares and components for these cars have been purchased, at, sometimes, exorbitant prices, from breakers and similar gentry, and many parts have been bought from private owners. Unhappily, the cost of obtaining chassis, and the scarcity thereof (in any reasonable state of preservation), has proved the proposition to be impossible from a commercial point of view. The cost of building the cars, coupled with the factors named above, made it necessary to retail them at (in my opinion) far too high a price.

Sports cars—real vintage sports cars—are far too fine a hobby to besmirch with the sordid air of commerce (again my own humble opinion), and I have no wish to be classed with those gallant gentlemen whose sole interest—so miraculously brought into full bloom by the rising prices of quality motor cars—extends only to the amount of filthy lucre to be gained from the sale thereof.

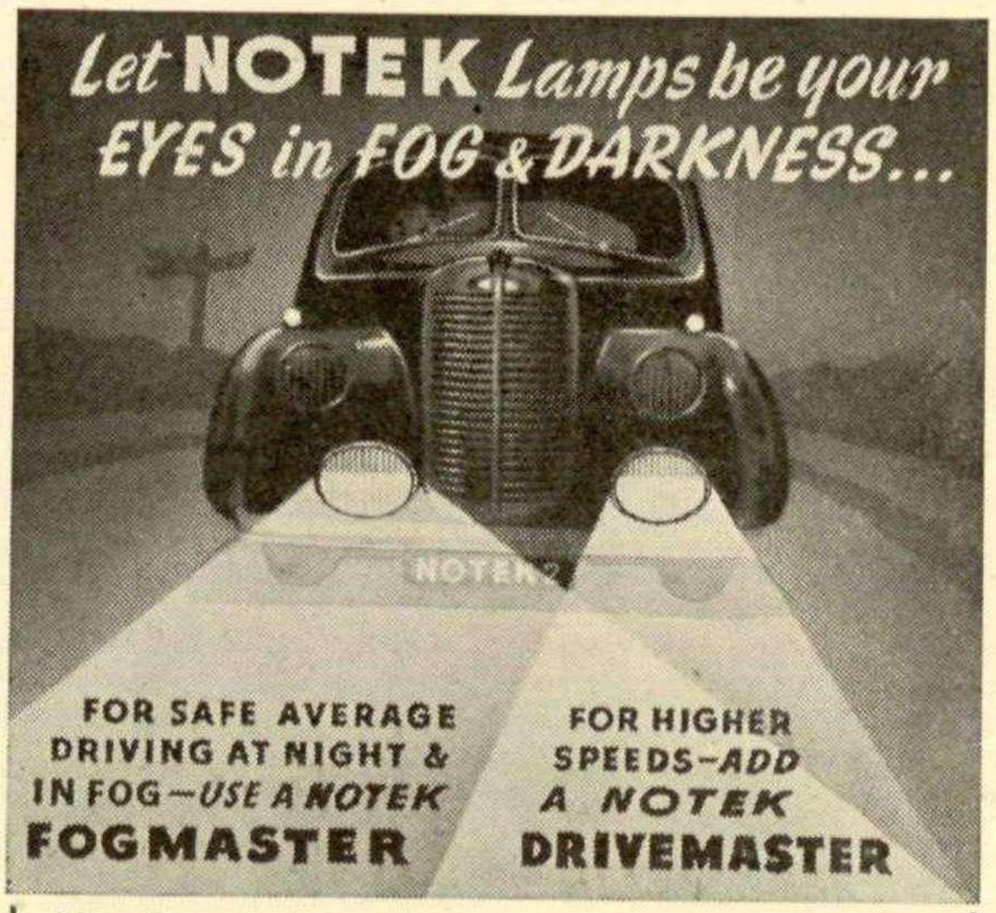
Hence my refusal to build and sell, to a limited market, a motor car which I know would not be truly worth the inflation price I should be forced to ask for it. My own "12/50" Alvises both occupy a place in my affections far above the price of rubies ; the prototype car built under my scheme has been sold at a fair and reasonable price to another enthusiast, and I feel that I can do greater service to the cause by keeping my scheme to the limits of an Alvis spares bureau, and leaving the winning of bags of gold to those with a longer pocket—I like to be able to keep at least on nodding terms with my most long-suffering bank manager !

We have not heard what Peter Monkhouse, of Monaco, Ltd., thinks of the possibilities of an austerity sports car, but his firm has announced a more ambitious project, *i.e.*, manufacture in limited quantities of the unblown M.G. T.B. Midget, which was prepared for the 1939 T.T. This car, bored out to over 1,400 c.c., and weighing 13½ cwt., exceeded 90 m.p.h. in road trim, and we look forward to making its further acquaintance in the near future.

* * *

Cockfosters

Perhaps the best news, apart from the restoration of "basic," is that Rivers-Fletcher is giving us another enthusiasts' rally, as announced in Club News. The date is Saturday, July 14th, and the venue is the Bevan Park Estate, Cockfosters, New Barnet, Herts. Things get going at 2.30 p.m. Admission is by ticket,



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price 10s. per person, available from Rivers-Fletcher, 4, Eversleigh Road, New Barnet—they are, by the way, restricted in number. A limited supply of teas can be had on the day of the event, at 2s. 6d. per head. Earl Howe will "open the course" with his Type 57 Bugatti, and amongst the cars due for demonstration (at sane speeds) are E.R.A., M.G., Bugatti, Alfa-Romeo, Mercédès-Benz, Bolster's "Bloody Mary," old-school Bentley, Lord Brabazon's streamline Fiat, Heal's Fiat and Sunbeam, the Aston-Martin "Atom," etc. The public car park should also be well worth inspecting. Members of the N.L.E.C.C. are marshalling, and the W.V.S., etc., are assisting. Proceeds go to the Victoria Hospital, Barnet. The thanks of all enthusiasts are due to Rivers-Fletcher and his committee—Roberts, Symmons, Bance, and Penny Fletcher—and we hope to see a big attendance. The "course" measures three-fifths of a mile and lies near Mount Pleasant, not far from Cockfosters Underground Station on the Piccadilly Line.

Incidentally, things really are coming along. The 750 Club and E.C.C. of G.B. were due to hold car meetings on July 1st near London and Manchester, respectively, and the N.L.E.C.C. had a tea run on June 23rd, and meet again at Barnet on July 27th to discuss members' experiences of well-known cars. This latter club had a most successful talk by Douglas Tubbs on June 15th and, earlier, Kenneth Neve's discussion on one-make racing for the impecunious was equally well received by the E.C.C. of G.B.

Alas, hopes of reviving the T.T. race in Ulster have gone by the board, because the insurance companies want excessive third-party premiums, although the R.A.C. has done its best over the matter.

