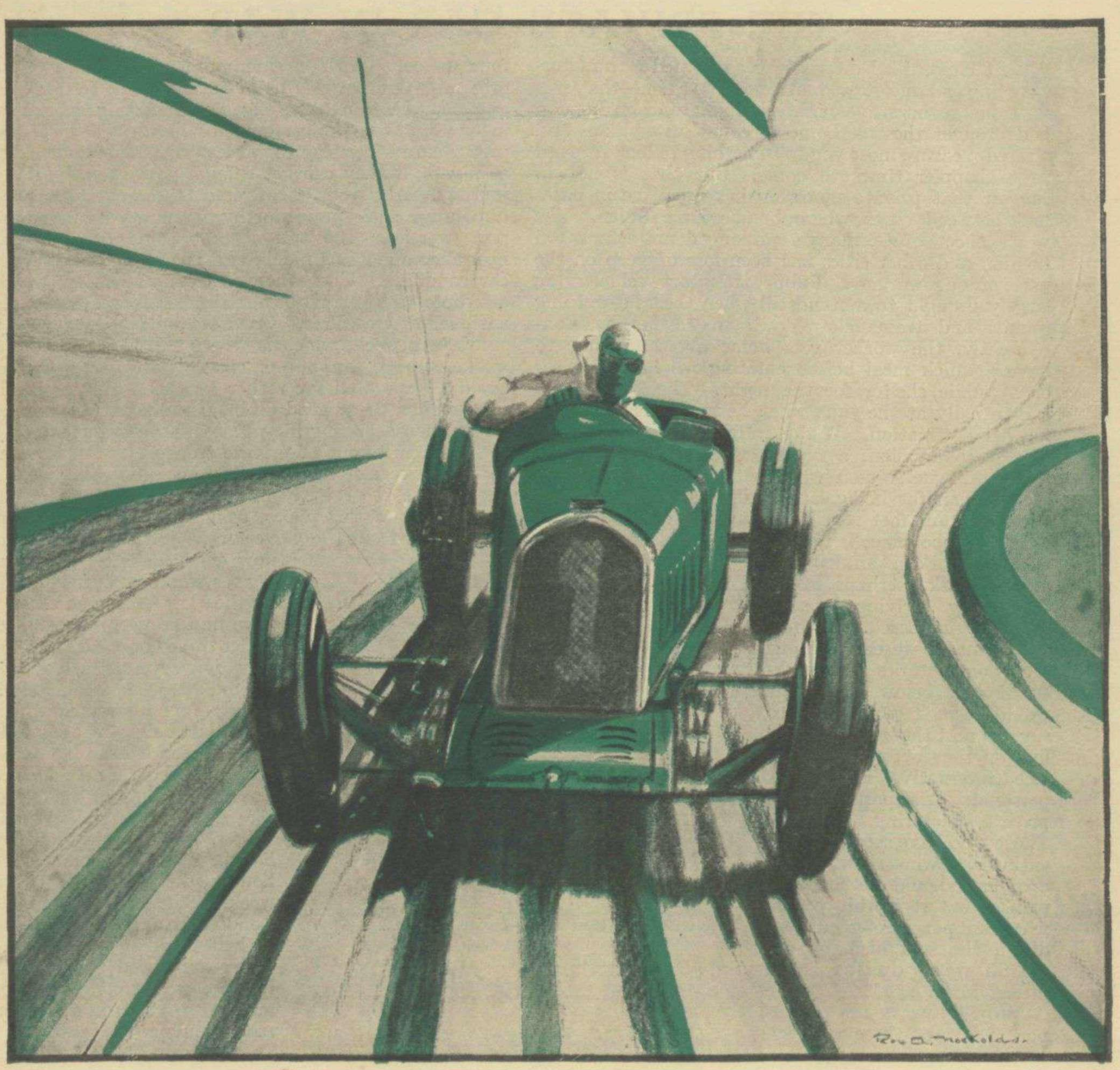
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THE PRIVATE CAR IN WAR

LAST month's Editorial was concerned with motoring as a *means of war-time relaxation*—that was before intensive night bombing raids on London had brought the war home to countless civilians and altered pleasure motoring to something to look forward to in happier times to come. But that is not to suggest that private motoring has no place in cities and between cities where bombs have fallen. The worst effect of Germany's prolonged air attacks on London and other cities has been loss of sleep on the part of our workers. Public transport vehicles are largely brought to a standstill when the raid-warning sounds and trains slow down to 15 m.p.h. Consequently, the worker gets home about in time to have a quick meal before entering his home shelter or a public shelter for the night. The "all-clear" goes usually at the time when he must set out again for his destination. If the railways have been put out of commission, a trying, worrying journey lies ahead. Argue, if you will, that no employer would sack a man for being late under the circumstances, the important fact remains that work of tremendous national importance is held up and the nervous strain on the worker, anxious to get to work, perhaps losing money by arriving late, is seriously increased. Until such time as we can put our munition factories and workers' homes below ground, it would seem most unwise to suggest that the worker should live on the factory doorstep. The alternative is reliable, personal transport, which private motoring provides. Those who have scoffed at the enthusiast who rebuilds his own car should be made to realise that it is this person who can put into good condition the sort of baby car which was popular some fifteen years ago, and make it provide worry-free transport for two, three or even four persons with a minimum expenditure. The original "Chummy" Austin Seven can be seen giving grand service to workers engaged in fighting the enemy in our factories these troubled times. They can be pretty sure of getting to work and getting some sleep at nights, if they can get enough petrol for the daily journey. Alas, our arrangements do everything to discourage such praiseworthy immunity from transport worries. The tax absorbs some 5/- a week, insurance almost as much, and the latter is based on car condition. Then there is that stupid law which attempts to stop an owner sharing his car-expenses with fellow travellers. On a ten-mile-a-day journey, six days a week, which is what tens of thousands of workers make, an 8 h.p. car carrying four persons could be operated for rather less than 1/- per head, or less than 3/- a head all-in, per week. Why make such expense-sharing illegal? Other arguments come to mind, in favour of private transport. An arterial road was recently in use again after a bombing attack long before the railway in the vicinity was normal. The Editor of this paper, using an 8 h.p. car, could get to and from the Government job on which he is now engaged—after his driving services were turned down by the War Office and A.R.P. gave him no useful outlet—in under three hours for the two-way journey, at a cost of around 25/- a week on a weekly fuel allowance which would last a fighting aeroplane less than half-an-hour at cruising speed. And there are three spare seats in the car at the disposal of fellow travellers. The railway journey has been taking some three hours and costing over 16/- a week. The roads outside London are quite empty, and if half London's outer ring of workers tried to go home by car, would congestion be any worse than on the summer Sundays of yesterday?

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CARS I HAVE OWNED

[HERE IS ANOTHER ARTICLE OF THIS POPULAR SERIES, THIS TIME BY PETER CLARK, A TRULY VERSATILE AMATEUR, WELL KNOWN FOR HIS LE MANS SUCCESSES WITH THE H.R.G., HIS TRIALS EXPLOITS AND HIS INTEREST IN EDWARDIANS.—ED.]

MY first velocipede was a B.S.A. three-wheeler sports, chiefly notable in that it was bought (secondhand) from H. M. Bentley and Partners. It was not very fast, about 65 flat out, but had quite brisk acceleration. I think it was a good school in which to learn, for its brakes were none too good and the road-holding, if they were applied when cornering, absolutely non-existent. I ran out of road many times but escaped serious damage to machine or man. Perhaps my most vivid memory is of the crashing blow administered by the dashboard to the back of the hand whenever second gear was engaged.

You will remember that on these machines the chassis ends under the driver's seat, and the rear part of the car is held on by divine providence only. Thus when two or more passengers were carried on the prettily plated luggage grid, the body came out rather a different shape from what it was before. This necessitated abandoning the doors and strapping the tail with flat iron direct to the main scuttle pillars, a repair which was carried out by Mann Egerton's of Norwich in two hours amid protestations of injured professional coachbuilder's dignity.

Of course, I was very young in those days and insisted upon using Castrol "R." As a result, the B.S.A. was excessively difficult to start. After grinding the battery flat, one ground oneself flat on the handle and then went in search of a push gang. However, the car always had the last word by catching fire. This, coupled with the complete impossibility of knowing for certain whether one was travelling to or from work when negotiating the wet tramlines in the Commercial Road, E.1, led to my deciding to sell her. I was too long making up my mind, however, for one day while ascending Wrotham Hill under full sail she virtually disintegrated. This led to one of those expensive rebuilds free of charge under guarantee, seven and six for parts, and seven pounds ten for labour, but I was still determined to sell her and did so, thanks to the rebuild, for more than I paid originally. I did just on 10,000 miles in her, and apart from the snags enumerated (some of them my fault) she had her points: she used enormous quantities of oil, but did well over 40 m.p.g. on petrol and cruised nicely at 45 to 50. The tappets needed setting every two or three hundred miles. If any reader has her, she is OK 7575.

Next I had an old 1927 Morgan "Super-Aero," with the 1,100 c.c. J.A.P. engine. I chiefly remember it because in it I drove my mother to the Isle of Wight just after she had had an operation for what they used to describe on the packet (but no longer do, alas) as that "distressing and almost universal complaint." Poor woman! One or other (or both) of the silencers were for ever falling off, and this led to some altercations with the constabulary in Cowes High Street. Otherwise, she never gave one moment's trouble all the time I had her, and never had a rear wheel puncture. Of course, a Morgan is *terrific*: there is no other word for it and nothing quite like it. I never took mine over 75, but there seemed to be a good deal in hand: the handbrake worked on the front, one wheel or other, but never quite together, and the footbrake made a nice hissing noise behind. Absolutely instantaneous starting on the handle at off side rear, with valve lifter alongside. Many plug changes through forgetting to cut down the oil supply on entering a town—or the frantic driving faster and *faster* to keep both cylinders going when one nearly oiled. Truly a lovable car and full of personality—OY 100 (I think). The vendor bought her back and was quite glad to see her again.



Peter Clark in one of his many appearances on the track

Next came a M.G. Magna of the early "F" type, GX 717. She had, alack the days, a sleek-looking special body which shall be absolutely nameless. I spent a miserable first year with panels splitting and paint peeling, during which time nobody showed the slightest sympathy or interest except Mr. M.G., who was kindness itself. I mention this in marked contrast to some manufacturers, who simply wash their hands of you if you allow aliens to finger the mechanism. After a year I abandoned the contest and allowed her to split and rattle and rust—and enjoyed the "F" Magna for the jolly good car it was. Barring a Scintilla Vertex magneto, which was fitted for reliability but did improve the performance, I made no attempt to have this car specially tuned and contented myself with its normal maximum of a little over 70. Possibly as a result, I did over 48,000 miles on her without a rebore, and cannot ever remember being let down on the road. I believe efforts to go really fast led to difficulties with the cooling, among other things, on this particular model, but Guy Robins, later to be the "R" of H.R.G., put 84 miles into an M.C.C. "Hour Blind," so they had possibilities. Also, of course, the engine was almost identical with the contemporary Wolseley Hornet, a 1930 specimen of which, as the McEvoy Special, was timed at, I think, 97 m.p.h. in the hands of Guy Bochaton, unblown and with the normal four-seater body.

Perhaps I may digress here to mention a car which I did not own but which I did drive for at least half the 60,000 miles it covered in "the family." I refer to my father's 1930 Morris-Oxford saloon. This was the six-cylinder 16 h.p. side-valve model, known I believe as the type "LA," with four-door fabric body. I think it was a car somewhat ahead of its time, for the body had quite pleasing lines and was very light, giving the car a performance a good deal brisker than the 16 h.p. Austin and other comparable cars of the period. This Morris had a cruising speed nearest to maximum of any car I have driven: 60 m.p.h. was about the limit, but between 55 and 60 seemed the natural speed to hold all day long. She was unfortunately written *right off in a crash about 1936*, thus illustrating one of the disadvantages of fabric coachwork.

I was not, at this time, particularly interested in motoring sport, although I drove my M.G. up Alms Hill and up a watercourse in the Esterelles near Cannes, also I went to Brooklands occasionally with a blonde person who

CARS I HAVE OWNED—continued

was surprisingly unmoved when her "face" ran down her face in the rain. It was rather in this vein that I bought my next car, a 30 h.p. V8 Jensen-Ford—a great, big, slinky Anglo-Yank, I thought it was. Since then, of course, Jensens have forged ahead more and more on their own, and to-day they are motorcar makers in as full a sense as most firms in the business. They still use a proprietary engine, but so did Lea-Francis, Invicta, Frazer-Nash and Lagonda (before the V12) to name but a few famous names. There was a lot to be said for the original Ford-engined job. Its braking, steering and road-holding were terrific, wringing unstinted praise even from a confirmed Bentley enthusiast like Marcus Chambers. Mine had a Vertex magneto, and, with the standard axle ratio, would do its 90 any time. After negotiating the Col d'Allos and the Col d'Izoard (French Alps) in darkness and finding that on 6-volts the twin 36-watt stoplights virtually extinguished the headlights on every downhill hairpin bend, I had her converted to 12-volt (constant voltage system) by Scintilla, an expensive alternative, you may say, to chucking the stoplights into the nearest ravine. I am a confirmed Scintilla fan, and do most sincerely congratulate them upon showing a degree of civility and interest in out-of-the-ordinary private enquiries which is almost unique in the motor trade.

In 1936, when my Jensen had done nearly 30,000 miles, I took her on the J.C.C. Canadian-American Rally. We had no trouble really, except when, after driving absolutely flat for some hours towards Toronto I had a flap at suddenly losing all oil pressure. I feared the worst, for all the oil over there seems to be about viscosity 2, and we had been using about half a gallon in 100 miles. It was only the lead fallen off the electrical potentiometer which serves as a pressure gauge. Later, in the States, some palooka (infectious language, theirs!) swiped my gasoline and cunningly nipped the gauge pipeline, so that I, never suspecting petrol shortage since the gauge showed eight gallons and had always like all Ford instruments been pretty accurate, half dismantled the car before I found out.

That Rally got me bitten with the sporting bug, and from then on I was never out of it. In an M.C.C. "Edinburgh" I fell in with Marcus Chambers driving the Windrum and Gerstin Special 4½-litre Bentley, and Anthony Heal with his now famous "30/98" Vauxhall and others. By mid-winter the Jensen had taken a terrific bashing in every conceivable trial in the country, and I began to realise that for 100 per cent. participation in trials, as opposed to just the occasional M.C.C. event, it is very desirable to have a separate car which "doesn't matter." This led to my first attempt at building a car and my first experience of the motor trade term "needs completion." For a very modest fee I bought an Alvis "12/50" to which this description most certainly applied, and it took several months, working perhaps two hours a day in the evening, to get her on the road. The chassis and body were very early "12/50," the tail being of the old upswept point variety with spare wheel beneath it, and the engine was from a saloon some years younger. Petrol was drawn by an Autopulse from an Austin Seven tank in (on) the dickey seat. Ignition was by Bosch magneto, an excellent device except that it did not fit the platform very well and was excessively difficult to line up accurately. Thus I had almost a running contract with Messrs. Sports Spares for the fibre vernier couplings! Nothing whatever was done to the engine except to tighten up a few external loosenesses, and it is a great tribute to Mr. Alvis and to my good fortune that she covered nearly 10,000 miles, almost entirely in trials, with no major troubles at all. The oil pressure never exceeded 4 lbs. per square inch with castor oil, and was nil with any other. The handbrake would lock the back wheels, but the footbrake didn't do very much really, owing to the amazing contortions through which the front springs hurled themselves at the slightest provocation.

As you will have gathered, I was full of enthusiasm, but still woefully ignorant of what is really needed in a trials car. You see, given a little dexterity at the wheel, the Jensen could be hurled up pretty nearly anywhere by sheer brute force and adjectival ignorance. Thus my Alvis was not a very well planned trials car, being far too light at the back, and far too long in the wheelbase. Nevertheless, it got up some difficult hills even though it failed on many easy ones, and was good experience. It would do its 70 on the flat, used virtually no oil, and about 30 m.p.g on petrol. I hope the present owner of GT 2202 has retained all her good points and cleaned up the many rough spots.

Talking of weight at the back reminds me that I used to put 3 cwt. in the back locker of the Jensen for trials, thinking the floor was corrugated metal, which it appeared to be. Later, when I inadvertently put my finger through it, I found it was only 3-ply gone crinkly owing to being rained on. Apparently the petrol tank below was pretty strong, however. At 45,000 miles my Jensen went to Alan Whiddington, who changed the engine at 50,000 and then did at least another 50,000 before selling her quite recently. Perhaps the fact that she did 100,000 miles in five years and at the end was still a darned fine car lends colour to my assertion that there was a "good deal to be said" for Mr. Jensen's first effort. Alan fitted a high axle ratio and tuned the engine somewhat, for in addition to trials and rallies he raced her not unsuccessfully at Brooklands and I believe put in some lappery at over 100 m.p.h. If any reader has her (BYU 951) I hope he will not (a) remove the radiator, otherwise the war will be over before he gets it back, or (b) try to stop the funny little sympathetic chatter on the gear lever.

Next came my Meadows-H.R.G., on which, after some months of trials, I graduated to speed trials and then, via club meetings, to a little of the genuine thing. An H.R.G. is a terrific trials car, as the results achieved by Michael Lawson surely prove: he is, for example, one of the few people who have got a four-wheeled machine up that Gloucestershire impossibility, Breakheart. That the collective results were not more consistently successful is due, not to the cars, but to the human element. The team was rarely of the same composition twice running, and all of them were amateurs: Anthony Curtis, for example, is managing director of H.R.G.'s, but as a driver, just an enthusiastic amateur like myself. Thus it was, perhaps, that on the '38 Colmore, for example, with Louise Redfern, Curtis and myself, we all drove abominably and could get up nothing: yet on another occasion, the Sunbeam trial on War Office ground, with Louise, Ken Farley and myself, everything went marvellously, and we all sailed up Red Road as if it were a pimple.