* * *

Exciting

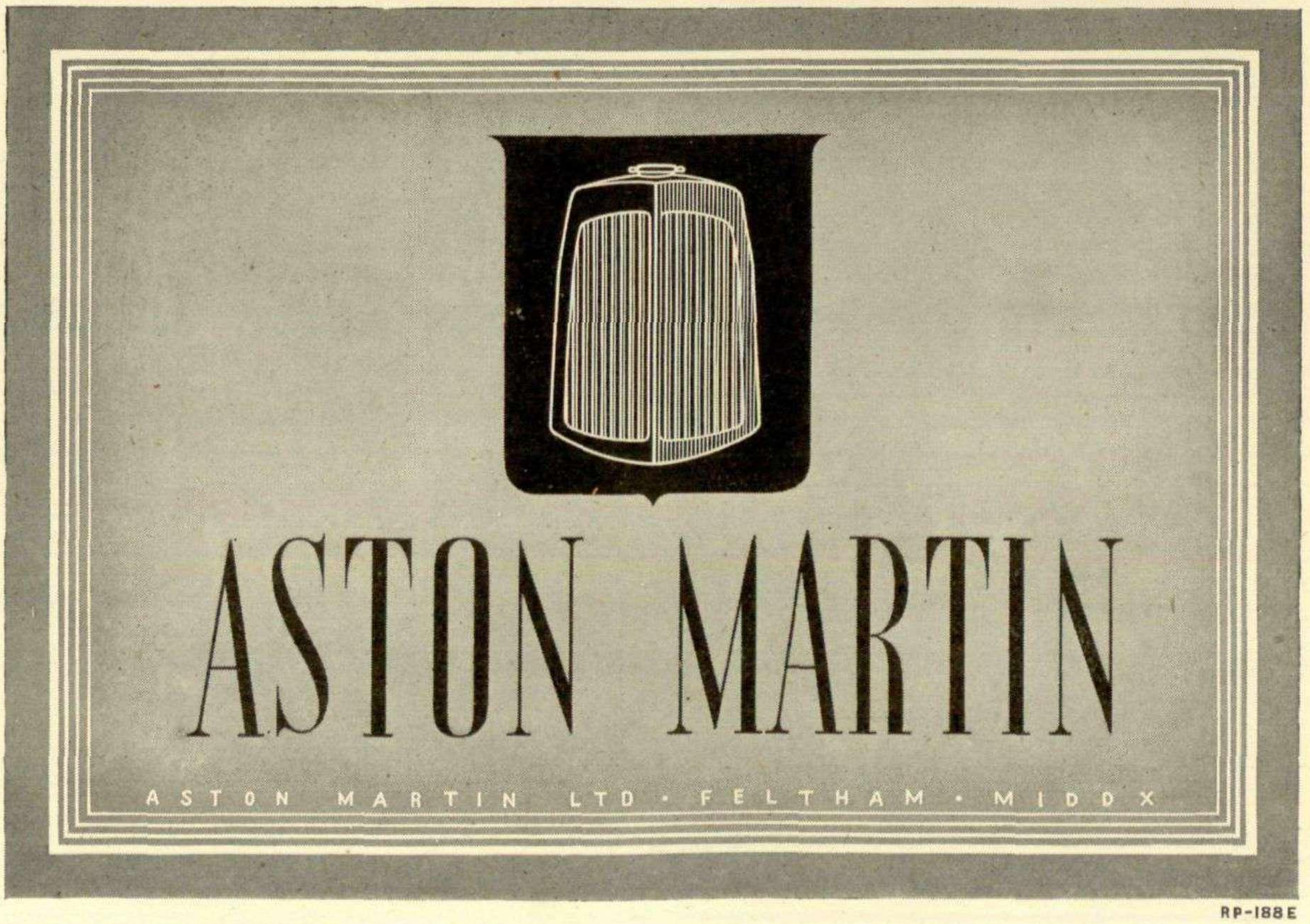
Dining with Anthony Heal after the B.O.C. A.G.M. he recounted how one of Segrave's mechanics volunteered to ride on the tail of the twin-engined 200 m.p.h. Sunbeam during a test at Daytona, in order to try to locate a curious noise in the works. The car reached 180 m.p.h. with the mechanic "listening-in" and Anthony wants to know if anyone has been a passenger at a higher speed! Heal also recalled that on one occasion in the early 1920s its rivals said of the famous V12 Sunbeam (now owned by Pratley) that it was a single-seater, and as such, competed against them unfairly. Consequently a beautiful extra seat was cowled into the cockpit and the 140 m.p.h. Sunbeam ran on this one occasion as a 2-seater.

* * *

Odd Spots

Peter Clark is now in charge of transport at a Naval Establishment in Australia, and is reported to have a Bugatti! Group Capt. Scroggs intends to run his famous Trojan in forthcoming trials; after regular war-time use it needs little attention beyond a change of final drive ratio.

We look like getting a 1946 Land's End and Shelsley Walsh Meetings—if the R.A.C. permits. The Royal Scottish A.C. has announced no trials until after the Japanese war.



RP-188E

Club News

WE HEAR

Mr. Sheppard is building up quite a fleet of 2-cylinder Renault cars for future veteran events, and also possesses a 1910 Model-T Ford. Haining is disposing of his rebuilt 1928 "12/50" Alvis and is completing another, based on a 1931 T.J. chassis. Meanwhile, his 1925 "12/50" Alvis motors as well as ever. F/Lt. C. M. Tait, who owned a 1937 1½-litre Riley "Kestrel" before the war, is anxious to acquire a 12-h.p. sports car, and would exchange, or sell for £30, a new Myford M.L.4 3½-in. B.G.S.C. lathe, with all accessories and motor countershaft, on the principle that a car is easier to move than a lathe each time he is posted. He mentions that he took motor-racing pictures before the war and has an excellent full-plate enlargement of Craig's "3.3" G.P. Bugatti's engine, taken at Wetherby. He once owned a very special "T.T. Replica" Scott, built for him by Harry Longman, and he is now assembling a 172-c.c. Super Sports Francis Barnett as a standby. F/O. Morgan called to see us recently in a J4 M.G. from which the supercharged engine had been removed and replaced by a twin carburetter "Special Series" Riley Nine engine and gearbox unit. A Wolseley Twelve crown and pinion are used to raise the axle ratio, but the car is still under-geared, notwithstanding which it motors very nicely. Morgan has also been motoring a 3-litre Bentley.

Denys Axel Berg has exchanged his open Riley Nine for a sports-bodied "14/40" Vauxhall, as stable companion to his "30/98s." A well-preserved 1903 single-cylinder Wolseley, with very short wheelbase and very high windscreen, is reported in a dry barn near Stratford-on-Avon, for sale for £50, and for the same sum the 1903 Vinot, which the Mayor of Stratford used to drive in the Brighton Run, was offered for disposal, while a 1905 Mors was recently sold in Kidderminster for £60. Dr. Gerald A. Ewen is using a Morris Eight for professional purposes, but is rebuilding a very nice 1926 D.I.S.S. "14/40" Delage cloverleaf 3-seater. He is an enthusiast for these cars, having had this example since 1934, and having had personal experience of four others and casual acquaintance with about ten more. A derelict "Blue Label" 3-litre Bentley, acquirable for the proverbial "fiver" they do say, is reported near Chester.

We are very glad to learn, from Peter Hampton, that earlier reports were false, and that Richard Shakespeare is alive and well, with the C.M.F. He has registered his Mors, Enfield-Alldays and Gregoire cars with the Veteran Car Club and intends to compete in their post-war events. Incidentally, the "basic" ration will permit of the exercising of the veterans, and any member of the Veteran C.C. who has been out of touch, and who hasn't registered his car, should write to the new hon. secretary, Capt. Cullimore Allen, Wootten, Iffley, Oxford.

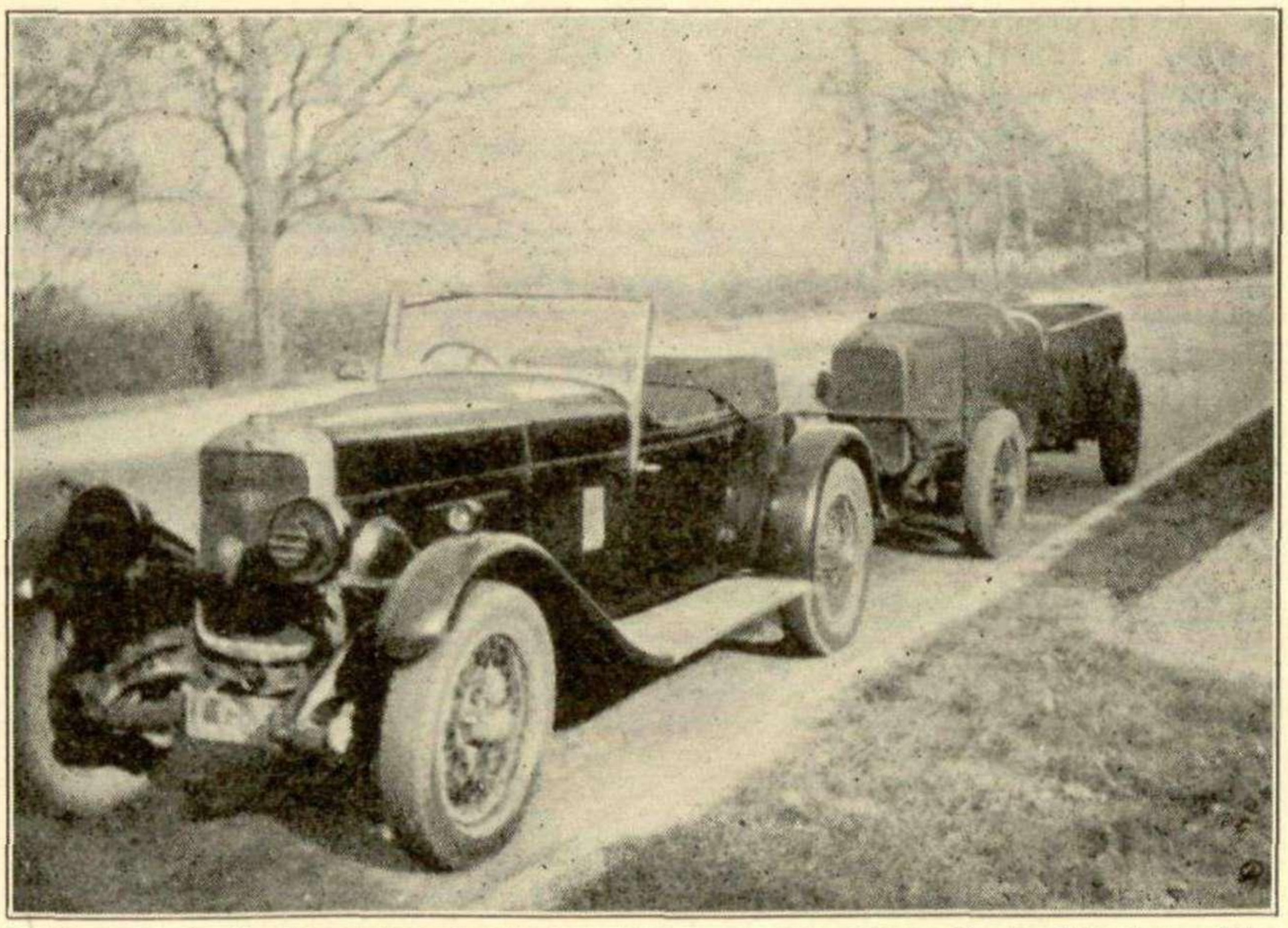
Kenneth Neve brought himself up on racing motor-cycles, and is tough. For motoring to and from business his elderly Austin Seven has been replaced by a 1933 Riley Nine saloon, but by the time these words appear this will probably have been banished in favour of an open car. Neve has also acquired the ex-Dr. Beaver, ex-Anthony Brooke "30/98" Vauxhall, which he considers will constitute a "nice brisk tourer." He badly needs certain engine spares, if anyone knows of a source of supply. A promising-looking 4½-litre Bentley chassis is reported at a garage near Hull, and a 1928 "Brooklands" Riley Nine was for sale at a Yorkshire R.A.F. station at the end of May. Soon after VE-Day we learned that MOTOR SPORT was reaching members of the B.L.A. in Germany. Capt. A. J. Fletcher, R.A., has acquired one of the last 2-litre Lagondas to be built (a 1933 car), and sends a "12/50" Alvis book to the Library. He knows of nearly complete "12/50" and "Firefly" Alvis engines, if anyone is interested. Cpl. C. V. Rawles, M.E.F., is anxious to fit a good engine into a Vale-Special, and would be glad to hear of one of these cars and to receive advice about fitting another make of engine. D/M. Trevor Gillard, of the 750 Club, and now with C.M.F., sends an interesting account of the two special Austin Sevens he had before the war. He would like a "Brooklands" Riley or an Alta after the war and intends to build a sprint Austin Seven.

F/Lt. R. E. Tongue is looking forward to again racing his 1939 1½-litre Maserati, which is carefully stored. He has a son, seven weeks old, and his wife is very keen on the Sport. Tongue went through the Battle of Britain, and later went to Africa as a test pilot—but says he prefers fast motoring on land. Edward Hyde is disposing of his Lancia "Aprilia" for a 328 B.M.W. Julian Fall has been riding a Velocette, pending leaving for Burma. Boddy has become "basic" conscious and motors in a 1934 Austin Seven saloon, offset by a 1928 "Grand Sport" Amilcar. A very sound 8th Series Lancia "Lambda" has appeared in London, and Birkett has a "Dilambda" for disposal. A 1914 15.9 Singer and an 11.6 Albert have been found in a barn near Stamford.

★

SYNTHETIC !