While my H.R.G. was being prepared for its first Le Mans, I joined the ranks of Fiat "Mouse" owners, and covered 15,000 pleasant miles with no major troubles and not even a decoke. My specimen did some but not all of the funny things they are alleged to do: the gear lever fell off once, and the clutch thrust race made nasty noises but never actually burst. What I do think is so remarkable about Fiats, and many other Continental cars, is that the defects, if any, are promptly and invariably rectified in subsequent batches, without necessarily waiting for a new "model" to be due. The vane-type oil pump of the '37 Mice was replaced by a gear pump on the '38's: the clutch has undergone several progressive stages of improvement, and so on. I have just been rebuilding a very early 1937 model, with nearly 40,000 miles to its credit, and have been able to incorporate almost all of the subsequent improvements. I shall be using this next winter, if we are spared, when the H.R.G. is at last given a rest after many, many miles on puddle petrol.

My 3-litre trials Bentley you know something about, from the description in the December, 1938, MOTOR SPORT. She began as a joke, when my wife insisted upon resuming trials for the 1938-39 season: Marcus Chambers and I talked it over, got really interested, and decided to apply all our joint knowledge with a view to making a real job of it. I do not for one instant regret that the cost rather ran away from what was originally visualised, for the car is a delight and, when I really learn how to handle it, capable of surprising results in trials work. Of course, the handicap of its considerable weight and bulk cannot ever be entirely overcome.

That is about the lot. They say one's sports-car education is not complete until one has owned a Bentley and a Bugatti. I have not done the latter but hope to, and should also dearly love one of the original, modern-series Delahayes, like Walker's car which he and Ian Connell drove at Le Mans in '39. As for racing cars, my education has not begun at all, and I only hope I shall not be too old as well as too poor to start this "afterwards."

RADIOGRAPHY IN RACING

[The failure of a racing engine is invariably an expensive business and any means that can be taken to negative such a happening are worthy of close study. Mention has recently be made in MOTOR SPORT of Crack-Testing apparatus, which was used in Prince Chula's stable, and by Peter Clark during the resurrection of the 1914 Mercedes. In this article a metallurgical expert outlines the possibilities of Radiographical Inspection in connection with the racing-car. Radiography has the advantages over other material-testing methods that parts can be tested in the rough state before machining, that the test is very thorough, and that the part being tested is not destroyed in the process, so that it can be used if desired, no matter what its condition. A friend who got this article written for us jokingly suggests that if every racing-car designer was sufficiently conscientious with his margins of safety and if he constantly resorted to radiographical inspection, pit work in the longest races would reduce itself merely to a matter of refuelling and wheel-changing. In fact, cars might well become so fast by grace of X-rays that the drivers, too, would need X-raying—in hospital ! Apart from that, radiography should be an invaluable means of pre-race inspection in the future and the big stables and more ambitious amateurs might well consider its installation or utilisation.—Ed.]

EVER-INCREASING demands of the Aircraft Industry for materials of higher performance characteristics and lower weight have resulted in much research being carried out in three directions : first, in the development of improved aluminium and magnesium alloys ; secondly, in the technique of casting these alloys so that the excess metal in built-up parts as well as the labour and time of assembly involved may be eliminated ; thirdly, in Radiological inspection, to ensure that only perfect castings are passed out.

These demands are echoed by those whose business it is to design racing cars, and the results of these researches are likely to be applied in this direction after the cessation of hostilities. It is the aim of this article to describe briefly one of these lines of development, namely, Radiological methods of testing.

Light alloys have already been used for cylinder blocks, crankcases, pistons, connecting rods, cylinder heads, brake drums and body work, etc., etc., and it is lik ly that they will be employed much more extensively, particularly for highly stressed components, when their complete reliability is assured by Radiological examination.

The justification for this method of testing lies in the fact that all metals, but particularly the light alloys, are difficult to cast satisfactorily. Without showing any visible evidence of trouble they may lose up to 95 per cent. of their strength and fail in service through internal blowholes, porosity cracks, cold shuts, shrinkage, or inclusions. It is the aim of Radiological inspection to eliminate faulty castings, and, by revealing the hidden source of trouble, to assist the foundry in the production of better castings before damage is done by the failure of some vital part.

In this connection, it is interesting to recall the experience of Prince Chula of Thailand, as recounted in the July issue of MOTOR SPORT. He points out that he " had countless failures in the first three years of racing " due to unreliability. Even after the appointment of his expert mechanic Stanley Holgate, he still had four retirements in sixteen races due to faulty material but, after adding a crack-tester to his equipment, he went through the 1939 season without a single retirement and " Bira " was never once placed lower than third. Radiography can do what crack-testing machines do more thoroughly and without the necessity for destroying faultless parts in testing.

Before dealing with the subject-matter proper, it will be as well to review briefly what X-rays are and how they are produced. X-rays are of the same nature as light but they have a very much higher frequency, which enables them to penetrate metals and many other substances in much the same way that light penetrates glass. Broadly speaking, the lower the density of the metal, the more easily it is penetrated. Being of the same nature, X-rays affect photographic film in much the same way as light although, in actual practice, films are specially designed for the job.

An X-ray tube consists essentially of a rod known as the cathode, in the end of which is mounted a small spiral filament, and another rod known as the anode, generally of solid copper fitted at the end with a tungsten button, both rods being mounted an inch or so apart in a highly evacuated glass tube.

A current of the order of 240 v., 2-20 ma. is passed through the cathode filament, causing a stream of electrons to flow towards the anode. When a voltage of the order of 100,000 to 500,000 is applied to the anode, the electrons are attracted to the anode with terrific force. It is this bombardment of the tungsten button in the anode by the stream of electrons which causes the production of X-rays, which pass out of the tube at right angles to its axis.

The larger the filament current, the greater the number of electrons produced and, therefore, the greater the quantity of X-rays evolved. Raising the anode potential, on the other hand, increases the penetrating power of the rays or, as is generally said in X-ray parlance, the rays become harder.

Efficient means for cooling the tube have to be introduced. In the smaller tubes, this is done by drawing a strong current of dust-free air past the ends of the electrodes. Water is used in the larger outfits and may either run through continuously, or else travel in a closed circuit, being itself cooled in a condenser cooled by the main supply.

Radiological inspection resolves itself into four distinct operations—hand-picking, screening, radiography, and fracture.

SCREENING

In screening, X-rays are allowed to pass through the casting on to a fluorescent screen which lights up with a shadowgraph of the casting, in which gross defects show as light or dark patches.

RADIOGRAPHY

Radiography, in which the fluorescent screen is replaced by a special photographic film, is essential to detect the finer sources of trouble, in particular, porosity, which may result in the loss of up to 50 per cent. strength. Except in the developing process, radiographical operations do not need to be conducted in the dark, since the film may be wrapped in light-proof paper or placed in aluminium containers through which the X-rays will pass unchanged. Development is substantially the same as for photographic negative ; positives are unnecessary.

The relation between time of exposure and voltage and current employed is important. The higher the voltage and current the lower the time of exposure ; the finer porosity tends to be lost if the voltage is too high. Exposures of the order of 30 seconds to 5 minutes are common.

Continued exposure to X-rays, either direct from the tube or reflected from the floor, walls or ceiling, is very dangerous to operators and may result in severe skin diseases or acute anæmia. To prevent this, the apparatus is generally placed in a small room lined with sheet lead to absorb the scattered rays and the controls are placed outside the room so that the operator is well away from the tube while the current is on.

Exposure of the body to X-rays results first of all in a change in the relative number of red blood corpuscles and white corpuscles or leucocytes. In a normal healthy person this relation is constant and varies very little from one person to another. Consequently, since it can readily be determined by a simple blood count, X-ray operators generally submit to this test at a hospital every three months or so. In modern well-designed laboratories, the danger of working with these rays is negligible.

HAND PICKING

Hand picking involves inspecting castings for signs of possible trouble which require further particular examination by X-rays. The importance of hand picking cannot be over-estimated. With experience it is possible to recognise obscure markings which are sometimes associated with certain troubles, and X-ray examination confirms or negatives this. When dealing with a large number of relatively unimportant castings, it is frequently sufficient to examine those

RADIOGRAPHY IN RACING—continued

selected on hand picking and, if these are satisfactory, to pass the batch without further examination.

FRACTURE TEST

The fracture test, which is carried out on only a small percentage of the castings, shows whether or not the grain structure is satisfactory. Furthermore, porosity reveals itself by a dark coloration and the fracture test is often used to supplement the radiological examination when complete freedom from porosity is important.

WIDER APPLICATIONS

So far we have only mentioned castings, but the method is equally applicable to the examination of all forms of material. It has up to now been applied principally to castings, since these are, after all, the basis of all forms of metal. Sheet, for example, is rolled from a cast-billet and wrought products all start as castings.

It also gives a valuable indication as to the efficiency of welded joints. Porosity, blow holes and entrapped welding flux show up well on the radiograph, and this method of testing is proving an invaluable aid in the development of welding technique. Readers who are interested in this aspect of the subject should consult the Transactions of the English and American Institutes of Welding for further details.

Equally so, radiological testing is not confined to the light alloys of aluminium and magnesium, although these are the easiest to deal with. Roughly speaking, a 100 kv. X-ray outfit is sufficient when dealing with magnesium alloys and will penetrate about 3 inches of this metal. Aluminium more than 1 inch thick is best examined on a 150 kv. set, while thick sections in the high tensile steels may require as much as 500 kv.

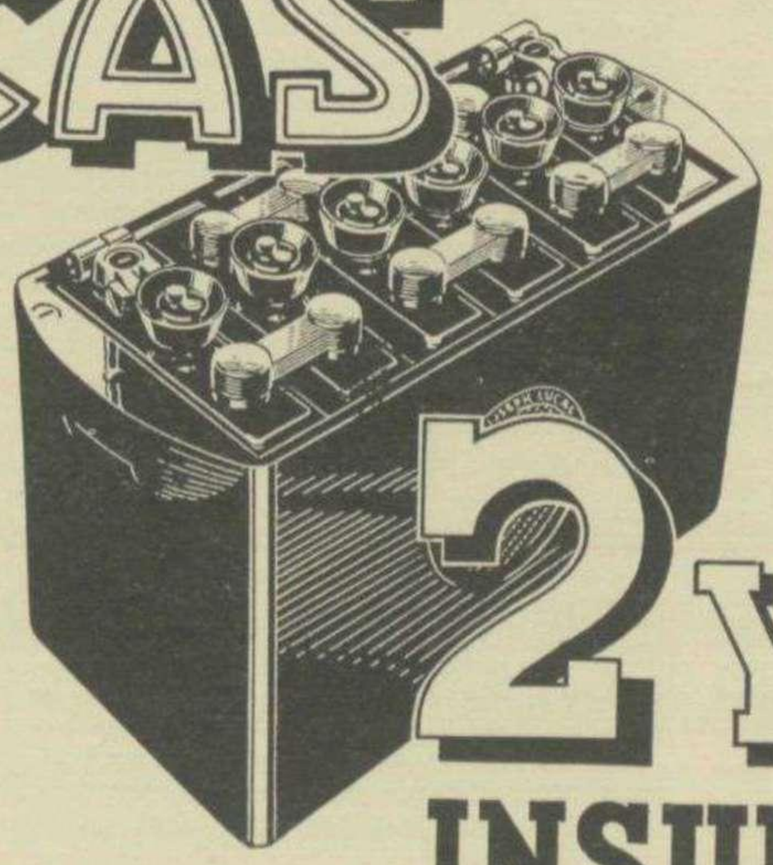
Nevertheless, all these outfits are now on the market complete with simple transformers for connection to the ordinary A.C. lighting circuit. The 100 kv. outfits are generally air cooled, but the larger sets require a steady flow of cooling water circulating by means of a small pump integral with the apparatus. If the cooling water fails, a warning light shows and the current is automatically cut off.

When using the higher voltages, additional precautions have to be taken against scatter. It has already been mentioned that X-ray films are used in paper wrappers or aluminium containers. Now, when X-rays strike the side of the casting, other rays of less penetrating power are given off. In the case of the lower voltages, the penetration of these secondary rays is slight and they do no harm, but when high voltages are employed, the secondary rays are able to penetrate the wrapping and cause fogging of the film. To prevent this, the sides of the casting are packed with some material which absorbs the rays. One method is to place the casting in a box and pack it round with lead shot. Another and generally more convenient method is to pack with plasticine containing powdered tungsten.

All these methods of inspection are now in actual use in the aircraft industry, and without them it would be impossible to produce warplanes with such a high power-weight ratio and yet complete reliability under all conditions. In fact, it is probably true to say that the superiority of the R.A.F. over the German Air Force is in no small measure due to this method of test, since radiological inspection is by no means so highly developed in Germany.

If X-rays can do this for the aeroplane is it not probable that they can do as much for racing-cars?

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Club News

DUBLIN UNIVERSITY M.C.

The Sport isn't entirely dead in the British Isles—indeed, as we write this the boys of the R.A.F. are having quite a bit of sport overhead. And apart from that, the Dublin University Club held a hill-climb at Kitterman not long ago. W. A. McQuillan, driving a special Ford V8, former record holder, made fastest time in 44.04 secs. S. Martin's 2-litre Bugatti was runner-up and G. P. Colbey's Frazer-Nash was third. A. Thompson's T.R.S. climbed in 43.42 secs., but was too late in arriving to be counted. P. D. Gill's 847 c.c. M.G. took the 1½-litre handicap class and D. O'B. Gill, also with an 847 c.c. M.G., was second. These two were placed the same in the unlimited handicap class for the Walter Johnston Cup, with the T.R.S. third, a Morgan 4/4 being third in the 1½-litre class. The motorcycle hill record fell by one second, but A. P. McArthur's record of 42.08 with his M.G. was not touched.

SPRINT HANDICAPS

It seems that handicap classes in sprint events could do much to increase entries, as so many enthusiasts wish to have a crack at speed contests, which are great fun and invaluable practice, but a bit depressing if you never get a place. The idea has been used at Lewes and Prescott and might well be more widely applied "afterwards."

VINTAGE S.C.C.

Although the Vintage S.C.C. decided to be dormant for the duration, it is pleasing to learn that the Northern Section held a successful social meeting at the end of July, extending from noon until "closing time." The forerunner of others, we hope.

VETERAN M.C.C. OF AMERICA

The July "Bulletin" of the Veteran Motor Car Club of America has reached us through the good offices of A. S. Heal. It is rather startling to realise that at their Southborough meeting various contests were held, rather of a gymkhana character, which involved sudden changes of direction, which one would have thought detrimental to the continued functioning of veteran transmission, tyres and brakes. Apparently the competing cars stood up quite satisfactorily. The first event was the "Teeter Contest," in which cars had to be driven on to a see-saw and balanced. The sliding-gear class was won by Oliver's Stutz, with Rand second in Mimi Durant's 1914 Packard and Jacobs third in a two-cylinder Renault. The class for epicyclic, friction-drive and steam cars was won by Chayne, Buick's chief engineer, in a Buick, with Monseau second with a Stanley Steamer and Bennett third in a model-F Ford. The sandbag and tray race was won by Fales in a Renaultette, assisted by Mrs. Fales. Fisher and Roe were second in a 1905 Ford, and Robertson and Paradise third in a Renault. An acceleration contest followed, in which Oliver clocked 33.2 secs. for the "Y" course and Libaire's "22/72" Mercer 33.8 secs. Leathers's Mercédès was third and Cadwell's Fiat accelerated imposingly, but lost time selecting reverse. A ring-spearing race came next, won by Monseau's Stanley steamer with the Rev. Ellis as spearsman. Pierce and Curtis in a Chase truck were second, and Frye and Bradley in a Simplex, third. A timed hill climb up an old-time tarred road followed. Class A saw no runners, but class B was won by a big 1904 Panhard, in 57.4 secs., the Buick second in 63.2 secs. Class C, in which two compulsory stops had to be made, went to Ulmann's 1909 Mercédès in 54.4 secs., with the Hadley-Rand 1910 Mercédès second. The record was taken by Oliver's Stutz, in 47.8 secs., with the Durant's Packard runner-up. Weaver won the Vintage class with a Type 49 Bugatti in 49.2 secs., including two compulsory stops, with Libaire's "22/72" Mercer second. Dean Fales ("30/98" Vauxhall) and John Leathers (1908 G.P. Mercédès) concluded a fine day's sport with demonstration non-stop ascents. A 1908 Mercédès, 1914 Packard, 1909 Mercédès, 1922 Mercer, 1910 Mercédès and a 1914 Stutz, accompanied by a more modern M.G., were driven from New York and back for this meeting, a distance of 500 miles—about twice what our vintagents have to do to reach Shelsley Walsh, for example. A slight collision and a fine for speeding were the only incidents, and the average over 250 miles on the run home seems likely to have been higher than 30 m.p.h.