Norman Freeman, of Dunlops, has told us that synthetic rubber tyres will not stand up satisfactorily to the stress of racing and that his company will not be able to make natural rubber racing tyres until the needs of the fighting forces have been fully met. Now we learn that America has carried out some tests to see how synthetic covers like racing speeds. Wilbur Shaw has driven a racing car round Indianapolis on standard Firestone



"Silver Eagles." These two 6-cylinder Alvis cars belonged to H. J. Munday. His 2-seater "beetle-back" is towing home a 4-seater—the sort of fun and games we can now enjoy again on the basic ration of petrol.

synthetic tyres for 500 miles, averaging 100.34 m.p.h., which meant reaching 135 m.p.h. along the straights. Shaw is said to have experienced no trouble. Now this raises a number of issues. It reminds us that whereas at present we have no Brooklands, America has Indianapolis intact. It makes us wonder what our Ministry of Fuel and Power would have said had Dunlops asked for 50 gallons of special fuel for similar tests.

We are prompted to ask what British experts have to say about this, in view of Mr. Freeman's statements. Possibly they will answer, as we would ourselves, that *any standard* tyre which will withstand 500 miles at an average of over 100 m.p.h. sounds almost too good to be true.

★

AN EXPLANATION

The Editor asks the indulgence of all those readers—there are many, very many !—who consider that he owes them a reply to correspondence. His explanation is that he has only very limited spare time to devote to MOTOR SPORT, as he is still obliged to work full time on war service. While he greatly regrets having to leave much undone which would normally be done, he hopes the many enthusiasts who correspond with him will understand ; he gains some consolation from the fact that a weekly contemporary, with a staff of several persons working full time, has had to announce that it cannot answer any queries from readers until its full staff is restored to it. MOTOR SPORT answers a great many letters and does its best to return readers' photographs, unused MSS., etc., but there is a limit. *You can help by always enclosing* a stamped envelope if a reply is sought, and by remembering that business matters are outside the Editor's scope. His address is 123, Bilton Lane, Harrogate.

★

COVER PICTURE

Since we re-introduced cover pictures early in the war, old blocks have been used to assist production under war conditions, as the older readers will have remarked. This practice will have to be continued for some while yet, but, to celebrate the end of the German war and the return of " basic," we are making an exception this month. Tim Davis is shown during practice for the 1935 500-Mile Race at Brooklands, with his single-seater Frazer-Nash, in the Paddock, on the Friday before the race. The spectators are *not* watching a V1 !

★

V.C.C.

The Veteran Car Club is holding its A.G.M., followed by a luncheon and film show, at the Waldorf Hotel, Aldwych, London, on July 21st, lunch being at 1.15 p.m. Guests can be taken to the lunch and film show and tickets, at 13s. 6d. per head, are available from F. Hutton-Stott, Speen Place, Newbury, Berks, up to July 11th. The June issue of the *Gazette* is to hand and maintains its usual standard.

★

WATFORD & DIST. M.C. & L.C.C.

The Watford Club is holding a rally type of event on August Bank Holiday—and we believe Anthony Heal has some of his veterans on view elsewhere that day. Certainly—things are beginning to move !

★

LIBRARY

The MOTOR SPORT Library of Instruction Books is in great demand. Recent additions cover 12-h.p. British Salmson, " 14/40 " DISS Delage, Essex Six, rear-engined Trojan, D-type Vauxhall Light Six, Morris " Isis," 12-h.p. Rover "Pilot," Rover Light Six, bull-nose Morris, etc. It has become what it is by reason of the generosity of readers. Thanks !

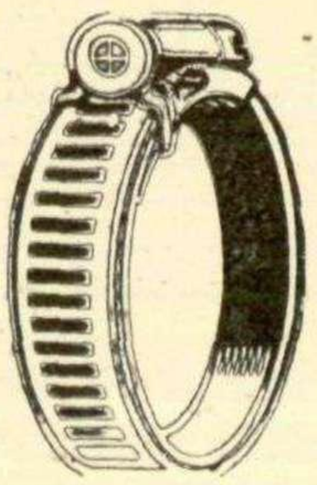
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THE V.S.C.C. OF A.

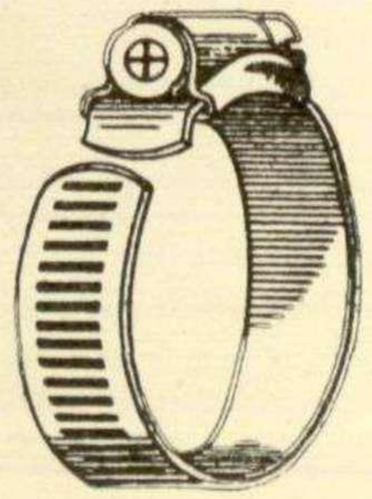
The Vintage Sports Car Club of Australia, which, by the way, has excellently headed notepaper bearing pictures of " 30/98 " Vauxhall, blower Bentley and Bugatti cars, held a rally on March 28th, and before that actually ran a trial. Membership now stands at 37, the cars comprising Mercédès-Crossley, Frazer-Nash-A.C., Austin Special, two s.c. f.w.d. Alvis, " Speed Six " Bentley, " Prince Henry " Vauxhall 2-seater, two Salmsons, Type 40 Bugatti, Type 135 Delahaye, " Blue Label " 3-litre Bentley, Straker-Squire, 1914 Buick, two S.S., " Silver Ghost " Rolls-Royce, twin o.h.c. 3-litre Sunbeam, sports Austin Seven, " Red Label " 3-litre Bentley, Aston-Martin " International," Vulcan Lea-Francis, Riley " Imp," " Boulogne " Frazer-Nash, " 14/40 " Vauxhall, V8 Ford, Meadows' Frazer-Nash, a third Salmson, and nine " 30/98 " Vauxhalls. The latter comprise OE 235, OE 138, OE 226, OE 238, OE 276, OE 1078, OE 32, OE 197 and OE 124 with 125 engine. Owners of " Hyper " Lea-Francis, " 21/70 " Alfa-

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Romeo, Lancia "Lambda," Type 43 Bugatti, and Mettalurgique are being contacted.

★

THE COVENTRY M.S.C.

Regular meetings are being held on the last Thursday of every month at the Sydenham Palace, Ford Street. Last May, 26 members and friends travelled to Leicester to inspect Gerard's collection of potent Rileys. Hon. secretary, W. Rheese, 42, Brookside Avenue, Coventry.

★

B.O.C.

The Bugatti Owners' Club held its A.G.M. at the R.A.C. on Thursday, May 31st. Eric Giles read the minutes of the previous A.G.M. and K. W. Bear took the chair, Lemon Burton and Baines representing the Council. The officers of the club were re-elected and a new member was admitted, on the strength of owning one of the model electric Bugatti cars. The business of the meeting was quickly disposed of, and a cable was despatched to Col. G. M. Giles, who is serving abroad, wishing him a speedy return.