A dinner was held at the Hotel Duane, New York, in April, and a run from New York to Yorktown Heights was held in May; try to imagine veterans amongst the sleek New York traffic! The 1922 Mercer, the 1914 Stutz, 1909 Mercédès, 1910 Mercédès, 1912 Mercédès limousine, the Packard, and a 1912 White took part. The White burst a 37″ × 5″ cover at the destination and had to be left behind, but the others returned without trouble. In a quick-starting and driving contest held after luncheon, the Mercer clocked 51 secs., the Stutz 51.8 secs., and the Rand and Ulmann Mercs. 56 secs. each. This "Bulletin" is nicely produced, with several illustrations and some astonishing "swap columns" ("30/98" for farm, farm to be in as good order as the Vauxhall!) It contains a history of Ford, with pictures of the frontal aspects of nine Ford types, from the model-A of 1904 to the model-T of 1916-26, and a reproduction of a 1905 Ford advertisement, also some period jokes. Cecil Clutton's list of big pre-1914 racing-cars known to exist in this country is published, and comprises the Shuttleworth de Dietrich, Blake Napier, Mills Renault, Clutton Itala, Heal Fiat, Nash Lorraine and Morris Benz. We think Clutton has got some of the vintages wrong; surely the de Dietrich should be 1903, not 1901, and the G.B. Napier 1903, not 1902? America responds with 1911 ex-G.P. Savannah Fiat, 1908 G.P. Mercédès, 1907 Renault 42, 1909 Isotta-Fraschini, 1908 Burman-Buick, 1906 ex-Vanderbilt Locomobile and 1906 Napier. A spare body, said to have come from the 1912 G.P. Delage, is for disposal. It is splendid to read of the American veteran activities and our keener followers of the cult in this country might well apply for membership as associates. The Veteran C.C. of America, 510, Sears Bldg., Boston, Mass.

FT. WAYNE STOCK CAR RACE

Fifteen thousand people are said to have attended a 200 mile Stock Car Race at Ft. Wayne, at the end of July. Late-model, closed stock cars ran, and Bill France (Buick) won in 3 hrs. 35 mins. 45 secs., at 56 m.p.h. for 320 laps of the ⅝th mile track—was he giddy? Twenty-five started and fourteen finished, second place going to Chet Waller (1939 Ford) and third place to Fred Wingate (1940 Mercury). It is said that the race will be an annual fixture.

750 CLUB

The 750 Club is one of the very few clubs to hold war-time meetings attended by members with their cars. At the August meeting at Coulsdon there was a quite excellent air display, which had *not* been announced as part of the programme! The secretary and his lady arrived on bicycles, but several Austins were present, and also a very fine Frazer-Nash of the Meadows-engined stark variety. A most pleasant tea was enjoyed in spite of the proximity of military "objectives." We expect this ambitious club to go right ahead after the war.

WE HEAR

We hear that Sam Clutton is car-less at present, but, apart from doing much restorative work amongst his veterans, is having a very fine 3.3-litre Type 49 Bugatti saloon put into good order in anticipation of some rapid motoring after the war. Short has made a beautiful job of grinding the camshaft. Clutton tells us that these cars suffered power-loss due to exhaust back-pressure and he plans a re-designed silencer system and may possibly apply low-pressure supercharging.

CLUB NEWS—continued

John Ogle, who used to run a very potent Brescia Bugatti in sprint events, is now at the Royal Aircraft Establishment at Farnborough on technical work not unrelated to aero-engine research; Boddy also spends his daylight hours there. Whincop is flying for British Airways in Lockheed "14s" in West Africa. Mrs. Whincop (née Miss "Abdul" Strain) has in her care his Type 55 Bugatti, Type 43 Bugatti, a Fiat 500 and her sports Austin Seven. She wants to dispose of the Austin, and would like to exchange the Type 55 Bugatti for a Type 51.

Another issue of "Bugantics" is said to be coming along. Stuart Wilton wishes to exchange his late-type 3-litre Bentley, a Fiat 500, and a racing Q-type M.G. with lots of spares, for a modern 10 h.p. drophead coupé in thoroughly sound order. Barry Woodall is in the R.A. and Tony Birch, who was manager to Seaman, is in the R.A.F. A very interesting Frazer-Nash with a low Talbot radiator is in use by a reader who is in the Royal Tank Regiment, a Lancia "Lambda" two-seater is seen in South London driven, sometimes with cut-out open, by its soldier owner, and a British Airways pilot is running the ex-Rothschild Type 55 Bugatti, while we saw the ex-Col. Giles's Type 57 Bugatti "Teresi" on the road recently.

Michael Lawson is offering for sale the white Meadows-H.R.G. with which he did so well in trials. Another "Brooklands"-bodied Austin Seven, and a 1913-14 V-twin Humberette, the latter in use up to about 1929, after which it was stored, are at a breaker's yard in Isleworth. Eric Giles is using a 5-litre Bugatti saloon for towing an A.F.S. trailer pump, and this car was bought for the job very cheaply indeed. Walter Norton has announced his keenness to start a mobile unit of the Home Guard, formed of private motorists. We have heard of several instances of car owners narrowly escaping injury when their cars have hit or have been hit by debris resulting from enemy bombing—so take heed of the sirens unless on an urgent journey. Smart—a pretty girl of the W.R.A.F. in a Fiat "Mouse" of a suitable blue to match her uniform seen in South Farnborough recently. A reader, N. A. Jenkins, is still running his very well-preserved 1927 DIS Delage.

GENERAL NOTES

This motoring, even when of a humble nature, is not an easy thing to dispense with, and although the Austin was laid up for a time and no demands made on the basic or supplementary fuel supplies, it had hastily to be re-taxed when a Government appointment made it desirable to have at hand a ready means of transport between London and "somewhere in Hants." Some time before this, the 750 Club meeting was attended in a friend's Riley, which, leaving just as the "all-clear" sounded after a daylight raid on Croydon Aerodrome, took us right into the damaged area, though very evidently nothing too serious had happened, and apparently nothing at all to the aerodrome. Returning in the half-light that evening, with everyone seemingly thinking of taking cover and depressing rain clouds terminating the day, the war made one shiver, but it must be emphasised that since then, after very much grimmer happenings, one has become entirely perky again, and so has nearly everyone else, not least those whose homes have been more front-line than most. Taxing the car and getting the basic supply of petrol for it these days involves the Londoner in much awkward travel, at any rate if the job has to be done at short notice, but we completed negotiations successfully, in spite of arriving at the licensing premises in the midst of an air raid through which a Bristol "Bombay" transport flew both low and fast, presumably for home! It was in the middle of a raid that we left for Guildford to hear C. G. Grey, former editor of "The Aeroplane," address the Heararks Club. His address was brief but well worth listening to, and we appreciated being admitted to a meeting which, strictly speaking, is confined to members of the Observer Corps. Incidentally, Guildford seemed to have as many cars in its steep main street on this sunny afternoon as ever, and have you noticed how sports-cars continue to appear all over the place? It is most encouraging. At the station, after getting the licence for the car, a very smart M.G. Midget driven by a gentleman in shorts occupied the yard, and just before leaving for Guildford the next day a reader, now in the Royal Tank Corps, stopped for fuel at our local garage with a very impressive Frazer-Nash, the small Talbot radiator of which concealed its immediate identity. And as we put the car away that night, after a run down to Godstone, when the crew absolutely refused to be worried by repeated "warnings" and "all clears"—this was before the London A.A. barrage and wide-spread bombing, and admittedly was still foolhardy—we came upon a soldier putting away a Lancia "Lambda" with the rare two-seater body; he apologised for its noisy exhaust, admitting the cut-out to be open. These are mere isolated instances which prove that sports motoring goes on, even in "devastated" London. On the next two days, business journeys of some eighty miles a day were necessary and it was indeed good to have a longish run with a definite objective to make once again, and to be able to offer some assistance in the matter of transport to one's fellow countrymen. The roads out of London are certainly noticeably deserted in the early hours, if more busy at around office-closing time. Cars go fast, each one seemingly in earnest employment, and one encounters the same persons at practically the same point each day—in our case, a Riley "Sprite" or "Imp" driven fast by a leather-coated sportsman is a case in point. Once, coasting down the Guildford By-pass to conserve the precious fuel, a "30/98" Vauxhall, Anthony Heal's unless I am much mistaken, thundered past, quite drowning the sirens which had just commenced to wail.

There was a Sunday respite from being bombed when we went to a destination right in the country not far from Eastbourne and had a very pleasant tea with real butter on our scones on the way, coming home cross-country in a raid to visit a friend, in spite of a broken rear spring that was locking a brake on, finally to run into London with the searchlights, Ack-Ack and bombs going at a great pace. On various days thereafter the car proved a boon, and being an Austin, its broken spring was replaced at a very reasonable charge, entirely while we worked.

On one occasion there was even a sort of impromptu trials hill to climb, when traffic was hurriedly diverted from an arterial road during a spot of bomb dropping. Even in a purely utility car on business errands there is very sound enjoyment still to be had, and quite a lot of folk whose occupations take them far afield in fast cars must find the motoring involved a most welcome respite from present troubles. Yet motoring has never been properly encouraged in this country and ordinary drivers get in the most horrible dithers over operating their vehicles. The enthusiast has reason to bless his especial outlook on life no less than his valuable experience of out-of-the-ordinary motoring. Good luck to us all!

ENTHUSIASTS IN THE SERVICES

We have received the names of some more readers willing to entertain fellow enthusiasts in the Services. Their letters will be found in this issue, and lonely Service personnel might like to get in touch with them:—

DAVID L. GANDHI,
134, Heaton Moor Road,
Heaton Moor,
Nr. Stockport.

G. H. G. BURTON,
"Penybryn," Whittington,
Nr. Oswestry, Shropshire.
(Whittington Castle 53)

VETERAN TYPES—XXII

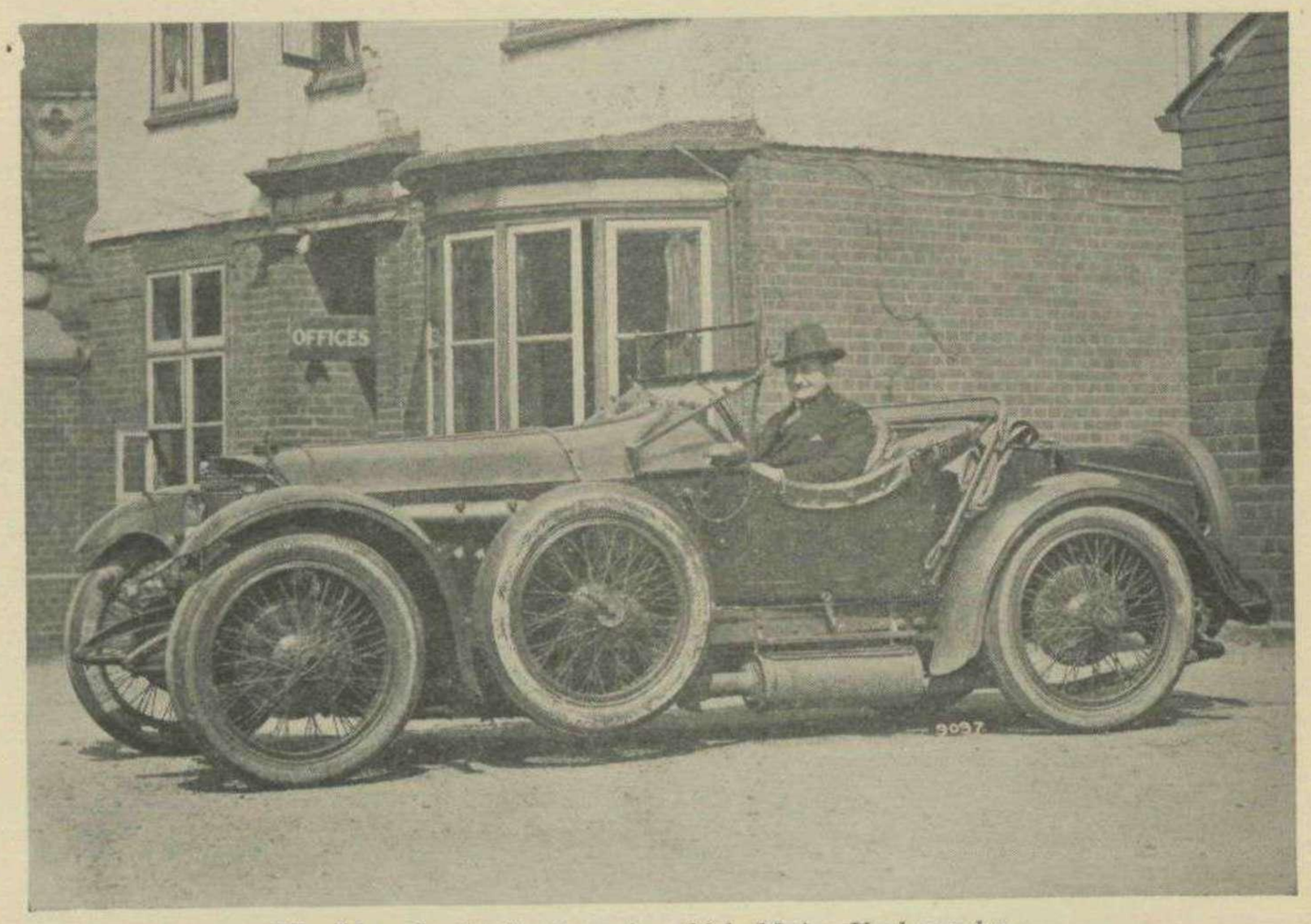
A 1914 GRAND PRIX MERCEDES

THE 1914 French Grand Prix at Lyons was one of the most dramatic motor races in history, as was, perhaps, befitting for the last classic contest before the outbreak of the world war. The 1912 and 1913 contests had been victories for the House of Peugeot, the winner on both occasions being the great Georges Boillot. Peugeot was naturally very anxious to win for the third time in succession, and for the 1914 race they entered a team of 4½-litre twin o.h.c. cars, possessing streamline tails and four-wheel brakes.

Mercédès, who had last won in 1908, were also determined to win the French classic. As soon as the course was announced, much surreptitious practice was put in, and four and six-cylinder engines were compared. Before the race, at a trade luncheon given at the Trocadero by the British branch of the Stuttgart Company, a German director is said to have solemnly announced that his board had decided, for publicity purposes, to win the forthcoming Grand Prix . . . . ! The cars used were four-cylinder 4½-litres. driven by Lautenschlager, Wagner, Salzer, Sailer and Pilette.

It seems that actually six cars were driven across Europe to Lyons, accompanied by a seventh chassis, from which spares could be taken. The choice of fifth car was apparently made at the last moment, as it was weighed in without racing numbers and with its registration numbers still in place. The subject of this article was, in fact, that fifth car, and, as it happened, No. 5 Mercédès. It was given No. 41, and was driven by Pilette. Lautenschlager's race number was 28, Wagner's No. 40, Salzer's No. 39, and Sailer's No. 14. Apart from their very thorough preparation, Mercédès were extremely efficient over their pit work, and they used Sailer's fast car as a pacemaker to attempt to break up the Peugeots. It is now a matter of history that Sailer went into the lead for six laps, when, with a lead of 3 mins., a connecting-rod broke and the car retired. Pilette's car had retired on the fourth lap, but Lautenschlager, Wagner and Salzer went on to finish first, second and third. Boillot's Peugeot, making up in braking what Mercédès gained in speed and acceleration, put up a magnificent battle until it retired on the last lap with a broken propeller shaft. Lautenschlager averaged 65.35 m.p.h. for the 467 miles. The three white cars finished in a hushed silence, broken by the "Marseillaise" as Jules Goux's Peugeot came over the line in fourth place.

Further drama was lent to the race because when one of the Mercédès was taken to the Rolls-Royce works after the outbreak of war and stripped, it was found to have much in common with the six-cylinder Mercédès aero-engines. The subsequent Rolls-Royce "Hawk" aero-motor was largely based on the Mercédès racing-car unit—it has even been rumoured that after the Armistice a royalty was paid to Mercédès on all the "Hawk" motors we produced. W. O. Bentley, too, based the design of the 3-litre Bentley on this engine. To revert to the Grand Prix, many contradictory stories have circulated concerning the ultimate fate of the 1914 Mercédès cars, and even now the position is confused. It appears that after the race Mercédès painted the number of Lautenschlager's winning car on all the cars and sent one to each of their foreign agents for advertising purposes—which discounts the romantic legend that war came at once and saw Herr Neubauer and all the personnel sportingly sent back home in a plain van, whilst an enterprising French motor dealer waylaid the cars and sold them all at enormous profit by presenting every one as Lautenschlager's winning car! In sober fact, it is believed that the car that went to the factory museum at Unterturkeim was Lautenschlager's No. 2. In 1915 Ralph de Palma won the Indianapolis 500 Mile Race with one of these cars, at 90.4 m.p.h., and this was probably the car which Wagner drove in the Grand Prix, No. 4. The car which finished third in Salzer's hands, No. 3, is believed to have been bought in France or Belgium by Count Zborowski and brought by him to England, where he raced it with considerable success at Brooklands. Pilette, incidentally, was the Belgian Mercédès agent, and it is interesting that it was not No. 5, which he drove, which subsequently went back to his showroom. There is also an engine from one of the 1914 cars in the Mercédès museum, and if we decide that this came from the chassis which accompanied the team to Lyons in case spares were required, we still have Sailer's and Pilette's cars to account for, as well as "No. 6." Masetti bought a complete car, modernised it, and with it won the 1922 Targa Florio at 39.2 m.p.h. If we assume that he would prefer Sailer's car to the less well-known "No. 6" this settles the fate of No. 1. Possibly No. 6 was the car which Rosenberger, who of recent times was Dr. Porsche's business manager, drove many years after the war, with some modifications incorporated. On the other hand, Rosenberger's car looked so like Masetti's 1922 Targa Florio winner as to suggest that it might be one and the same.