Future meetings were discussed, and the secretary reported that Prescott could be put into good order in about two months and a really good job could be made of repairing the pot-holes and making up the return road, etc., for £1,000. Compensation from the Army had already been received. No competitions could be held until the R.A.C. gave the word "Go," and it was suggested that repairs might be better left until next spring, as frost next winter would only damage a newly-laid surface. The matter was left in the hands of the secretary, pending a decision on the part of the R.A.C. Competitions Committee to permit a resumption of active competition motoring. The question of a rally to Prescott was then raised, but the general opinion seemed to be that there wasn't enough basic petrol to justify it and, instead, a suggestion of Major Taylor's for a social was discussed. It was left in the hands of Mr. Giles to try to find a venue near London at which an informal meal could be had and cars attend if desired. Reverting to Prescott, Lemon Burton said he thought going fast up the hill on ordinary tyres would be dangerous, but Bear replied that he had never used racing tyres in his life!

The club is in a sound financial position and ready to resume full activities as *soon as conditions permit.*

Amongst those present were Lt. Peter Hampton, Anthony Heal, Rivers-Fletcher, Philip Turner, Major Taylor, Leonard Potter, Rodney Clarke, Mr. and Mrs. Whincop, Holland Birkett, D. S. Jenkinson, Col. Sorel, Mr. and Mrs. Boddy, and others.

Hon. secretary, E. L. Giles, 2, Queen Street, Mayfair, W.1.

★

THE COCKFOSTERS RALLY

The very greatest credit must be accorded to Rivers-Fletcher for starting things off in quite an ambitious manner, to celebrate the return of the basic fuel ration. His event will be known as the Cockfosters Rally, and is to happen on July 14th. It has, of course, the full consent of the R.A.C. Rivers-Fletcher has rented, for our amusement, a building estate, and the plot is to rally there on "basic," talk cars, inspect cars and partake of light refreshments in a specially erected marquee. The R.A.C. will not permit any form of contest, but there will be demonstration runs in interesting cars by prominent personalities, along an undulating, twisty piece of private concrete road—at low speed. It is hoped that Earl Howe will open this demonstration with Peter Monkhouse's Type 51 G.P. Bugatti. There will be other interesting cars on view, as well as the attraction of the "spectators'" cars. Hospital funds are to benefit from this meeting, and we particularly want to make it known that hiring the ground and preparing it constitutes an expensive undertaking. Rivers-Fletcher is already personally out of pocket for a sum approaching three figures, so please do your best to support him.

A fairly high charge will have to be made for admission, but will be kept as low as practicable, consistent with expenses—and who will begrudge the cost of admission if real racing cars are to be seen, smelt and heard! The owners of these and other cars are generously giving of their time and precious gallons to have them present. The public will be admitted, to swell the hospital takings—and we hope this will assist towards their better education. The venue is the Bevan Park Estate, Cockfosters, and this will be easily found from New Barnet. Full details are available from the organiser—but please do not worry him unnecessarily, as he is naturally pretty fully occupied as it is. Rivers-Fletcher, "Noddings," 4, Eversleigh Road, New Barnet, Herts. The latest arrangements at the time of going to press will be found in "Rumblings" on page 145.

★

750 CLUB

The 750 Club awoke to what we hope will be a new lease of life with the reappearance of "basic" motoring. An informal meeting was held at the Osterley Hotel on June 3rd. The cars which attended included a cream Marendaz-Special, an "Ulster" Austin Seven, Lush's T.T. Austin, Ballamy's Vauxhall saloon, H. Birkett's Type 30 Bugatti, with two S.U. carburetters, doing its 70 at 3,600 r.p.m., F/Lt. Mallock's Austin, Chile's Austin Seven 2-seater, Orlebar's Ford Eight saloon, Ashwood's independently-sprung Alvis saloon, Dr. Ewen's Morris Eight, a Hillman Minx, and a Riley. Julian Fall attended on a Velocette motor-bicycle, and also present were S. H. Capon, Mr. and Mrs. Frost, Merrilees, French, and many other enthusiasts. S. H. Capon told us that similar informal meetings will be held at the same venue on the first Sunday of each month. This is the first statement he has made as to the future of the Club since the correspondence recently published in MOTOR SPORT. It seems to go at least part way towards answering the issues raised, and applications for membership, etc., should continue to be addressed to the present secretary.

"BASIC" IS BACK

During the first few days of "basic" many interesting cars were noted in London, although most were doubtless on "official" duties. The "bag" included a very Italian-looking Fiat "Ardita" tourer, with the hood up, flying a British flag and used by a master decorator, a Schneider saloon, a nice "12/50" sports 4-seater Alvis, a very Parisian Delage coupé, two Swift Tens and one of the original Singer "Junior" saloons and an early 2-seater of the same make. A 200-mile run up A.1 added three Lagondas, two M.G.s, two Brough-Superiors, several Rolls-Bentleys and Lancia "Aprilias," and a 4½-litre Bentley, while the ex-Marcus Chambers 4½-litre short-chassis Bentley was seen in Hyde Park, on a leave licence.

★

B.M.C.C.

The British Model Car Club's May meeting in London saw the initial appearance of W. P. Jones's 10-c.c. O.K. Super 60-engined 3.2-litre Alfa-Romeo. This car ran without body, lapping at 30–40 m.p.h. Cruickshank's M.G. recorded fastest time, at 46 m.p.h., but the Curwen-Special did about 45 m.p.h.

★

THE M.C.C. MEETING

A meeting of the Motor Cycling Club was held on Sunday, June 17th, at the erstwhile "Edinburgh" starting point in Wrotham Park. About 60 cars, well laden with enthusiasts, turned out in perfect weather, together with a number of motor-cyclists and a few of the unfortunates who still depend on London Transport.

As one has come to expect at an M.C.C. event, a truly varied collection of cars was to be seen, pre-war trials specials being conspicuously absent—unless the renowned Scroggs's Trojan be classified as a "special." For the rest, the sports cars were represented by reasonably normal-looking examples of Riley "Sprite," Jaguar "100," V8 Allard, 1,100 H.R.G., 2-litre Lagonda, M.G. Series T and P, Type 328 B.M.W., and Le Mans Peugeot. At the other end of the scale of dignity were such luxury conveyances as Phantom III Rolls-Royce, Lagonda V12, Daimler limousine (with chauffeur!) and 4¼-litre Bentley. In the motor-cycle park, the most striking thing was the prevalence of multi-cylinder outfits, by B.S.A., Brough, Ariel, and Harley Davidson.

Many familiar faces were seen again at this purely social gathering, among those present being Ripley, Hunter, Scroggs, Couper, Klementaski, and "Grande Vitesse." New faces were there, too, including allied visitors from China and America.

Major Marians spoke a few words of welcome, scorning the aid of a megaphone, expressing pleasure at the sight of such a fine gathering of cars. Then Jackie Masters said he would be ready to stage another event, with hills, so soon as petrol could be obtained. A 1946 Land's End trial seems to be a certainty, with a smaller scale event before then if conditions permit.

LETTERS from READERS

Sir,

I understand that an article of mine which appeared in your February issue entitled "Enthusiastus Extinctus" has caused a fluttering in certain dovecotes, where it has been inferred that "the writer was frightened to sign it."

I shall be grateful, therefore, if you will publish this letter to confirm that the article was signed in the usual way.

I am, Yours, etc.,

Liverpool. ANTHONY PHELPS.

* * *

Sir,

I was interested in Mr. John Bolster's article "Rolls-Royce Reflections." It would be nice if, for example, Mr. Hutton Stott would give us a similar article on the 1919–31 Lanchester.

I could supplement, if required, with a few details about the three I have owned, and with a few items from my Lanchester scrap-book.

I am, Yours, etc.,

Godmanston, W. STUART BEST.
Dorset.

[After sports cars, we agree that a great deal of interest attaches to British luxury cars of an era before pressed-tin predominated. We shall be delighted to devote a page or so to the "Forty," "Twenty-One" and "Straight-Eight" Lanchesters if Mr. Hutton-Stott or Mr. Best will oblige.—ED.]

* * *

Sir,

I was extremely interested in Capt. Moon's article on "Diesel Engines for Sports Cars," as I have had considerable experience of compression ignition power units in road vehicles.

I have always understood that, owing to the fine limits to which fuel pumps and injectors have to be made, the cost of the injection apparatus alone is almost as much as that of a comparable petrol engine.

The above refers to engines of at least 3- to 5-litre capacity, and if a smaller engine was required, even finer limits might be necessary with a corresponding increase in cost. I believe that it is necessary to run a C.I.-engined car for at least 40,000 miles a year before the saving in fuel cost nullifies the increased outlay on the engine.

Some of the C.I. engines I have driven were reasonably smooth at normal speeds, but nearly all had a bad vibration period usually arranged to coincide with tick-over. Their chief advantage was that they were infinitely more reliable than the petrol engines they replaced, and for heavy goods or passenger vehicles the fuel saving was considerable.

Perhaps the following example of the saving effected by changing over to C.I. engines may interest your readers.

A fleet of public service vehicles—26- and 32-seaters—were originally fitted with normal petrol engines of a very reputable make. The engines were governed to a maximum of 2,100 r.p.m., at which speed they developed approximately 60 b.h.p.

The back axle ratio was 6.25 to 1 and maximum road speed 38 m.p.h. Petrol consumption averaged 8–10 m.p.g., and at times oil consumption was such that it was necessary to top up the sump during the day's run of 250–300 miles.

These engines were replaced by Gardner oil engines developing 68 b.h.p. at 1,750 r.p.m., and the axle ratio raised to 5.5 to 1, which gave approximately the same road speed as before, *i.e.*, 38 m.p.h. The improvement in performance was incredible—hills which formerly required 2nd gear were climbed on top, and owing to the increased torque at low revs., the pick-up was improved.

The petrol engines had required fairly frequent valve grinding and decarbonising, but the oil engines did 40,000 miles between top overhauls and 180,000 before re-sleeving became necessary. The increased reliability and freedom from ignition troubles, etc., was very marked, and it was indeed rare for a vehicle to be held up on the road with any form of engine failure. As a matter of fact, I cannot recall a single instance of bearing failure in the fleet over a period of six or seven years. These engines, which were installed in 1933, are still going strong after 12 years of hard work, which speaks for itself.

From the operator's point of view the fuel saving was amazing. With a greatly improved road performance the fuel consumption averaged 18 to 20 m.p.g. of fuel oil against the 8 to 10 m.p.g. with the petrol engines, an improvement of 100 per cent. Oil consumption was slightly less, the vehicles requiring no topping-up of sump while on the road.

Starting from cold presented no difficulty despite the fact that no electric starters were fitted. A decompressor lever lifted the inlet valves and enabled one to swing the engine by hand. When the engine was turning nicely, release of the decompressor resulted in a certain start. With a very cold, new engine, where sufficient cranking speed could not be obtained by hand, I found the following method very effective :—

A piece of rope was looped round the starting handle, which was engaged at about the 8 o'clock position, and with one man on the handle and one or two on the rope, the engine was pulled over full compression and would start immediately. No heater plugs or other starting devices were employed.

I have heard of drivers stuffing a petrol-soaked rag in the air intake and setting it alight to heat up the induction system when an engine was very obstinate, but have never found it necessary myself.

Another interesting point about the Gardner engine is that the accelerator pedal is merely a speed control and is not connected directly to the throttle. The engine is governed both for tick-over and maximum revs. The throttle spring pulls the throttle open, reversing the usual practice so that with the engine stopped the throttle is always wide open. On starting up, as soon as the revs. reach the pre-determined tick-over speed, the governor automatically closes the throttle to maintain those revs. If a load is applied to the engine the governor opens the throttle to maintain the revs. without any movement of the accelerator pedal.

For example, assuming the vehicle is cruising along in top gear with the accelerator pedal depressed half-way, this will give a road speed of approximately 20 m.p.h., *i.e.*, half maximum speed and revs. If a hill is climbed the governor will open the throttle to maintain 20 m.p.h., it being possible to have the throttle fully open with the accelerator only partly depressed.

On topping the hill, if a descent lies ahead, the governor will close the throttle as the speed reaches 20 m.p.h. until it is possible for the throttle to be fully closed, although the accelerator pedal has not been moved from the mid-position.

I have handled 3-, 4- and 5-cylinder Gardner engines on the road. The 3-cylinder was a lusty motor but very rough, every individual firing stroke being felt. The 4-cylinder was much smoother, and the 5-cylinder was a delightfully smooth and well-balanced engine, the cranks being set at 72° to each other, giving an evenly-spaced firing order.

One 39-seater motor-coach I have handled had a 5-cylinder Gardner engine with an overdrive gearbox giving an extra super-top gear of about 2.8 to 1. I have had a road speed of 62 m.p.h. with the engine turning over at about 1,600–1,700 r.p.m.

I imagine that an engine such as the smaller 4-cylinder L.K. Gardner in a suitable chassis would make an interesting sports car, but a back axle ratio of about 2 to 1 would be necessary, or else a step-up in the transmission. This engine is a very advanced job with electron crank case and sump, aluminium block with wet liners and aluminium head with phosphor-bronze valve inserts and injector housings.

Capt. Moon spoke of the Leyland coaches with hydraulic torque convertor. These are a sound, reliable job, but have one drawback. When in "convertor" there is a free-wheel effect, *i.e.*, if the throttle is closed the vehicle will coast exactly as in a free-wheel-equipped car.

In top gear there is a dog-clutch-engaged direct drive. On icy roads or descending steep hills it is not possible to engage a lower gear to assist in controlling the vehicle, so top gear has to be used, a point which many drivers dislike.