The Mercedes in the form in which Major Veal ran her

It remains only to trace the post-race history of Pilette's No. 5, which is now being restored to its original condition by Peter Clark and with which this article is concerned. The cars were started in pairs, except No. 41, which, being an odd number, was alone—and last. However, it was sixth by the end of the first lap, putting in the second fastest lap of the team; Sailer's was the fastest, and in the lead. In the race it retired after four laps, due to "an accident," although some reports speak of a broken propeller-shaft. However, when the present owner took down the engine, he found that No. 4 cylinder was .005" oversize and marked "No. 6" yet had a normal piston. This suggests that the retirement was due to engine trouble and that a cylinder from the spares-car was hastily put in place to enable the racing car to get home. Afterwards, the car came to

VETERAN TYPES: A **1914** *GRAND PRIX MERCEDES—continued*

England for display and Major R. M. S. Veal paid a deposit with a view to buying it outright. He lost his deposit with the outbreak of war, when Rolls-Royce persuaded the Government to let them borrow the car for technical research. It is very interesting that Straker-Squire after the war produced a six-cylinder car the engine of which bore a close resemblance to the G.P. Mercédès engine, but this is explained by the fact that Straker-Squire built Rolls-Royce "Hawk" aero-motors during hostilities.

Early in 1919 a Mr. Harrison shipped this Mercédès to America. It has been rumoured that it ran at Indianapolis, but no Mercédès ran that year, so this is complete nonsense. She now became a touring-equipped car. Difficult starting was partially cured by setting the Bosch people of New York to fit a huge starter. They put a dynamo below the driver's seat and drove it by chain from a split sprocket between the clutch and gear-box and stowed two wedge-shaped 6 volt batteries below the fuel tank on each side of the prop. shaft. Starting still proved very troublesome and the car usually had to be towed in top gear at about 40 m.p.h. before any response was obtained. This was attributed to the racing overlap, and about 1922 the Mercédès was shipped back to England so that a touring camshaft could be obtained from Germany and fitted. Just why the car never returned to the States no one seems to know, although some highly scurrilous rumours have been circulated. Until 1925 a dust sheet at Hooper's, the coachbuilders, hid her, and then Major Veal found her again and bought her on the spot. Further road equipment was added, and a big screen fitted, while a big trunk was installed behind the fuel tank where the spare wheel used to live. When weighed in for the race the car turned the scales at 1,090 k.g., but it now weighed a great deal more. The touring camshaft had been put in, and braking had been improved by fitting Whitehead front brakes, cunningly arranged to steady the car without winding up a front-end not intended to take retardation stresses. In spite of this weight increase and the considerable head-resistance, the Mercédès still possessed acceleration of an order that would require a good "30/98" Vauxhall to beat it, and it would do 80 m.p.h. in third. The exhaust note was reminiscent of a very touring "Blue Label" Bentley, but the rear axle whine and valve gear noise was most inspiring. The seats were very comfortable, the road-holding excellent, and at 40 m.p.h. the engine speed was a mere 1,000 r.p.m. Major Veal used the car regularly until about 1927, and always the old engine started on the starter on No. 1 petrol. Feeling he was getting rather too elderly to do an ex-racing car justice he then laid the Mercédès up.

Now, shortly after the outbreak of the second world war, it is again stripped, but by an amateur enthusiast who is steadily restoring it to its original trim. The four-cylinder engine has a bore and stroke of 93×165 mm. (4,481 c.c.) and is rated at 21 h.p. The single o.h. camshaft is driven by a vertical shaft at the back of the engine and operates four inclined valves per cylinder. The actual valve stems and the tips of the rockers are exposed, but an ingenious trap prevents excessive escape of oil. The original steel pistons showed minute cracks on the thrust faces of the skirts at right angles to the gudgeon, when subjected to a "Magnaflux" test, so new Aerolite pistons, in alloy, but similar to the original design, are going to be used. The valve-guides have been bored out and the valve stems "Fescolised" to fit; the valves were perfect. The crankshaft runs in five main bearings, and the connecting-rods are H-section, machined all over. As the flywheel was loose on the crankshaft the tapers were re-ground and built-up, new bearing shells were made, and the full panoply of Mr. Laystall's art, indeed, was brought to bear. There are three pumps per cylinder, two being on the off, or inlet side. The near side of the head is cored for two plugs also, either because Mercédès thought of using four plugs per cylinder or because they wanted to experiment with the third plug in varying positions. Ignition is by two Bosch magnetos driven Bentley fashion, but at the rear of the engine; that on the near side has a single distributor, that on the off side a double. Peter says that if he can acquire another dual magneto he will try the full sixteen candles! Cooling is by pump at very high flow speed. The temperature will not rise above 60°F. unless the (original) cover is slipped behind the flank of the radiator stoneguard. The original inlet manifold is in place; a most amazing copper manifold which has twin risers of "V" formation feeding into a four-branch pipe of like diameter, there being no central division, despite the use of twin risers. A very crude air heater was subsequently fitted, air entering a duct behind the radiator on the near side, wandering over the exhaust pipes and being led round the back of the engine to a junction box below the carburetter intake, where a driver-controlled flap valve allowed air to enter either through this device or through a hole facing forwards by the off side front wheel, where dirt and filth would intrude. Two spare carburetters which came with the car are identical to the original design. No lagging remains on the manifolding, which glories in the nakedness of shining brasswork. The Polyshoë carburetter from the 1908 Hutton may be experimented with, and it seems that a Packard carburetter much improved the car which de Palma drove at Indianapolis in 1915. The original straight-through exhaust pipe succumbed to an undersize drop-pipe where No. 4 branch comes in, leading into a big silencer below the chassis and a small tail pipe. As already mentioned, No. 4 cylinder is .005″ oversize everywhere, but this will be rectified. The other cylinders show a bore wear of only .002″. The engine originally ran up to about 3,200 r.p.m. at which speed piston-speed was quite fantastic. The drive passes to a double cone clutch and four-speed gearbox. Final drive is by torque tube enclosed shaft—Mercédès having abandoned chain-drive for the first time in 1914. The rear axle has two crown wheels and pinions and thanks to this division of loading, shows no wear, only a small amount of attention to the oil-retaining felts being called for. The foot brake originally operated on the transmission and the hand brake on the rear wheels, but when the front brakes were added the hand brake was relegated to the transmission. One rear drum was worn much more than the other, doubtless because oil-leakage had saved one from any real work. Both brakes were relined and a lot of trial and error adjustment carried out with the cunning inter-shoe compensators. The transmission brake was replaced with its original metal lining, but the spring-loading on the pull-off linkage was modified a trifle. When the gearbox was taken down, all was found to be in perfect order. New bronze blocks were made for the front universal, and some welding, grinding, and scraping committed on its other components. Apart from this, no other work was necessary. Peter Clark certainly deserves every credit for stripping the car so thoroughly before reassembly. The car will, when finally completed, be as nearly as possible in the condition in which it ran in the dramatic race at Lyons before the last war. Barring the few very minor modifications outlined, and a very carefully contrived pressure-feed lubrication of the valve gear, the Mercédès will be in 1914 trim. It seems that some joke centres around the tails used on the racing bodies, for in different pictures they are alternately present or absent, like an umbrella or overcoat. It is nice to think of the portly Lautenschlager barking his knees so often on the sharp edge that he rent the tail away with the tin ships, but, alas, that is pure romance.

We have been promised a drive in this remarkably interesting veteran when Peter Clark gets it on the road, and we shall look forward to reporting on the car's performance, for in the race these Mercédès reached 110-115 m.p.h. at least once a lap and the close ratio gearbox, giving ratios of about 2.5, 4, 5, and 11½ to 1, permits, we believe, of rapid gear changes. Highly ingenious cam-lift, coil spring shock-absorbers look after the half-elliptic suspension, and these were the steadiest cars in the race in spite of the short wheelbase. As late as 1927, with one of these cars, Rosenberger broke the course record at the Semmering hill-climb, and in 1929 won the St. Moritz G.P., being timed to exceed 120 m.p.h., with streamlined body-work and other modifications.

Peter Clark has been fortunate in securing a car which not only belongs to a most dramatic episode of racing history, but whose design remained almost unbeaten for nearly fifteen years. It should be the fastest road-worthy pre-1914 car in existence when fully restored, and will be watched with extreme interest at Vintage S.C.C. Edwardian contests, for which several new veterans are being prepared, when these are resumed. The pride which Major Veal took in the old car is amply upheld by the very careful overhaul which Peter Clark is conducting on the car, and let us hope that when the work is finally completed we shall also have won this war.

RUMBLINGS

We "Miss the Bus"

THERE is a certain phrase which has obtained considerable prominence recently concerning "missing the bus," and, as I well know, it can have more than one interpretation. In my case the loss was particularly felt on a day recently which was scheduled as the latest date for sending Motor Sport to press. As mentioned elsewhere in this issue, my business at present entails a three-hour rail journey, and on the day in question this had to be undertaken during an air raid. The result was that all my carefully laid plans to write "Rumblings" for this issue were turned to futile grumblings at the delays and inconveniences occasioned by the presence of unwelcome aerial visitors.

"The Best Laid Schemes . . ."

I certainly missed my "bus" on that journey, for with my tried and trusted Austin I should have reached home without any of the annoying hold-ups which are inevitable to rail travel in air raids, and you would have had the pleasure of devouring the words of wisdom which are provided each month for your enlightenment or entertainment.

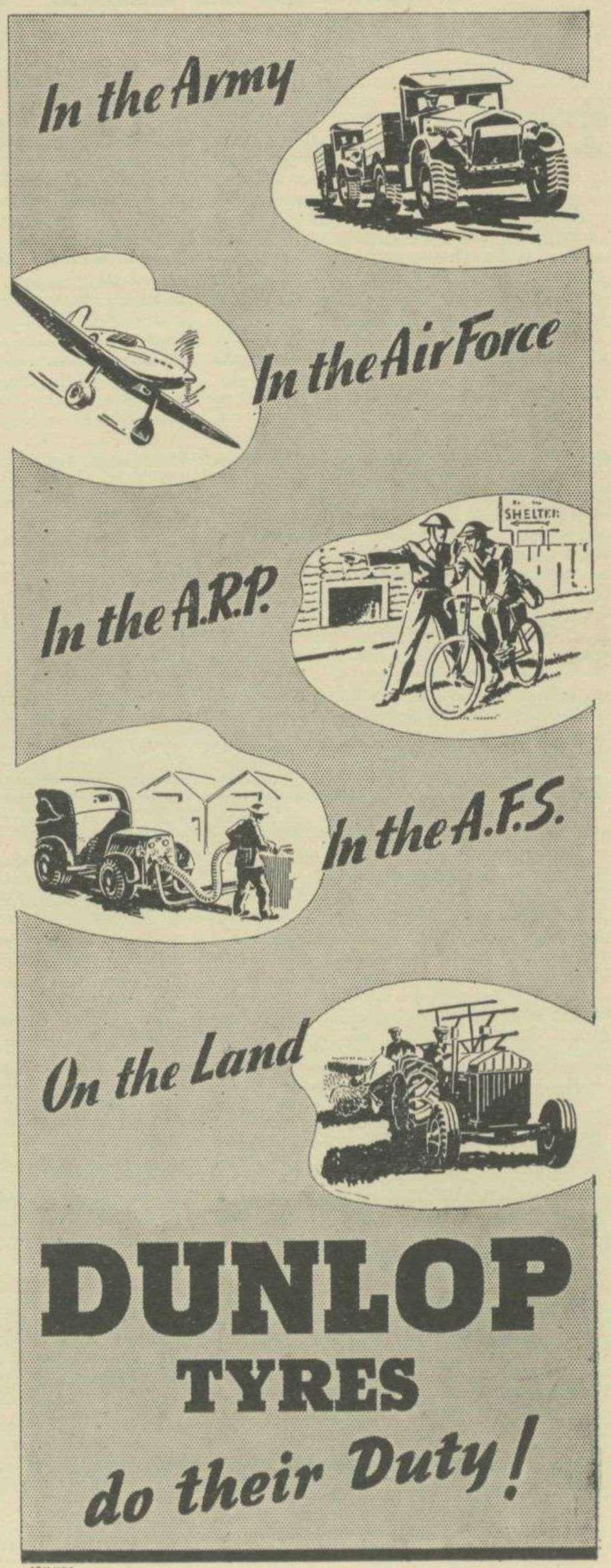
However, you can revel in the delights of anticipation for the feature will appear as usual next month; of course, provided Hitler misses not only the bus, but the printing works where this paper is produced.

Publishing Delays

And mention of printing brings to mind another matter of importance. Several correspondents have written complaining of the uncertainty as to the date of publication of Motor Sport. This is largely caused by postal and transport delays, which prevent articles being received in time to permit our publishing schedule being adhered to. Of course, it is very pleasant to receive evidence that our efforts are being appreciated and to know that each issue of the paper is so eagerly awaited; but please have patience, and do not allow your enthusiasm to overshadow your sense of proportion. We are all, Editor and printers, doing a difficult job to the best of our ability, and even though the paper is a few days late, yet you can get it each month—which is more than can be said for supporters of many other sporting periodicals.

Lonely Enthusiasts in the Services

With the coming of winter and the consequent lack of outdoor entertainment the demand for hosts to members of the Services whose interests are largely concerned with motor racing will certainly increase. So if you would like an occasional talk on the Sport with a congenial spirit let us have your name and address, and we will pass them on. You will be doing a kind act and may make acquaintance with someone who will prove a friend for life.



MERCEDES-BENZ versus AUTO-UNION

SOME OF THE MOST INTENSIVE RACING EVER AS A PRELUDE TO WAR

[*Continued from September issue. The* 1935 *Season*]

THE 1935 season opened with a bereavement for Mercédès-Benz, when Dr. Hans Nibel died of apoplexy at Stuttgart at the age of fifty-four. He had been with the house of Benz since 1904 and the design of the Mercédès-Benz racing-cars was now announced as his work. With the confirmation of Caracciola's Class C records came information as to the exact size of the Mercédès-Benz racing engines, this car being of 81.77 mm. × 94 mm. (3,946 c.c.), while the car which took the kilo and mile records at Gyon was of 82 mm. × 94.5 mm. (3,992 c.c.). The former was stated to be the normal G.P. car. This led to a rumour that Dr. Porsche was cleverly concealing the size of the Auto-Union engine by only claiming world's records, for which the car does not have to be stripped and measured, but this was somewhat offset when the Auto-Union later used for records at Lucca was given as having a V16 engine of 4,953 c.c. Another rumour that has not been fulfilled right up to the present time was that coupé tops were to be fitted to the cockpits of the German cars for road-circuit racing. Yet other rumours spoke of steam-cooling on the Auto-Unions, based on complaints about hot cockpits said to have been made by some of the drivers. What apparently *was* true was the device registering peak-revs. attained by the Auto-Union engines, in an aperture on the side of the car, Dr. Porsche having the one and only key! The political significance of racing was emphasised early in 1935 when Mussolini, annoyed that Varzi was still with Auto-Union and Fagioli with Mercédès-Benz, ordered Nuvolari to drop the plans he had as an independent and sign up with the Scuderia Ferrari to drive an Alfa-Romeo.

Auto-Union had an onslaught on some of the Mercédès-Benz records early in the year. Stuck cut short his winter-sporting at Arosa and went to Gyon with Varzi. The road was covered with snow and Hans thought it hardly long enough for the Auto-Union to reach its fullest speed, so, after a terrific pheasant-shoot in Czechoslovakia, they took the train to Milan. Walb and Stuck decided on the Florence-Viareggio *autobahn* after a careful investigation, Stuck deciding that the Brescia-Bergamo road had too many tiny undulation at side turnings and a surface unsuited to his 1 mm. tyre treads. The authorities concerned were bitterly disappointed—a nice reflection on the Continental attitude towards racing! Stuck, by the way, had a remarkable escape when his Horch left the road and rolled down a steep embankment on the way to Gyon. He took the Auto-Union—which had completely faired-in rear wheels, cowling behind the front wheels, a covered cockpit and an almost completely blanked-off radiator—out in a strong side wind, over a 7 kilo stretch at Altopascio. The well-cowled nose of the body alone was said to result in a speed increase of over 3 m.p.h. Thus Auto-Union beat Mercédès-Benz in respect of the Class C mile record by 2.233 m.p.h. The mile was covered at 318.331 k.p.h. against Caracciola's 316.678 k.p.h. The kilo record was then attacked but plug trouble set in, although one run had been done at 326.975 k.p.h. Another attempt was then made on the flying start mile record and the figure set at the astounding speed of 199.018 m.p.h. Further attempts on the kilo record were spoilt first by trouble with the timing apparatus and then by fuel-feed maladies.

At the Berlin Show the record-breaking Mercédès-Benz *Rennlimousin* was exhibited on a raised dais. As racing drew nearer, Herr Neubauer, Caracciola, Kohlrauch, Lang and Geier arrived with two cars from Stuttgart and put in several days practising at Monza, Caracciola very fit after winter sporting at St. Moritz with Hans Bernet and film-star Luis Trenker. The 1935 Mercédès-Benz were better streamlined and hand-timing credited them with a lap speed at Monza 2 secs. better than that of the Auto-Unions. Meanwhile Auto-Union spoke of testing at Montlhèry, and Varzi had his first drive at Avus, attended by Willie Walb, when he handled both the record car and the open racing-car, with Chiron and Leiuingen also present, braking and road-holding experiments being held. Stuck was on holiday at Cannes where his Horch, entered as an Auto-Union, won its class in the *Concours d'elegance*.

The first photograph of an Auto-Union chassis had reached England, and was reproduced in MOTOR SPORT. In Germany the scope of the O.N.S., the body controlling motoring sport under Korpsführer Hühnlein, was dealt with in a book bearing the high-sounding title of "Der Kraftfahrsport im neuen Deutschland," published in Berlin for the equivalent of 4/8. Meantime, at Pau, where the Germans did not run, Nuvolari won at 52.17 m.p.h. with an Alfa-Romeo.