Wishing all success to MOTOR SPORT.

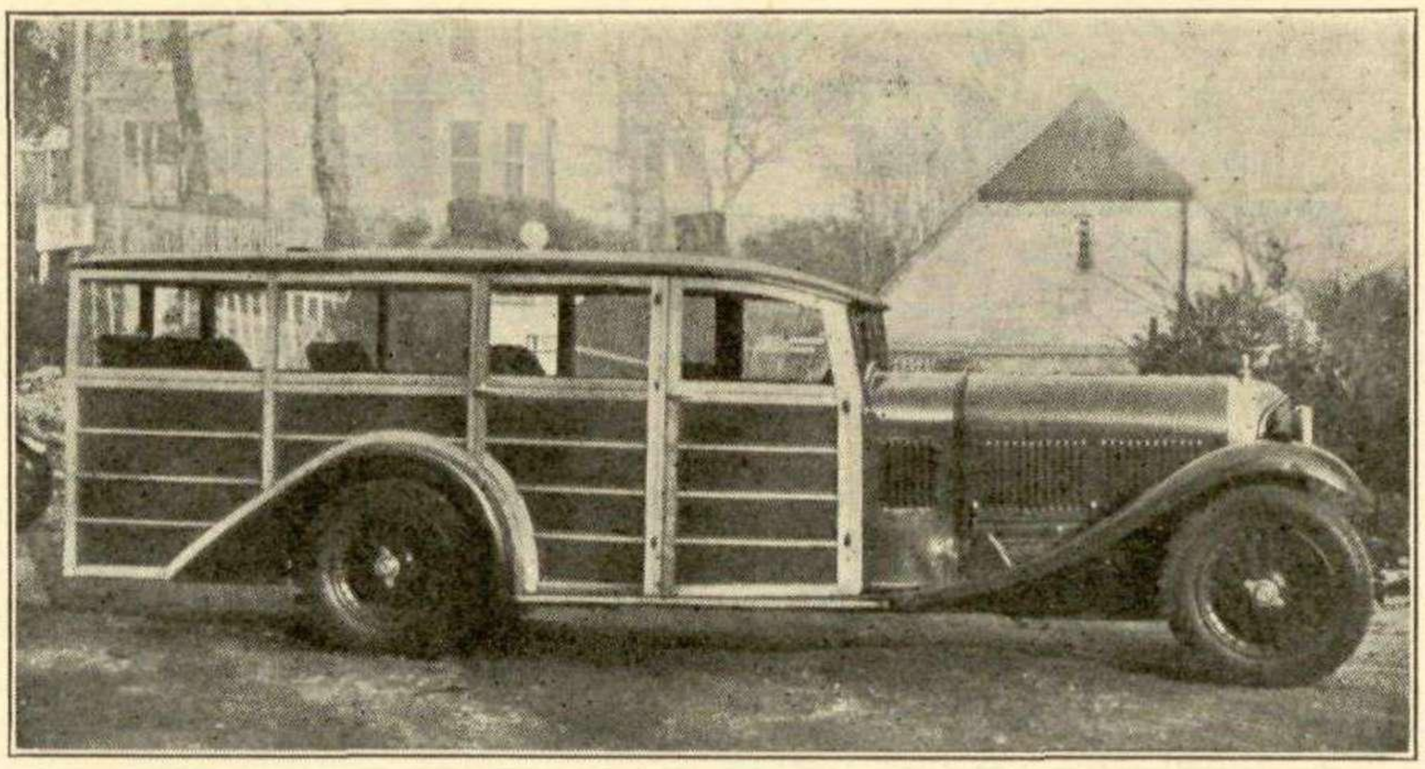
I am, Yours, etc.,

R.A.F. C. M. TAIT (F/Lt.).

* * *

Sir,

You may be interested in the enclosed photographs (one published—ED.) of two 6½-litre Bentleys owned by Mr. Snow, of the Merville Hotel, Bournemouth, a great enthusiast for anything motoring. One car has a wheelbase of 13 ft. 6 in. and a body built to Mr. Snow's design by Lee Motors, of Bournemouth. It is a 9-seater, or, alternatively, the rear seat can be removed to give very extensive luggage-carrying capacity. The second car is a "Speed Six" with 11 ft. 9 in. wheelbase, and was acquired by Mr. Snow, adorned with an enormous ambulance body. Much hard work and bad language by Mr. Snow's head mechanic, Mr. Godwin,



Hotel Merville's (Bournemouth) station car. A 6½-litre Bentley put to good use by Mr. Snow, the proprietor of the hotel.

another real enthusiast, resulted in the removal of this veritable hospital on wheels, and a thorough cleaning and reconditioning of the chassis and engine.

It now awaits a similar, but somewhat smaller body to its stable mate. Mr. Snow has decided views on the value of striking cars for hotel work, and intends using the Bentleys for long-distance touring in addition to ordinary hotel work. His personal motor is a very lovely D8 100S Delage cabriolet by Fernandez et Darrun, finished in black and grey.

I should be very grateful for any details of the previous history of these cars. The registration number of the long car is UL4168, and that of the short, AG5757.

I am, Yours, etc.,
Poole, Dorset. REGINALD MILES.

[This is a truly excellent use for cars which are old as to years, but not as to condition, and we hope the practice will develop.—ED.]

* * *

Sir,

Your remarks in "Rumblings" on the need for a utility sports car interested me greatly. I have for some time been turning over in my mind a similar scheme, using the Ford Eight or Ten chassis as a basis. I have come to the conclusion that, unless the plan was carried out by an enthusiast as a hobby, rather than a business, the cost would be such that the majority of prospective customers would prefer a third- or fourth-hand M.G.

Briefly, my scheme, to be operated as a spare-time hobby, with the intention of merely covering my own motoring expenses, is as follows:—

To purchase Ford vans, which should be obtainable very cheaply when new ones are available. I choose vans because it should be possible to obtain Girling-equipped chassis while private cars so equipped are still too expensive. The body would, of course, be thrown away and the chassis thoroughly overhauled and checked. Factory-conditioned engine, gearbox and rear axle would be fitted (cost about £18 pre-war, I believe). Compression ratio to be raised and the usual port polishing and, possibly, lightening of the flywheel. Further tuning to be carried out to special order. Body-work to be a simple 2- or 2/4-seater shell and to be bought out. A dozen such shells ordered from one of the smaller body-building firms should not be very expensive.

I doubt whether I shall have the capital or equipment to carry out this scheme myself, but I feel sure that, on these lines, a small profit would be shown at a price of £70–£80, which is not excessive for a virtually new car. On a commercial basis, of course, with overheads and employed labour, it could hardly be done for less than £100–£120.

Perhaps some better-equipped enthusiast, or one of the "scuderias" might take up the idea. If so, I would plead for flexibility in its execution. Components should be available at reasonable prices to those who prefer to do their own rebuilding. The prices of some special parts for Austin Sevens, etc., before the war were ridiculous. It should not be necessary to pay the price of a bicycle for a simple built-up inlet or exhaust manifold, for instance.

Incidentally, I have often wondered why Mr. Morgan hasn't marketed a utility sports car based on his three-wheeler. A four-wheeled version of either the twin- or Ford-engined model should not have cost more than £150 pre-war, with weight under 10 cwt.

I am, Yours, etc.,
A. M. WILLIAMSON.
Stroud.

* * *

Sir,

Further to my letter of March 27th, and your article in the May issue of MOTOR SPORT, it is felt by members of the committee that some slight clarification of the position would be beneficial.

One point it is felt you should be corrected upon is your statement that I had lost interest in the 750 Club and to my personal refusal to resign from the honorary secretaryship of the Club.

The actual position was that as a result of rationing restrictions and the corresponding increase in the cost of meals, no suitable venue could be found to hold Club socials. I personally could not find anywhere suitable for the monthly luncheons previously held at a moderate

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WANTED G.P. back axle ratio in good condition, 15 by 54 or 14 by 54. State price. Clarke, Fieldways, West End, Chobham. Tel. 131.

1934 Riley Kestrel body parts, also 1934 Lynx or Kestrel body. Newbury, 4, Kingsmead, New Barnet.

NEWNES *Motor Engineering*, volumes 1–4 and charts; also Speedy gearbox. Newbury, 4, Kingsmead, New Barnet.

MORGAN 3-wheeler or 8–10-h.p. sports car. Must be mechanically sound. Sgt. Wright, R.A.F., Watchfield, nr. Swindon.

ROCKERS and camshaft drive for N-type Magnette. Wilson, 23, Moln Road, Birkby, Huddersfield.

TYRES, beaded edge, required for veteran, size 710 by 90, or near. E. J. Steel, 117, Blenheim Park Road, South Croydon. Uplands 6635.

Spares Section,
MOTOR SPORT,
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LONDON, E.C.1

charge. After your agitation, together with other members of the Club, it was agreed they could fix up such meetings, with the results that are quite well known. I have always maintained, however, that as soon as the basic ration was reinstated the Club meetings held on the first Sunday of every month would be recommenced. The meeting of June 3rd at the Osterley Hotel is proof of this statement.

As regards the bulletin, Holland Birkett was made Editor, and was able to find sufficient copy for some issues, but after the January, 1943, issue no further articles were forthcoming, and rather than lower the standard of this publication, it was abandoned until members had more time to submit articles.

In respect of subscriptions, I have always been open to receive them, but after some abortive attempts to circularise members with little or no results, I felt it was fairer to await the recommencement of Club activities before pursuing this subject further.

As you will be publishing this letter, I would say that members should send their subscriptions to me as previously.

I am, Yours, etc.,
S. H. CAPON,
Honorary Secretary,
750 Club.

London, S.W.2.

[We still believe that the 750 Club, under its present secretary, is drifting away from its original conception and is in grave danger of becoming just another enthusiasts' club.—ED.]

* * *

Sir,

I was interested in the article by Sqdn./Ldr. Marris on "Speculations on Fast Car Suspension," in the April MOTOR SPORT. The author's opening remarks indicate, I think, undue modesty, as, though I do not agree with some of his views, I certainly regard him as something of an expert, a distinction I hasten to disclaim.

Regarding his résumé of the old-type suspension, I do not know whether it is generally known that a ½-elliptic spring has good resistance to twist if its loaded camber is slightly negative, and so its anti-roll properties are fairly good, assuming semi-elliptic suspension front and rear. Moreover, steering pivot angles do not alter on bump and rebound.

Turning to advantages of i.f.s., the author stresses the importance of understeer, with which I agree, as it ensures directional stability. A normally-sprung car can possess understeer, however, although in considering i.f.s., relative front and rear slip angles come into the picture; but it is still necessary to consider the behaviour of front and rear wheels. As the author implies, steering geometry may affect it. The advantages of i.f.s. are several, and include, for racing cars particularly, those of "keeping the wheels on the ground," and minimising gyroscopic action, "tramp," and, in certain cases, brake torque reaction.

The author then describes various i.f.s. systems, and their pros and cons. Of the vertical types, the twin trailing crank system seems to be the best. Of other types, the unequal wishbone is the most popular, and it is notable that the respective link ratios allow wide scope in determining wheel movement and roll centre, which can, if necessary, be nearly vertical and nearly at ground level, respectively. Backward rake of the wishbones, which is sometimes adopted, would help in this direction, though I understand that this is not the primary reason. I am not well acquainted with the swing-axle system at the front, unless the André-Girling belongs to this class; also, in some cases, the lower wishbones extend to practically half track length. Regarding the equal and parallel wishbone system used on the G.P. Mercédès, I think gyroscopic action is a greater disadvantage than scrub, which need not be serious.

As to independent rear suspension, unsprung weight reduction is more effective in this case, and I agree with the author that the De Dion axle, which is not a true independent system, has a good deal to recommend it, though true i.r.s. may, in time, supersede it.

Concerning the author's theories on sports and racing car suspension, it is doubtful if the c.g. of a touring car is likely to be as low as a G.P. car, and, moreover, it invariably has more conditions to be considered, such as variation in load, ground clearance, etc., and so wishbones at the front, which raise the roll centre, seem advisable. The G.P. type of car is therefore an extreme case, in which front roll centre must be approximately at ground level to be low enough, and the author's theory regarding the vertical system is undeniably correct and reasonable. However, the engineering disadvantages of this method still remain, and I think a strong case could be made for the unequal wishbone system. Effective slip angles will be very small, and, I think I am right in saying, are limited to about 6° from vertical.

The use of anti-roll bars seems to be a compromise, and their use with an independent system is rather obscure, as is the question of forward engine mounting. I appreciate the fact that weight transference at front must be more than at rear to minimise skidding, though this is limited by outer wheel loading, inner wheel adhesion, and the resultant overturning tendency; also that the wheelbase must be as short as possible, within limits, for various reasons.

Lastly, while what may suit a large car may not suit a small one, independent suspension would seem to be equally advantageous to both types, though offset by increased cost and complication.

Partly for this reason I am not in favour of front wheel drive, though expert opinion on this question continues to disagree, as in the case of rear engine position.

In conclusion, may I say how well MOTOR SPORT keeps up its standard of interest, particularly with articles on individual makes and models, like those on the Rolls-Royce and the Austin Seven "Nippy." The article on "Ethics of the Quality Car" was most interesting, although somewhat controversial, in view of what has recently been said and written about American cars.

I am, Yours, etc.,
R. W. J. CLARKE.

West Heath,
Birmingham, 31.

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AUTOCAR, Jan., 1897 to Dec., 1901. In binders' cloth (July-Dec., 1899, missing.) 7 vols., clean. £10 free. Box No. 181, MOTOR SPORT, 15, City Road, London, E.C.1.

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