The season really commenced at Monaco, with the intense round-the-town race. Again Auto-Union considered their cars too long for the corners, but Mercédès entered Fagioli, Caracciola and Brauchitsch. A reserve car was handled during the training by Geier and Lang. In the first day's practice Nuvolari did 2 mins. 2 secs. and Brauchitsch tied with Dreyfus on his first attempt with 2 mins. 3 secs. On the second day Fagioli equalled the lap record of 1 min. 59 secs., and on a truly hectic run Brauchitsch set a new record of 1 min. 57 secs. On the last day Fagioli did 1 min. 57.3 secs. and Caracciola set a new record of 1 min. 56.6 secs. on a quite steady run. Cat-calls greeted the German cars as they came to the start. Incidentally, a special wireless station down the course broadcast the race to Germany. As the flag fell Fagioli and Caracciola shot off and after a lap the two Mercédès were already pulling away from the Alfa-Romeos. After two laps Brauchitsch retired with a stripped gear wheel. Fagioli's standing lap occupied only 2 mins. 2.2 secs., and his initial ten laps close on 10 mins. His sixth lap was done at 1 min. 58.6 secs., equal to 60.08 m.p.h. By 30 laps he led Caracciola by 24 secs. Fagioli and Caracciola eased up, likewise Etancelin, whose 3.7-litre Maserati was third. Now Etancelin was signalled to hurry, and after an immense drive he closed with Caracciola and passed him on the inside of the Gas Works hairpin on the 49th lap. However, "Caratsch" opened up again, and snaking up the Avenue on lap 56 he again led, only to show definite signs of overheating on lap 60 and to retire the Mercédès with a broken valve on lap 61. The Maserati, too, suffered in the duel, dropping back to fourth place. With a clear minute over Dreyfus's Alfa-Romeo, Fagioli refuelled on lap 60 in 35 secs. He ran on to win by 32 secs. at 58.17 m.p.h., after a drive lasting 3 hrs. 23 mins. 49 secs., which beat by over 1 m.p.h. the race record set by Varzi's 2.3 Bugatti in 1933. Dreyfus was second and Brivio third, both on Alfa-Romeos, of 3.2 and 2.9 litres respectively, compared to the Mercédès-Benz's 4 litres.

So to Carthage, for the G.P. of Tunis. A strong wind made the course difficult for Formula cars, especially as a *chicane* was removed so that the cars went past the stands at maximum speed. Varzi drove the Auto-Union with which Stuck had taken world's records at Avus. He got the lead at the start, and Nuvolari retiring with lubrication trouble, the lone German car was in a very strong position. Wimille's works 3.3 Bugatti was second but could make no impression on the Auto-Union, and Etancelin, in third place with the Maserati, was hampered by losing top gear after 15 laps. H.R.H. The Bey of Tunis arrived in the grandstand at half-distance. Varzi went on to win by 3 mins. 49.6 secs., in 3 hrs. 5 mins. 40.2 secs. at 101.75 m.p.h, making fastest lap on lap two in 4 mins. 28.4 secs., or 105 m.p.h. Wimille was second, Etancelin third.

Tripoli was the next round, over that amazing road course which is the fastest in the world. Varzi and Stuck took the Auto-Unions, Caracciola, Fagioli and Brauchitsch the Mercédès-Benz, and the sensational new twin-motored Alfa-Romeos—Ferrari's reply to Germany—were driven by Chiron and Nuvolari, with Dreyfus, Brivio, Pintacuda and Tadini on more normal Alfas. Practice saw Stuck make fastest time on both days. Twenty thousand persons packed the tiers of the concrete grandstand, and M. Marcel Peyrouton, Governor-General of Tunis, arrived in a Panhard, greeted by the "Marseillaise," and the late Marshal Balbo dropped the flag. Fagioli got a clear lead in the getaway, but it was Caracciola who led him after the first lap, Nuvolari third. Nuvolari passed Fagioli on lap two and went after the leading Mercédès, which, however, speeded up in response, and the 6.4-litre Alfa needed new tyres on the next lap. On

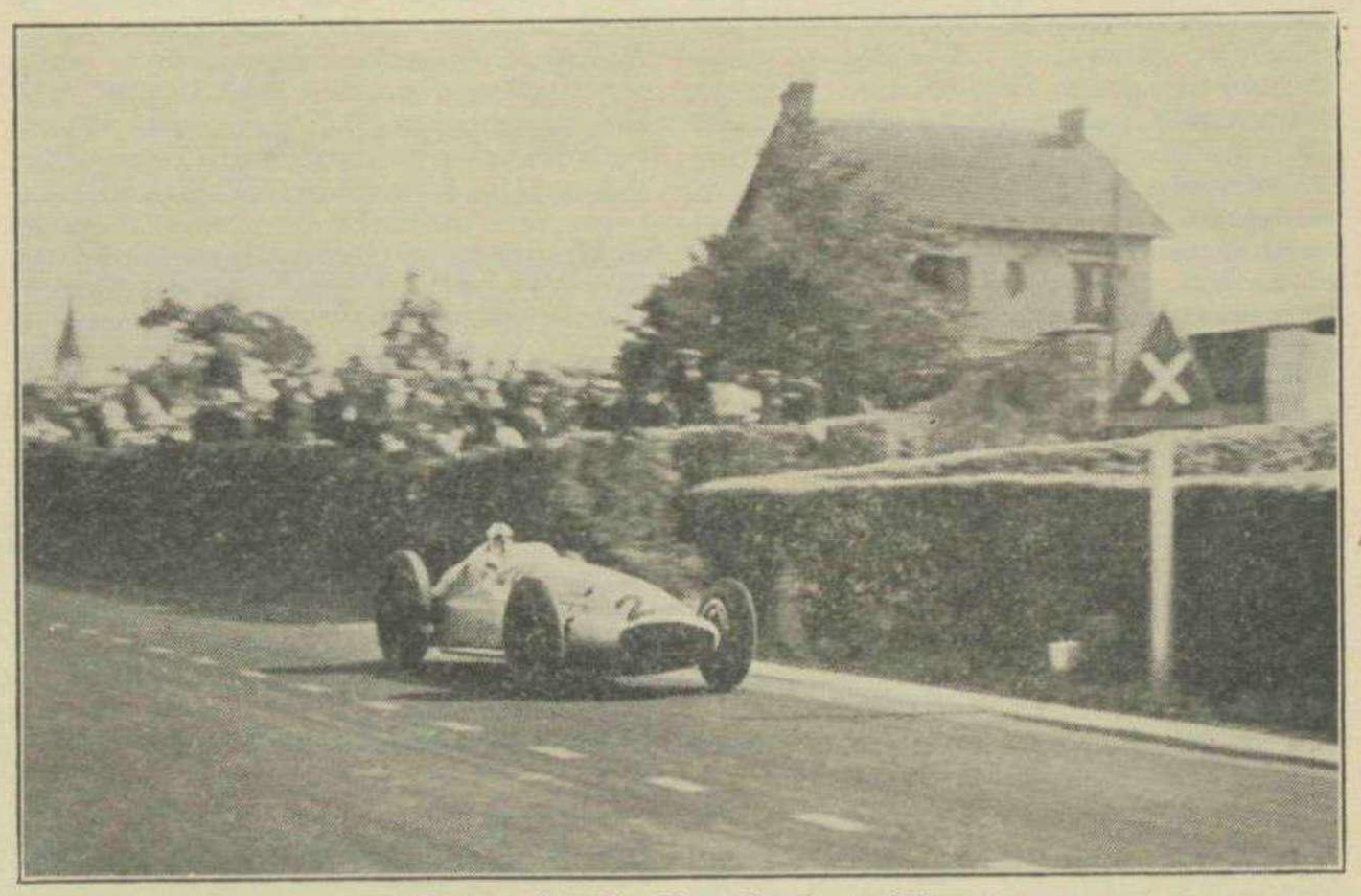
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lap five. Caracciola stopped for tyres and Varzi, who had come up steadily, now took the lead from Fagioli. The Mercédès had experienced valve trouble in practice and Brauchitsch retired early. Nuvolari needed more tyres by lap seven, and Caracciola was in for the same reason on lap eight. Stuck was second after 10 laps, 2 secs. behind Varzi. Stuck stopped for tyres on lap 11, Varzi on lap 12, but Fagioli had not yet come in. Fagioli stopped, however, a little later, Varzi had his second change, and Stuck had a narrow escape when the Auto-Union lit-up out in the country, the damage being extensive. When Fagioli, now second, had *his* second tyre stop, Caracciola took this position, 1 min. 22 secs. behind Varzi. Nuvolari was seriously hampered by tyre stops, but, given the "all-out" signal at the end, he fairly swept past Fagioli and Caracciola and got right on Varzi's tail, although "Caratsch" was himself closing nicely with the leading Auto-Union. Excitement was intense, but Varzi stayed ahead and a lap later the *bimotore* Alfa again stopped for tyres. Came drama on lap 35, for Varzi had a tyre go as he passed the Stands, and he had to crawl round eight miles to the pits, what time the wheel was buckled and the tortured rubber very hot. Mechanics fought the jammed wheel, and, as the new wheel went home, came the siren-scream of Caracciola's Mercédès. Varzi went after it in an icy fury and by lap 39 was a mere 2 secs. behind. Alas, another tyre went and instead of an intense finish, Caracciola won by 67 secs., at 122.03 m.p.h. He broke the lap record on lap 38, at 137.6 m.p.h. Fagioli was third, Nuvolari fourth. Signor Gaetano Giacomini, a tax official from Rome, drew Caracciola in the famous sweepstake and won 6,000,000,000 liras. A great race!

The next sensation was the capture by Ferrari of the Auto-Union and some of the Mercédès-Benz records. Nuvolari took out the *bimotore* Alfa-Romeo, now equipped with Dunlop covers, on the Florence-Lucca Autostrada and just beat the Class C flying start mile and kilo records. He was 2.385 m.p.h. faster than the Mercédès and 1.776 m.p.h. faster than the Auto-Union on his first attempt, and then went out the next day and finally set the kilo figure to 200.803 m.p.h. The mile figure was at 200.789 m.p.h.

For the Avus race Auto-Union and Mercédès-Benz both entered teams of four, opposed by Nuvolari and Chiron with the now more matured *bimotore* Alfa-Romeos, Dreyfus's 3.2 *monoposto* Alfa, Etancelin's 3.7 six-cylinder Maserati and various independents. In practice Stuck did a staggering *standing* lap in 4 mins. 37 secs. (158 m.p.h.) which beat everyone else's flying laps! The Auto-Union held 190 m.p.h. down the straight. The Mercs. did 140 m.p.h. for the lap, the Alfas only 125. On the last day Stuck set a new Avus lap record of 162 m.p.h. Leiningen and a new-comer, Rosemeyer, were handling closed-cockpit record cars in the race, which caused some comment until Dr. Porsche told the Press that new engines of greater output were now used in Stuck's and Varzi's open cars. Ten thousand people watched the practice and 150,000 came for the race. As the flag fell for heat 1, Stuck got clean away from Fagioli and Nuvolari. The Alfa stopped for tyres on lap two, and it was said always to throw treads at over 175 or 180 m.p.h. Rosemeyer retired and Stuck speeded up and on lap three set a new lap record of 162 m.p.h., 22 m.p.h. faster than Momberger's old figure. Stuck won at 155 m.p.h. from Fagioli and Dreyfus. In the second heat Varzi got an immediate lead, but when he and Caracciola came in together for tyres, Brauchitsch led. Leiningen had passed both Mercédès and blown his Auto-Union up in doing so. Brauchitsch now stopped for tyres, and Caracciola, first off after the pit stop, won at 148 m.p.h. from Varzi and Brauchitsch. Huhnlein started the cars in the Final. Stuck led lap one from Varzi, who had passed Caracciola and Fagioli. Fagioli got past Varzi after a struggle, and caught Stuck on the North curve, when, although he was running easily to save his tyres, Stuck had an off rear tyre go, which took 40 secs. to change. Varzi, Caracciola, and Brauchitsch all stopped for tyres and Geier's Mercédès-Benz retired. At half distance Varzi was only 12 secs. behind Fagioli and his great effort necessitated a third change of tyres, within 125 miles. Fagioli finished first in 49 mins. 13.2 secs., at 148.2 m.p.h., his covers through to the canvas. 1 min. 35.2 secs. later, Chiron's Alfa-Romeo crossed the line after a beautifully smooth run, and Varzi was third with a tyre again almost through. Caracciola retired. Fagioli used the same tyres he had for the heat and he recorded the fastest speed over the timed kilo of 190 m.p.h. His victory was certainly earned.

Negotiations were started to persuade Fagioli to run at Biella, but Mercédès refused on the grounds that the French G.P. was too close. Varzi actually drove a Maserati, but Nuvolari won.



H. Lang with his Mercedes-Benz full out

Along to Nurburg for the Eifelrennen! In spite of poor weather, tens of thousands camped round the circuit and 300,000 are estimated to have seen the German victory. In practice Brauchitsch was fastest, and Varzi was too ill to drive for Auto-Union. Brauchitsch made an immense start and led lap one by 22 secs. from Caracciola. Stuck got third place from Varzi on lap two and Brauchitsch gained another 2 secs. Poor Varzi came in for plugs and was obviously ill, suffering appendix trouble, but he wouldn't give over to Leiningen. Stuck later came in for plugs and Mercédès held the first three places, Neubauer signing to Brauchitsch to ease up. By lap four he led by 1 min. 6 secs. Varzi again stopped for plugs, likewise Stuck, alternate sunshine and rain playing havoc with carburation. Fagioli now had the same bother, and refuelled as well. Rosemeyer was signalled to speed up, after much discussion at the A.U. pit, and he soon passed Chiron. He soon closed with Caracciola—feeling, doubtless, that his chance had come! A stone smashed his screen, another broke his goggles, he lost his helmet, and then two cylinders cut out. Rather than stop, Rosemeyer held Caracciola on fourteen cylinders, what time Stuck needed more plugs and Leiningen took over from Varzi, instructed to go flat out. Caracciola was closing with Brauchitsch and Rosemeyer was less than a second behind him. Then Brauchitsch over-revved in passing an Alfa-Romeo and retired and at the critical moment Rosemeyer passed Caracciola! Neubauer gave Caracciola the all-out signal, but by the last lap the Auto-Union was still 7 secs. ahead. Then, a bare kilo or so from the line, Caracciola got past, and Mercédès-Benz won by a mere 1.9 secs., in 2 hrs. 8 mins. 2.3 secs., at 73.0 m.p.h. Chiron was third, Fagioli fourth, Lang fifth, and Pietsch (Auto-Union) sixth. Rosemeyer made the

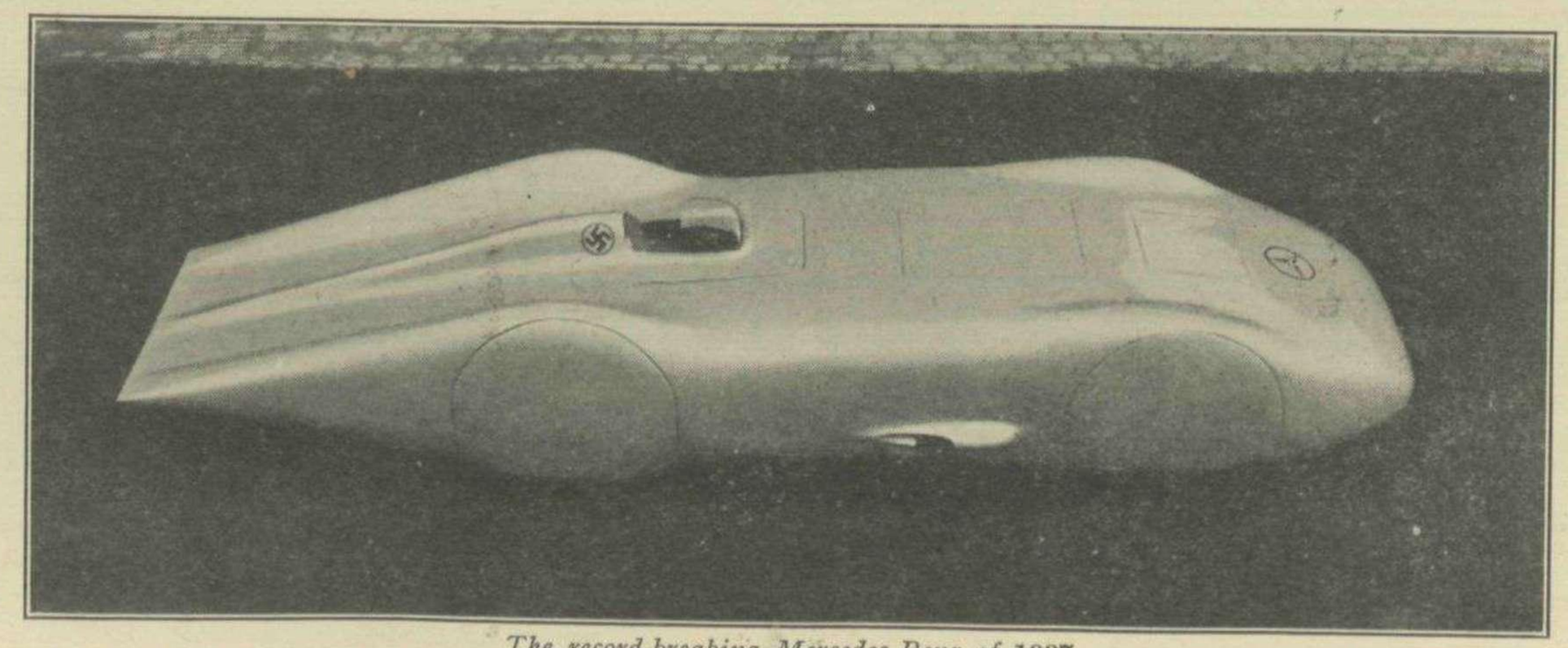
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fastest lap in 11 mins. 5 secs., at over 79 m.p.h., and his skill as a car-driver was loudly acclaimed.

The French G.P. was over 40 laps of the Montlhèry road course. Mercédès practised a fortnight beforehand and Caracciola equalled his best lap speed of the previous year, when no obstacles were used. Auto-Union were bothered by plug trouble, due to unsuitable fuel, hot weather and an excess of oil in one bank of cylinders. Onlookers waited over an hour by the weighbridge just to see the Mercédès. All three were a kilogramme inside the limit. The Auto-Unions of Stuck and Varzi now had 5.6-litre engines. These weighed 746 k.g. and Rosemeyer's 5-litre, 748 k.g. The Alfas were lightest, at 733 k.g. The "3.8" Bugatti was weighed at midnight, on arrival. The Mercs. were still 3.9 litres, but said to have a higher compression ratio, and to give 350-370 b.h.p. The Auto-Unions were better streamlined, and had transverse leaf rear suspension in place of parallel torsion bars. Nuvolari and Chiron with 3.5 Alfas and Zhender and Sommer with 3.8 Maseratis and Benoist's Bugatti opposed the Germans. The big-engined Auto-Unions were some trouble to start. Stuck led away, but it was Nuvolari who was in front after a lap had run. Varzi was third, Caracciola fourth, but Varzi's car misfired, stopped for plugs, and left, still misfiring. Caracciola was now second, all out in pursuit of the leading Alfa-Romeo. Nuvolari got through the *chicanes* without seeming to slow, much faster than anyone else, and Chiron was now third, Fagioli fourth. Varzi was in again, the sixteen plugs taking three mechanics over 3 mins. to change. By lap five Caracciola led, but the maestro was only three lengths behind, and Chiron was still third. Next lap Caracciola set a lap record of 84.59 m.p.h., but Nuvolari was only a bare length away next time round. He took Biscornes almost beside the Mercédès-Benz and actually got ahead thereafter, doing a new record lap at 85.0 m.p.h. Stuck had been to his pit and now Chiron's Alfa stopped, crawled for another lap, and retired with the back axle gone. Varzi was in again for plugs and Stuck overshot his pit and retired with brake trouble. Auto-Union's bolt was shot when Rosemeyer retired with oiling plugs on one bank and overheating plugs on the other. In five laps Nuvolari increased his lead over the Merc. by 4 secs. It seemed that in speed, road-holding and acceleration the Mercédès-Benz had met its match, and if the Alfa-Romeo brakes weakened, the detachable drums would allow a quick replacement. Then, on lap 14, Nuvolari slowed right down, to retire with what appeared to be axle trouble. Caracciola slowed too, and Neubauer stifled a duel between him and Fagioli. Both refuelled in 1¼ mins. Caracciola won in 4 hrs. 0 min. 54.6 secs. at 77.39 m.p.h. and Brauchitsch was second .5 sec. later, at 77.38 m.p.h. Zhender's Maserati was third in spite of a damaged gearbox and Fagioli, who had to stop once for tyres, was fourth, with the Varzi-Geier Auto-Union fifth.

Auto-Union having cancelled all engagements until the German G.P. in an endeavour to get the carburation of the new 5.6-litre engines right, the Penya Rhin G.P. was mainly a struggle between Fagioli and Caracciola with Mercédès-Benz and Nuvolari's Alfa-Romeo. Caracciola led away with Nuvolari between him and Fagioli. Soon Nuvolari was displaced, and Caracciola took the lap record at 69.3 m.p.h., some 3 m.p.h. faster than Chiron's 1934 record. Nevertheless, Fagioli went ahead on lap 23. "Caratsch" got ahead for 5 laps after lap 42, but Fagioli then repassed. Nuvolari now caught the second Mercédès, although actually a lap behind. Fagioli refuelled in 52 secs., Caracciola in 60 secs. Fagioli won at 67.38 m.p.h. in 2 hrs. 27 mins. 40 secs., over 28 secs. ahead of Caracciola, with Nuvolari third, the average being 5½ mins. up on Varzi's 1934 figure.

The Belgian G.P. constituted an extremely severe test of cars and drivers, the Spa circuit being hard at the best of times, and doubly so in the intense heat that prevailed. The onlookers were composed mainly of Dutch and Belgian racegoers. Caracciola led lap one from Brauchitsch, who had just overhauled Wimille's 3.3 Bugatti. The leading Mercédès-Benz did the standing lap at over 99.5 m.p.h. The Mercs. looked to have things entirely their own way with Fagioli now second, until, on lap 15, Brauchitsch slowed on the up-grade after the Stands, and Benoist's Bugatti passed him amid a cheer from the crowd. All plugs were changed, but, still misfiring, the car retired. Fagioli was rumoured to be the winner and knowledgeable folk waited for him to speed up on "Caratsch." He had set a lap record of 102.27 m.p.h. on laps 13 and 14, beating Brivio's 1934 record by 18 secs., and after the refuel he went in earnest after the leader, getting on his tail on lap 20. Neubauer now signalled Fagioli to give up this duel, but he paid no heed, and Caracciola speeded up likewise, to keep him at bay. Furious, Neubauer gave Fagioli the stop signal and, amid an argument, Brauchitsch took over, the officials being told that Fagioli had retired from fatigue. While the change over was made, the Alfa-Romeos of Chiron and Dreyfus went by! Fagioli certainly let the excellent Mercédès control down, as he had done before. Brauchitsch, a heavier, less polished driver, now drove hard to get the lost position back. On lap 27 he was on Dreyfus's tail and uphill the Mercédès got clear and went after Chiron. Cornering absolutely at the limit, it took 2 laps for the cars to close, and even then Chiron held off the Merc. until right at the end of the uphill stretch. Neubauer now tried to slow Caracciola down to get a close finish, but his orders held no meaning for the excited Brauchitsch, who set the lap record to 103.53 m.p.h. on lap 31, 4 secs. faster than Fagioli. The strain of the race was seen when Dreyfus stopped at his pit and fell on the floor in complete exhaustion, as Marinoni took over, remaining laid out, fanned and given refreshment, until the race finished. Caracciola won after 3 hrs. 12 mins. 31 secs. at 97.87 m.p.h., 1 min. 37 secs. ahead of Fagioli, with Chiron third. Louis Chiron staggered to the microphone like a boxer out on his feet, his eyes shut, then, murmuring that this was the most exhausting race he had ever driven, he stretched out on the



The record-breaking Mercedes-Benz of **1937**

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floor of the Ferrari pit. He started with incipient influenza and was completely exhausted. The French Press tried to blame the fumes from the fuel used in the Mercédès cars for Dreyfus's and Chiron's exhaustion, but, as we pointed out, it did not worry the Mercs. drivers, and was the same as that used at Montlhèry, where Brauchitsch followed "Caratsch" for over 550 miles. Fagioli's disobedience to Neubauer's signals caused much comment and recalled the Nuvolari-Varzi split of earlier times.

At Kesselburg, Stuck made fastest time for Auto-Union in 3 mins. 44.3 secs. (50 m.p.h.) but was .3 sec. below his 1934 record. He beat Zanelli's Nacional Pescara by only 3.9 secs.

Nice emphasis of the political significance of motor-racing about this time was afforded by the presentation from Il Duce to Nuvolari of the "gold medal for valour in sport," followed up by a personal message of congratulation, in respect of the *bimotore* records.



Approaching the Nurburg ring

The German G.P. was, perhaps, the most enthralling race of 1935. Throughout at least two days and nights the people of Germany streamed to the Nurburg Ring, even people from beyond the borders, from France and Switzerland came and camped out in the pine woods on the edge of the course and charabanc loads of elderly people were no uncommon sight. The total was estimated at 250,000. Mercédès-Benz had eight cars at the Ring and were running four, and Auto-Union also had an entry of four. Neubauer was present and correct early on the Wednesday morning, and Hans Stuck's Horch was there at 6 o'clock that evening. Rosemeyer, in shorts, lapped very fast on the Thursday and Pietsch, the reserve Auto-Union driver, was practising quietly. Caracciola was "ticked-off" for arriving two hours late. Hitler was rumoured to be coming to the race, but it was not fulfilled. The race commenced in heavy rain. Stuck, in the front row, stalled his engine, and so did Pietsch—modern G.P. cars are not easy on the take-off. Caracciola led lap one, 12 secs. ahead of "Nuvers," Fagioli third and Rosemeyer fourth. By lap two, Nuvolari had fallen to sixth place, and Rosemeyer was second and Brauchitsch third. Rosemeyer closed to within 4 secs. of Caracciola by lap four, and the Mercédès driver hurled his goggles at his pit as he screamed past at 125 m.p.h. Stuck cut his lap time by a whole 22 secs. on this lap. Three Alfa-Romeos were out by lap five, Chiron with gearbox trouble. On lap six Rosemeyer called at his pit for a wheel change, clods of earth falling as it was hauled off, for the Auto-Uuion had hit the bank early in the race, slightly damaging the rear axle. Now all eyes were on Nuvolari, sole Alfa-Romeo representative, who lapped in 10 mins. 57.4 secs. and came up to third place, the first driver to lap below 11 mins. Rosemeyer responded, however, with 10 mins. 55.1 secs. Then, on lap 10, Nuvolari passed Caracciola, to lead the race! For two great laps he led and then came in to refuel. Caracciola, Rosemeyer and Brauchitsch were in also, the pits a hive of activity. The times were as follows: Brauchitsch 47 secs.; Stuck 49 secs.; Fagioli 51 secs.; Geier 52 secs.; Lang 55 secs.; Caracciola 67 secs.; Varzi 72 secs.; Pietsch 72 secs.; Rosemeyer 75 secs. In the Ferrari pit a terrible muddle ensued, Nuvolari wild with excitement and—stationary for 134 secs.! Brauchitsch came out the leader but by lap 13 Nuvolari, driving the race of his life, was second, having come up from sixth place after the pit-stop. Fagioli, Rosemeyer, Caracciola, Stuck—his 3.8 Alfa-Romeo had passed them all. Moreover, the Italian car sounded quite fit after such treatment. Brauchitsch, fully alive to the danger, set Rosemeyer's lap record up to 10 mins. 30 secs., nor did Neubauer signal him to use restraint! Rosemeyer had to stop while a broken fuel line was repaired and Fagioli for rear shock-absorber adjustment. Thousands of watches timed the Nuvolari-Brauchitsch duel. On lap 13 Tazio was 69 secs. behind, on lap 14, 86 secs.; on lap 15, 87 secs.; on lap 16 only 77 secs. By lap 17 the gap had closed to 63 secs., to 47 secs. on lap 18, 43 secs. on lap 19, 32 secs. on lap 20 and to 35 secs. as they commenced the final lap. Obviously, the Mercédès-Benz would win. Then came the dramatic news that von Brauchitsch was missing! Nuvolari came into sight and the red Alfa-Romeo was flagged the winner. Stuck came home in second place, followed by Caracciola, then by Rosemeyer. Only then did Brauchitsch come limping in, the Merc's. near rear wheel quite devoid of a tyre .... Manfred drove slowly on; beyond the sympathetic crowd in the pits and he was weeping as his brother, who did his timing, led him away. Nuvolari deserved his victory, for he had driven magnificently; proved himself still the master. On that home ground he had beaten the Germans by 1 min. 39 secs., after a drive lasting 4 hrs. 8 mins. 39 secs., at an average of 75.75 m.p.h. Fagioli was sixth, Geier seventh, Varzi eighth, Pietsch ninth and Lang retired.

The next clash was the Coppa Acerbo, attended by special train-loads of excited race-goers from all over Italy. The Alfas would have liked a wet course, and sunshine would have worried Auto-Union, who experienced tyre trouble in practice, but it was cool and dry for the race, which made "Nuvers" look very worried. Nuvolari led away but was soon passed by Varzi's Auto-Union, which did the standing lap at 89.3 m.p.h. Varzi did 90.9 m.p.h. on his second lap, beating the previous record by 10 secs. Rosemeyer, who had been third, came in with both rear tyres flat and a dent in the tail, having skidded into a wall. He was off in 30 secs., last nevertheless. By lap seven he was again third and was ordered to keep behind Nuvolari, who had eased up somewhat. The Maseratis retired early and the other Alfas came in for plugs, Chiron seemingly still unwell, Varzi, Rosemeyer, and Brivio (Alfa-Romeo) needed new rear tyres at the refuel. Varzi was away in 65 secs., against Nuvolari's 63 secs. "Nuvers" now went very earnestly after the Auto-Union and gained perceptibly, but after three great laps he had to retire with a broken valve. Varzi went on to win comfortably at 86.6 m.p.h. in 3 hrs. 43 mins. 45 secs., 3 mins. 22 secs. ahead of Rosemeyer. Brivio was third and Alfas-Romeo held the next three places, the transmission trouble seemingly overcome. Timed over a kilo, Rosemeyer did 172 m.p.h., Varzi 164.3 m.p.h. and Chiron, with the fastest Alfa, 157.4 m.p.h.

Varzi was reported to be dissatisfied with the handling of the Auto-Union and contemplating a return to Maserati, and Loof, a motor-cyclist, was recruited to the Auto-Union team. The cars were now reported to have 6-litre engines developing about 480 b.h.p. at 5,000

MERCEDES-BENZ versus AUTO-UNION—continued

r.p.m., better brakes, and improved road-holding, again by torsion bars at the rear. At Friburg, before 40,000 spectators, Stuck climbed in 8 mins. 24.1 secs., at 53 m.p.h., fastest time of the day, but some 2 m.p.h. slower than his 1934 record, and only .6 m.p.h. faster than Seaman's E.R.A. And at the Stelvio, Tadini, with an Alfa-Romeo, clocked 14 mins. 15.54 secs., beating his own record by 45 secs. Nuvolari was second, and Dusio's Maserati third. Varzi, with the Auto-Union, was thoroughly miserable, having to reverse at five of the hairpins, and so demonstrative did the crowd become that an appeal was broadcast for order and sportsmanship.

In the Swiss G.P. over the Bremgarten circuit the Mercédès-Benz outclassed the Alfa-Romeos. In practice Geier completely wrote off a Mercédès in a crash in which he suffered a broken skull and other injuries. In the race Etancelin, Hartmann and Chiron all crashed, the last-named while duelling with Brauchitsch. The Mercédès blew up shortly afterwards, and Caracciola won a rather wet race in 3 hrs. 31 mins. 12 secs., 36 secs. ahead of Fagioli, at 89.97 m.p.h. Rosemeyer's Auto-Union was third, Varzi's Auto-Union fourth, Nuvolari fifth, and Lang sixth. Mercédès tried out a lower, slimmer car, prelude to the 1936 design, which was some 8-10 m.p.h. faster than the older cars.

The Italian G.P. at Monza was expected to be a really tremendous race. Mercédès-Benz was a hot favourite, although Varzi's Auto-Union did the fastest practice laps. Still the new twelve-cylinder Alfa-Romeo had not appeared. Caracciola did his first lap in 3 mins. 9 secs. and led from Stuck and Varzi. The leading Mercédès was certainly wound-up, for it did its second lap in 2 mins. 58 secs. On lap three Stuck clipped off 3 secs. (88.5 m.p.h.) and took the lead. Varzi did a lap in 2 mins. 53.5 secs. and was second on lap five. These laps were very fast considering the full tanks. Varzi speeded up and passed Stuck, and Fagioli's Mercédès-Benz retired with a back brake out of action. Nuvolari was fourth at 10 laps. Varzi showed that no criticism of Auto-Union road-holding was justifiable by a great drive, but on lap 13 the car lit-up due to a broken piston, and retired. Stuck opened up to make his lead secure, lapping in 2 mins. 52 secs. Nuvolari, on the new 4-litre 8-cylinder Alfa-Romeo, was gaining on Caracciola. Rosemeyer retired after damaging his rear axle in a skid, and Pietsch handed him his car on lap 21, the stop costing only 20 secs. As "Caratsch" was ordered to speed up, Stuck replied with a record lap. Etancelin had seriously crashed his Maserati when the throttle jammed, the Bugattis were in trouble, and only Nuvolari fought with the Germans. On lap 27 he speeded up to 2 mins. 54 secs., then to 2 mins. 53 secs. Stuck and Caracciola both opened up, but in four laps the Alfa-Romeo made up 34 secs. on the Mercédès-Benz. Brauchitsch was fourth. Nuvolari now did two laps in 2 mins. 52 secs., cheered all round the course, and on lap 33 he clocked 2 mins. 49.8 secs., or 91.3 m.p.h., surpassing Stuck's record by a whole second.

He then slid right round at a *chicane* and lost 14 valuable seconds. At the refuel, the Mercédès *equipe* was not up to its usual standard. Caracciola changed two wheels and refuelled in 104 secs, and Fagioli took over. Stuck had the same job done in 45 secs., likewise Rosemeyer. Nuvolari lost 77 secs., brakes being adjusted as well. After the stops Stuck led from Nuvolari by 58 secs. with Dreyfus third. That the Mercédès were inferior to the Auto-Unions was evident when Brauchitsch took a *chicane* too fast on account of failing brakes and spun round three times before leaving the road, and Fagioli retired with damaged transmission. Lang, too, retired with engine trouble. Nuvolari seemed slowed by the full fuel tank and retired with a broken piston before really resuming his struggle with Stuck. He took over Dreyfus's car, and made a last great effort, but a valve broke, leaving him to run home on seven cylinders 1 min. 41 secs. after Stuck had won his first race with an Auto-Union, at 86.2 m.p.h., in 3 hrs. 40 mins. 9 secs. The Pietsch-Rosemeyer Auto-Union was third.

Mercédès-Benz returned to form in the Spanish G.P. at San Sebastian. During the training Varzi lapped in 6 mins. 8 secs., Caracciola was next in 6 mins. 22 secs., and Wimille's Bugatti did 6 mins. 23 secs. Fourteen cars started on a wet course, and Auto-Union was favourite, although Pietsch's was withdrawn. Stuck got off very well and led Rosemeyer by 6 secs. after the first lap, Fagioli third. On lap two, Varzi came in, his face streaming blood, for a stone had smashed his screen. Pietsch took over for a while and on lap three Rosemeyer was in for adjustments, giving Fagioli second place. Neubauer signalled Fagioli and Caracciola to get after Stuck, but Stuck was signalled to keep 15 secs. ahead, which he did by lapping in the record time of 6 mins. 11 secs., going past the Stands at 145 m.p.h. Brauchitsch was ordered to pass Chiron, but only a great scrap resulted. Poor Nuvolari retired after eight laps, when his Alfa-Romeo had broken parts of the suspension. Caracciola passed Fagioli, lapped in 6 mins. 9.6 secs., and got within 3 secs. of Stuck. Varzi, back again in the driving seat, now put in some immense laps, finally clocking 5 mins. 58 secs. Caracciola appeared to have Stuck taped and the Auto-Union came in for transmission attention and fuel, which put the Merc. into a comfortable lead at half-distance. Wimille was driving splendidly to be in third place with his Bugatti. Brauchitsch passed Wimille and the Mercédès-Benz ran line ahead for the second half of the race, Caracciola winning in 3 hrs. 9 mins. 9.1 secs., an average of 102.5 m.p.h., some 6 m.p.h. faster than Fagioli's 1934 average. Fagioli was second, 1 min. 32.9 secs. behind, and Brauchitsch third. Wimille was fourth, ahead of Rosemeyer. Varzi's best lap beat Stuck's old record by 22 secs.

A busy season concluded with the Czechoslovakian G.P. at Brno, in which Mercédès-Benz did not run, Rosemeyer's Auto-Union winning at 82.39 m.p.h. from Nuvolari's Alfa-Romeo and Chiron's Alfa-Romeo.

At Feldburg hill climb Stuck made best time with the short-chassis, twin-rear-tyred Auto-Union, in 6 mins. 22.3 secs., at a venue strewn with virdictive notices aimed at Hans, because he had married a Jewess!

The "overall" score for 1935 was thus:—Mercédès-Benz: nine firsts, five seconds and three thirds. Auto-Union: four firsts, four seconds and three thirds. Alfa-Romeo: one first, four seconds and six thirds. Maserati: two thirds. Bugatti: one second. It must be emphasised that this applies only to those races in which Mercédès or Auto-Union, or both, competed. Lots of other important races were held, largely dominated by Alfa-Romeo, and in those races described there has been no space in which to refer to much interesting matter concerning the French and Italian marques—we are mainly concerned with Mercédès-Benz and Auto-Union. Caracciola was awarded the 1935 Championship of Europe, by the A.I.A.C.R. in Paris, with 16 points, runners-up being Fagioli (22 points), Brauchitsch (31 points), Dreyfus (35 points), Stuck (37 points), Nuvolari (37 points), Chiron (40 points) and Varz (40 points). The cars had remained much as before, except for the alterations mentioned in the course of this review, Mercédès-Benz still using 4-litre engines, while Auto-Union contrived to use 5½-litre engines and keep within the 750 k.g. weight limit. The German teams can be said to have dominated 1935 racing by combined tactics and performance, but it is interesting to note that in a number of instances the *monoposto* Alfa-Romeos, Bugattis and Maseratis proved to have performance of almost as high an order. Caracciola came to England to attend a tea-party at the Park Lane premises of Mercédès-Benz, when one of the racing cars was put on show. He was interviewed by MOTOR SPORT and some extremely interesting information resulted. He said the Mercédès-Benz engine as a 4-litre unit running at 6,000 r.p.m. definitely required factory maintenance for its successful operation and replacements were frequent. He estimated each car to cost £8,000, and quoted the Mercédès racing expenses for 1935 as £200,000, of which the German Reich contributed £80,000. It is hard now to believe that the Mercédès Co. stood £120,000 worth of racing expenses in a year. They were, however, said to have asked starting money to the tune of £460 to race at Donington Ten miles per hour was said to have been added by using faired headrests, and Caracciola put the maximum at about 205 m.p.h., Auto-Union a fraction faster but less easy to brake and hold, the 4-litre Alfa-Romeo capable of 190 m.p.h., the new Maserati 187 m.p.h.

[*To be continued*]

Letters from Readers

Sir,

Some people seem to think that a large part of life in the Services consists, after the preliminary training, of *Waiting*. Since most of the real experts on motoring matters are in one uniform or other, hopes have been expressed that some of them may while away the time by committing their motoring knowledge to paper. It is most essential that the author should check and re-check every fact even when he thinks he is sure of it.

I recently picked up Lonsdale Library's "Motor Racing" again in a more intensely critical mood than on previous occasions. Of course, it is always terribly easy to pull a book to pieces if you set about it, and the last man you can blame is the editor, who cannot be expected to know more about all of a diversity of subjects than his individual expert contributors. Without having actually checked up ourselves, I venture to say that in each of the following instances the contributor made a mistake which, by more careful reference work, could have been avoided.

(i) In reporting the 1921 French Grand Prix, it is neither fair nor accurate to say that the Duesenbergs were "the only cars fit for the test" and that Ballots were "not at their best," for in point of fact Chassaque led on a Ballot until a stone went through the fuel tank.

(ii) There was no 4½ litre Peugeot built in 1913, so that the car illustrated must be either the 1913 5.6 litre job or the 1912 7.6 litre. Nor is it true to say that the 4½ litre was Peugeot's most famous type, since it was defeated at Lyons in 1914, whereas both the 1912 and 1913 models were unbeatable. Its valves, incidentally, were not driven by inverted pistons, as stated.

(iii) The 1924 Bugattis did not have alloy plates bolted to the cylinder block to form the outer walls of the water jacket. Furthermore, it was not until 1926 that blowers were added, the cars running unblown in the 1925 French Grand Prix.

(iv) The 1937 G.P. Mercédès was 5 litres (not 4 or 4½) and developed 500 b.h.p. (not 400). The De Dion rear axle was split (not solid), suspension was not by transverse leaf spring but by torsion bar, the frame was not box section but tubular, the shockers were not friction but hydraulic, and finally the blower was not traditional Mercédès but sucked from the carburetter in the more usual manner. I pause for breath.

(v) The 1938 Auto-Union was certainly not their most famous or successful model, in fact it only had two wins in the whole year, at Donington and Monza. The brakes were admittedly of the "all-leading shoe" variety, but were also interesting in that there were four shoes per wheel. The weight formula for 1938 stipulated that cars must weigh not *less* than 880 kg., whereas the contributor, getting it wrong way up, states that they had to weigh not *more* than 750 !

(vi) As the De Dion axles on both Mercédès and Auto-Union were split tubes, it is silly to speak of their being in torsion.

To continue would be tedious, but I hope I have made my point. Being misinformed about them is not going to help our budding experts, after the war, to better the pre-war German racing cars.

I am, Yours etc.,

PETER CLARK.

London, W.2.

[Very worthwhile corrections, for we confess that these points largely escape the notice of even expert readers, who accordingly go ill-informed.—Ed.]

* * *

Sir,

I am writing to congratulate MOTOR SPORT on continuing publication in these times of stress.

I have been a regular reader for about three years and appreciate it more than ever nowadays as the paper is now the only thing which keeps enthusiasm alive.

Like thousands more, I'm longing for the re-opening of Donington, Southport, Shelsley and Wetherby, where I spent many happy days before the war.

As an item of interest ; I remember about 18 months ago going up to Bradford from Glossop to view a weird and wonderful car—a 3 litre Sunbeam of 1918 vintage. It was a really tough job with a huge 5 in. diameter outside exhaust, round 50 gallon fuel tank at the rear and a truly impressive "cockpit" with a steel grating floor and numerous taps, pipes and oil drip-feeds.

There was of course an outside handbrake and gate gear-lever, flat wings over the front wheels and none on the rear. The car had actually been on the road up to 1925 and was reported to have been raced by Segrave at one time.

A friend of mine has a 1927 Amilcar "Surbaisse" model, but I think it's laid up for the duration. It is a really smart little car, and although it's lost most of its guts it is still very enjoyable to have a run in. The outside exhaust is home made and devoid of any silencer except a fish-tail. We once went round Woodhead on a Sunday afternoon with the back half of the exhaust removed. The effect was very pleasing.

For several weeks before the Dunkirk evacuation I drove a 15 cwt. Bedford truck which had a really sporting appearance with aero screens and "knobbly" tyres. The acceleration was very good and I was sorry to have to part with it. With so many enthusiasts in the Forces and so few sports cars on the road there is not much to keep one's interest in the sport alive ; but I think most old readers will continue with MOTOR SPORT. I always enjoy "Rumblings" and "General Notes."

Good luck to the paper and the Sport,

I am, Yours etc.,

GUY N. C. SMITH.

Edinburgh.

* * *

Sir,

I am writing to ask you if anyone can put me in touch with the whereabouts of a 1924-25 Grand Prix 2-litre Sunbeam ?

These cars were raced very intensively, as you know, at Brooklands by Kaye Don, Jack Dunfee and others from about 1927 to 1933. I believe one car went to Ireland as I remember the Ulster Trophy being won by one of them, I think in 1934.

I should be most grateful for any information as I am anxious to acquire one of these cars.

I would like to say how much I admire your war effort, as it must be very hard to get any racing information these days. Keep it up !

With best wishes,

I am, Yours etc.,

T. A. S. O. MATHIESON.

Thetford,
Norfolk.

* * *

Sir,

I am only 15 but I am a car catalogue collector and I have got all the 1938 and 1939 catalogues but only a few prior to 1938. Catalogues of the 3 and 4½-litre Bentleys, "30/98" Vauxhall, Alfa-Romeo and Bugatti, and other high-grade cars I would like to buy if possible. I have genuinely read MOTOR SPORT for 4 years. In passing, I would welcome anyone who would like to come and "talk cars" for an evening. If any soldier genuinely interested in sporting motoring and racing would like to come, he would be made welcome. Hoping you can help me and wishing you the best of luck.

I am, Yours etc.,

DAVID L. GANDHI

134, Heaton Moor Rd.,
Heaton Moor,
Nr. Stockport.

* * *

Sir,

I consider your idea for the meeting of enthusiasts in the Services an excellent one, and would like to say that any who happen to be in this district will be very welcome. I can always be found at the address given below.

LETTERS FROM READERS—continued

Actually I am more of a motor-cycle fanatic, partly through inclination, and partly owing to a sad lack of the necessary wherewithal with which to run the, to me, ideal car, i.e. either a short chassis "Red-label" Bentley or an O.E. "30/98" Vauxhall. At the moment I'm in the process of building up a racing side-car outfit, basicly Rudge but largely Burton in design, with which I hope eventually to frighten all and sundry, including, in all probability, myself. When this is finished, I intend carving about my 1934 Riley with the possible addition of a blower, during the intervals in which it is laid up owing to the lack of further petrol coupons—a sadly frequent state of affairs, I fear.

I am, Yours etc.,
G. H. G. BURTON.

"Penybryn,"
Whittington,
Nr. Oswestry,
Shropshire.

* * *

Sir,

Congratulations on the excellent August number of MOTOR SPORT and especially on Mr. Clutton's "The Vintage-Modern Axis" which is perhaps the most interesting motoring article I have read for several years.

Perhaps the contrast drawn between the really modern 12-cylinder Lagonda and the almost anonymous outdated, but nevertheless very expensive, competitors, will give serious food for thought to the producers and clients of the marque concerned, with eventual good results.

I was glad to see that Mr. Clutton did not this time condemn that remarkably good value-for-money car, the S.S.100, which has all the attributes of the vintage cars so near to Mr. Clutton's heart; i.e., high power-to-weight ratio, high gear ratios and small frontal area. Is Mr. Clutton's previously expressed dislike due to the low price of this car?

I cannot help feeling that if the S.S.100 hailed from the Continent Mr. Clutton would have held it up as an object lesson to our own sports car manufacturers.

As an owner of a Type 328 Frazer-Nash B.M.W. and also a Type 34 of the same make I was glad to read Mr. Clutton's appreciation of these marvellous cars. As a Jew in a Ford alongside my 328 in a traffic block the other day said, "What a pity THEY make such very fine cars!" Whilst agreeing that the finish of my Type 34 is not superior, I cannot agree that the transmission is not all that it should be. Certainly my clutch is now in need of attention, but then it has done 70,000 miles! Transmission trouble is only suffered by owners who rocket their tuned Type S.S.'s over trials courses. What car does not suffer under these conditions? Sensible "non-trial" owners have no trouble.

I am, Yours etc.,
CHARLES MAURICE.

London, S.W.2.

* * *

Sir,

I wonder whether you could give me some information about the little Amilcar "6" which P. Courtney drove up till the war? These cars have always interested me, and as his is one of the few which are (or were) still running, some details of the motor, both mechanical and historical, would be of great interest.

Wishing MOTOR SPORT all the best.

I am, Yours etc.,
DENNIS W. BATEMAN.

Staffs.

[Can anyone who knows the twin o.h.c. Amilcar Six send some details?—Ed.]

* * *

Sir,

Many thanks for keeping the good book going; its arrival is eagerly awaited every month.

The vintage articles especially are very welcome, as the writer has happy memories of a very clean 3-litre Bentley parked ignominiously away in a garage near home, on blocks with all wheels removed for painting, and with engine oil squirted carefully through each plug hole . . . .

We can only hope that Mr. Hitler's demands for our scrap will not be too exorbitant, or a carefully nurtured plan for replacing the existing engine with a "4½" after the war will probably go haywire . . . .

The real object of this letter is to disagree in part with Mr. Clutton, whose article in the August issue was very welcome—I enjoyed it very much.

It would, however, seem to be the beginning of a controversy, because although I believe that very few real motors are produced these days (in terms of prewar production) I should like Mr. Clutton to explain why he thinks that modern Alfas are only to be used by "Jew boys to take their—anyway to go to Brighton for the weekend."

Also why does the 540 K Mercédès come in for a bad handout?

To be truthful, I must state that I have had very little experience of expensive cars beyond Bentleys, but I fail to see why a very expensive and well-turned-out automobile should not be value for money, and "fit for the purpose intended." Or is it that the reviewers of the aforesaid automobiles had their tongues in their cheeks when they wrote out the report?

By the same token, are we to believe that the V12 Lagonda is not a most excellent car of its type, and that, according to its figures, it is the fastest standard closed car on the road?

Surely a properly shortened version of the Le Mans model would be more or less unbeatable on the road, indeed I hope to see the day when these motors are sufficiently aged to come within range of my humble pocket . . . .

Anything that Mr. Bentley does is certainly OK by me, for I am also a very nostalgic enthusiast, possessing quite a lot of affection for the cars which have gone before, not necessarily of Mr. Bentley's design, either.

I hope this letter is not too long, but I certainly believe in credit where it is due, so I hope Mr. Clutton will tell me why some of the "real" modern cars do not rate quite so high in his estimation.

I am, Yours etc.,
R. W. H. BARDEN.

R.A.F.

[Well, well, pick up the gauntlet, Sam! But did Mr. Clutton say anything against the V12 Lagonda except that it is a big car and its steering is low-geared? It is one of the fastest and greatest of the moderns.—Ed.]

* * *

Sir,

Herewith are details of a Special which may prove of interest to readers of MOTOR SPORT.

The chassis began life as the basis of a 1924 "De Luxe" Morgan, which after many years of faithful service was consigned to retirement in the corner of a local coalyard. The coal merchant had tried to dispos of the vehicle, but his powers of salesmanship failed to convince even the most credulous of intending purchasers that the tent-like object beneath a coal heap was actually a motor car with erected hood.

I acquired the car for the mere cost of the energy expended in heaving aside the coal, and the Morgan was towed away amid howls of derision from juvenile members of the local populace.

At this stage much credit must go to my good friend, Mr. E. J. W. Kay, who spent many tedious hours in the stripping and cleaning of engine and chassis.

The brakeless front wheels were scrapped, new stub axles being turned to accommodate Austin Seven wheels. The Blackburn engine was completely rebuilt and "hotted up."

The body is unusual and interesting, inasmuch as although possessing somewhat pleasing contours, no panel beating was employed, the tail and fin being made in three sections, each folded at the rear. The top section or fin is readily detachable to gain access to the rear wheel and transmission.

Extensive use of aluminium and plywood has resulted in a useful power-weight ratio—careless handling of the throttle producing tail slide on a dry concrete road.

Steering reduction is through a model T Ford box, the spindle of which is keyed to a light Amilcar wheel.

The gear change lever is outside, the quadrant being a Sturmey-Archer motor-cycle type, and is within comfortable reach of the driver's hand.

A very attractive instrument panel was made from blue and silver "Lamin-oid" (a material used for the manufacture of fancy combs, etc.), and with its attendant chromium-plated 6-inch rev. counter and gauges, etc., looks very businesslike. A good use was made of a spare drip feed pump, this component now serving as a dash controlled lubricator for the driving chains.

In conclusion, I must add that any aeroplane influence in the design may be due to the fact that both Mr. Kay and myself are actively interested in aviation.

I am, Yours etc.,
R. P. WINGFIELD.

London, N.21.

* * *

Sir,

Your road test article on Mark II Aston-Martin was very interesting, but you appear to be in error on the maximum r.p.m. of this engine. Mark II engines

LETTERS FROM READERS—continued

have a safety limit of 4,750, not 5,500 as stated, and even the "Ulster" engine only runs up to 5,250. The oil pressure also seems on the low side as minimum pressure should be 15 lbs. up to 2,000 r.p.m., and approximately 30 lbs. over that point. This seems to point to a certain amount of wear on the engine under test.

It is very pleasant to see a very fine car given a little publicity, and one hears so little of the Aston-Martin as a rule that it occurs to me that an article by someone well acquainted with these cars would be very welcome to a lot of your readers.

I am, Yours etc.,
H. FARQUHARSON.

Eccles,
Lancs.

[Diluted oil may have resulted in the low oil pressure reading, as when fresh oil was added, things improved.—Ed.]

* * *

Sir,

I have always admired the Frazer-Nash, so I purchased a chassis from a Hampshire breaker's yard in March.

For the very reasonable figure of 30/- I got a chassis, with wheels and axles, also transmission, but less engine or radiator. There was a rather ugly home-made body from the scuttle backwards, which was later modified considerably.

After a week of scheming and searching, the only suitable engine seemed to be a six-cylinder Riley, 1933 vintage, and with only one owner since new, as shown by the registration book. In spite of having heard bad reports about this particular model, I bought the engine—which had to be removed from the chassis single-handed, an energetic afternoon's work—and had just time to instal it in the frame, by the addition of a cross member, when I moved to Dorset, the car on tow behind a Ford V8. After a hectic tow, 120 miles of it, the next two months were spent in coupling up the transmission—very simple, because the Riley box was left on, being pushed into top gear—and finding a radiator—very difficult, but eventually an old s.v. S.S. was used. After impromptu trials, it was towed back to Hampshire, this time behind an A.C.

Once back in Hampshire, a Hornet D.H. coupé petrol tank was fitted, the back altered to fit, the wiring installed and the car was painted dark green. Further trials followed, and eventually it was taxed and insured, not without difficulty, and tried out on the road.

The engine was fairly woolly, so a decoke and new plugs followed; which made an enormous difference. After a month's motoring, which covered a couple of hundred miles, it was driven up to Yorkshire, which trip was accomplished with a 31 m.p.g. consumption. Speeds as tested by a Riley "Sprite" pacemaker were in the middle 80's, and still accelerating gently, which I consider quite satisfactory for a very much standard engine. No attempt has been made to depart from the standard engine details, even down to the original single S.U. and thick gasket. Acceleration is adequate, though not startling, but she will pull away from 15 m.p.h. in top quite happily if I feel lazy.

There is one unusual Frazer-Nash feature—an extra radius rod in the centre of the rear axle from the bevel box, which I have not seen before and only heard of once, in one of Mr. H. L. Biggs's articles, I think.

The chassis was originally an s.v. Anzani, but seems very much lower than the normal s.v. job, which appears to be due to the front axle shape.

The car was first registered in 1933 as APK 808, apparently called the G.P. model. I would be interested to hear from any previous owners of the chassis.

I rather suspect 1932 as the date of birth, as some, if not all, of the Frazer-Nash portion would appear to be considerably older, even late type G.N. is not out of the picture, I imagine.

The fact that a Talbot radiator shell covers the S.S. block causes considerable speculation, judging by the puzzled faces I have seen.

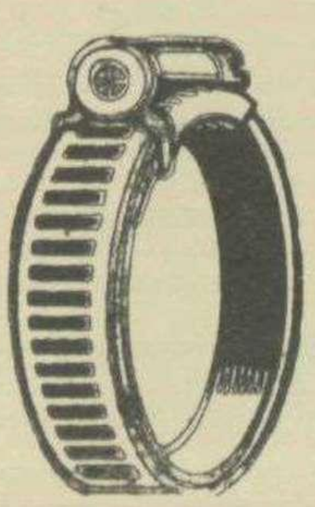
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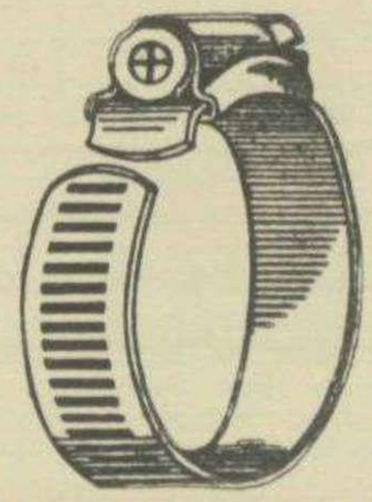
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A CAR FOR NOW—AND LATER ON

ECONOMY CARS AS THE IDEALIST WOULD LIKE THEM AND AS IMPECUNIOUS ENTHUSIASTS HAVE TO HAVE THEM

AT the present time the weekly motoring Press is trying to decide just what sort of car should be offered to Mr. Everyman after the war is won. The problem is not without interest, even to the enthusiast. The curious thing to the writer is that there is always an immense demand for new baby cars at around the £100-£150 figure when the secondhand market is flooded with late-model used babies at very low prices. If you buy a secondhand car for £50 and spend £20 on an overhaul, you save £30 over a new £100 car—and there were no £100 cars on the market when war came, the cult having lapsed since Morris led the way with the s.v. Minor after Gillette, with a 1,020 c.c. four-cylinder, and Waverley, with a 901 c.c. friction-driven flat-twin, had paved the way. Even if you drive 10,000 miles every year and your new car gives 10 m.p.g. better fuel consumption than your secondhander, it will be six years before this difference in purchase price is made up, even with fuel at 2/- a gallon. That, of course, is only part of the story, but it does seem a little surprising that so few prospective car-buyers will contemplate secondhand cars as to make a new £100 car a very sound commercial consideration. We suppose it must be put down to a general lack of engineering knowledge on the part of the buying public, which makes them distrust a used car, no matter of how reputable a make and recent date, allied to a universal vanity which craves the "newness" of a new car together with the latest in styles. All we can say is that for peace-of-mind motoring we would infinitely prefer to gamble £70 or so on an overhauled used car in the three or four-year-old Morris Eight or Ford Eight class, than £100, perhaps more, on some of the cars these amateur designers are perpetrating. Without in any way wishing to disparage that great car, the Jowett, it is rather hard to understand why so much enthusiasm is shown for a horizontally-opposed two-cylinder engine when every baby car maker has avoided the type for the last ten years or so. It is permissible to assume that our big manufacturers have adequate research facilities and are fully alive to the keen competition they have to face, yet they all say four-cylinders. When this two-cylinder enthusiasm in connection with a motor suitable for the million is coupled with a plea for Burt McCollum sleeve-valves, publishable words fail us. As we see it, the public will just have to get secondhand-minded in order to motor on a small purse in a small car after the forthcoming Armistice. They will never again tolerate the simple cyclecar. The original Austin Seven crossed with the present Type 500 Fiat is more of a possibility. But when you consider that the open touring Austin Eight—a most admirable little car, the excellence of which was overshadowed by the war, but which is giving yeoman service to the Army—turned out in quantity, costs £135, it is difficult to visualise anything much cheaper being possible for many years after hostilities cease. Much equipment could be dispensed with, but the weight, even with the simplest of body shells and a smaller engine, would never get down to 1923 levels. Too tiny an engine would kill performance, and reasonable performance hardly suggests a reversion to very simple brakes and small-section tyres. Add to this that over-riding fact which all the idealists seem to overlook, namely, that *big quantity production is essential to low price* and that such a production scale will be seriously curtailed for some years by the post-war economic situation and the time-lag in changing factories back from war to peace production, and £100 seems the lowest figure at which we can reasonably aim. It is argued that extreme economy will then be the desirable feature, which suggests a very tiny power-unit. It is happily stated that the ordinary owner will not require an average speed of greater than 20 m.p.h. Frankly, we gravely doubt this. On a long journey, to cruise on a comparatively straight road at not more than 35 m.p.h. is horribly boring, and if the excellent little Fiat, which can comfortably average 35 m.p.h. over long main road journeys, becomes noticeably a slow car up long gradients or when continual pick-up is necessary, what would a car limited to a maximum of around 35 m.p.h. do to driver and crew under similar conditions? And if such a car is only to be used for brief runs and town work, how extravagant it becomes against a good used car! We admit that, although it is surprising that it is so, the new car *does* command a ready market over the used car in even the lowest price-class, but we do feel that the distrust and vanity aforementioned, which militate against the used car, would hardly offset the monotony of a 20 m.p.h. average. There is also the aspect that after a year of war petrol has only risen by 6½d a gallon, and if we permit the hope that its price will stay stabilised from now onwards, fantastic fuel consumptions will have less to commend them when rationing is withdrawn. Wide-gap plugs have worked near-miracles for Vauxhall, but it must be borne in mind that special head layout is probably essential to its satisfactory functioning. So, putting the minimum engine capacity capable of ensuring adequate performance at around 600 c.c., we may hope for an average fuel consumption of nearer 50 m.p.g. than the present 40 m.p.g., from future economy cars—but more we cannot hope for.

All of which turns the thoughts of the truly impecunious to used cars. Although the price of recent models is rising, and is likely to continue to do so, older cars have fallen in price since the war commenced. For instance, lots of seven or eight-year-old 8 h.p. cars which used to cost £20-£25 now sell for the more easily produced "tenner," and recent bargains we have seen—admittedly we have not investigated their condition—include a Lancia "Agusta" saloon for £25 and a KN-M.G. Magnette saloon with E.N.V. pre-selector gearbox for £35. This tendency may not continue much longer, so it behoves the enthusiast who is seeking a cheap car to buy now and overhaul his car in readiness for after-the-war motoring. We are tempted to discuss a few aspects of this business of acquiring a really inexpensive economy car, and there will be those who will express horror that MOTOR SPORT should do so. Our answer must be that, while we are fully aware that our readers are rabid enthusiasts for fast motoring, there is reason to believe that a very reasonable proportion of them cannot run modern fast cars—which are hardly amongst the least expensive of this life's enjoyable possessions. The alternative is to acquire a vintage sports-car, which is what a lot of enthusiasts do, and is why we continue to devote as much space as we do to such cars. But our correspondence convinces us that many impecunious folk have to motor in ordinary or near-ordinary cars. They remain extremely keen on sporting motoring, but they just cannot fit sports motor-cars into their scheme of things. The writer of "General Notes" has long endeavoured to show that, while he has been fortunate enough to handle many excellent and rapid cars, he still finds plenty of fun in driving quite humble vehicles. That this has got home is proved by the number of letters we receive describing experiences, written in all keenness, of cars that are far removed from genuine sports types. So we feel disposed to put down a few thoughts that occur to us, relating to the choice of secondhand economy cars at the present time, for the benefit of just such enthusiasts as these, and we hope not to incur too enduringly the wrath and disgust of their more fortunate brethren.

We will confine our remarks to cars of up to 8 h.p. R.A.C. rating for which there is the excellent reason that (quite apart from any extra expense that a "Nine" involves in respect of lower m.p.g., more costly tyres, the extra 25/- a year for Sir Kingsley Wood and increased insurance rates) at the present time fuel rationing docks the owner of a "Nine" of 600 miles per annum over that possible with an "Eight," counting on a respective fuel consumption of 30 as against 40 m.p.g.

The very cheapest sort of vehicle will be the vintage small car, and under present conditions, with annual mileage cut to a quarter of the peace-time total and with more time to spare for working on the car in the garage and less hurry on the road, and not the same need for complete infallibility as formerly, your enthusiast should be able to get a lot of amusement running such a car on the basic ration. However, this is a very limited field. In the first place, the only really reasonable old cars of 8 h.p. rating are the 7.5 Citroen, 8/18 Talbot and the Gwynne. The latter has an engine capacity of over a litre, by reason of a long stroke, and, while a good performer,

A CAR FOR NOW—AND LATER ON—continued

only does about 35 m.p.g. All are difficult to discover in decent order and, even then, a keen vintagent may be running a reasonable mileage on supplementary coupons and consequently decide that such cars are not quite suited to his purpose. This brings the immortal Austin Seven into the picture. What a remarkable baby it is! Unchanged in fundamental design right up to the introduction of the Big Seven, it affords a lot of scope for the engineering class of owner and yet will give quite a good account of itself in the early three-speed form. There is, in fact, something very likeable about the cheeky little "Chummy" job and lots are still in daily service. This type of body seems to outlive the innumerable two-seaters that were put on this chassis, and if occasionally an ex-Army two-seater comes on the market, the appearance is rather terrible and the weight considerable. The performance of the old tourer is rather dull, but if a four-speed engine unit can be found, with the horizontal carburetter, it will install with very few alterations, considerably increasing the urge and giving much smoother running and increased dependability. These units can usually be obtained cheaply by buying a derelict van, but usually the bearings and piston rings definitely require renewing in this case. The question might now arise as to why one should not buy a saloon, which can be had for about the same price. Actually, even a small increase of weight will kill performance, and on a very small chassis, road-holding is quite noticeably changed by any top-damper. The writer in all seriousness believes that an old "Chummy" weighing 8½ cwt., with four-speed engine unit and a few other improvements, perhaps including a 5.25 to 1 rear axle, is a quite reasonable wartime hack. The sportsman will do well to avoid early saloons, but the "Ruby" saloon is getting a lot cheaper now, and is an admirable little car. Two-seaters are not so easy to find, and "Ulsters" are exceedingly rare, while the "Nippy," which offers very good weather protection and a good seating position, still commands around £40-£50. The later Austin Seven engines gave 17 b.h.p. at 3,800 r.p.m. and quite 40 m.p.g., and the jet system of big-end lubrication is entirely dependable, while the masked bores reduce oil consumption materially.

The Morris Minor comes to mind next, and the worst drawback of the early o.h.c. job is its three-speed gearbox and poor brakes. The engine itself is a very nice unit, and one not averse to tuning. The standard metal two-seater has good serviceable lines and fabric pointed-tail two-seaters are fairly common. The later side-valve Minor is also a thoroughly sound car, although the pre-hydraulic brake models, like the o.h.c. cars, had negative anchorage. With the four-speed engine unit, lightened flywheel, later cylinder head, and hydraulic brakes an excellent little car results, capable of good showing in trials. Lots of two-seater Morris Minors of both types are now available for less than £10, but the more desirable later job would doubtless cost rather more. The M.G. Midget in its earliest forms is another extremely fascinating little two-seater, with quite decent weather protection. Before the war they were fetching £15-£25 and more, but to-day you should not pay more than £10-£12. The very early cars had rod-operated brakes: cable brakes and metal bodies came later. The 847 c.c. engine gives over 23 b.h.p. at 4,000 r.p.m. in the M-type and 27 b.h.p. at 4,500 r.p.m. in the D-type, which has a different camshaft. In this model the axle was underslung and the three-speed gearbox had remote control. The M-type was current from 1929 to August 1932 and the D-type from October 1931 to July 1932. One sometimes hears people suggest that as these cars have only a three-speed gearbox, the four-speed s.v. Morris Minor unit might be put in for trials work. We believe that the job is a considerable one, and as the o.h.c. engines give plenty of power low down, weight is low, and bottom gear is about 17 to 1, there seems little point in making this conversion. The four-speed unit came in with the J-type, which had an entirely new cylinder head and gave 35½ b.h.p at 5,500 r.p.m. However, the J2 two-seater still fetches around £35 and a J-type engine will not, we believe, go into the earlier frame at any rate easily. It is, we believe, quite possible to mate a four-speed gearbox to the M and D-type engines. The Montlhèry C-type Midget of 746 c.c. is even rarer than an "Ulster" Austin Seven, in both blown and unblown guise, but we believe that with a "Double-Twelve" camshaft, twin carburetters and other modifications, a speed of at least 70 m.p.h. is possible from the M-type; indeed, we have heard of this maximum, and averages of 35-38 m.p.h. being achieved with a standard engine that was in generally good order. Nor should it be forgotten that if speed trials or M.C.C. and J.C.C. Brooklands events are contemplated in the post-war era, the class limit is nowadays 850 c.c., so that an Austin Seven or a Montlhèry M.G. is giving away 100 c.c.

All the foregoing cars have the decided advantage of being makes for which spares, either new or secondhand, are very easily procurable, even when they are ten years old. The Morris Eight is another excellent small car, albeit it has only a three-speed box, and throws its shock-absorbers away, but it is still in the "expensive" category, the cheapest editions, which are usually saloons, being around £20-£40. The Ford Eight has plenty of urge, and the engine will stand some hotting-up, while replacement engines are available should that ship get in, but open-bodied cars are very few and far between. The Jowett is hardly a sportsman's car, although they have been made to go quite quickly, notably by Miss Worsley, the Hepworth brothers and R. R. Hall. If you succumb to the fascination of the flat-twin and don't care what your car looks like, it should be possible to get hold of an early two-seater for a really ridiculous sum and still get at least dependable transport, of a kind which the late R. O. Shuttleworth, for all his fast cars, did not despise. The Fiat 500 is, perhaps, the nearest practical approach to the ideal utility car, but it commands prices from £40 upwards and the second year models have several definite improvements over the earlier cars.

In bringing to mind these very inexpensive economy cars, we would emphasise that for serious motoring we strongly recommend that a reasonable overhaul be given, which suggests new piston rings if not a rebore, attention to bearings, relining clutch and brakes, and fitting new tyres. If the final outlay then seems to be getting excessive in relation to the "ordinariness" of the vehicle, it becomes a matter for personal decision whether or not to abandon the scheme in favour of a real vintage sports-car or a home-built job. So far as the former is concerned, we have absolutely nothing against it, except that we feel that the outlay may in the end be doubled before equally dependable motoring results, while, as to home-brewed cars, surely it is all wrong to create something that looks fast and costs more money, but is actually no faster than the cars just reviewed. The enthusiast quite rightly seeks to express himself in an individual manner, but let us remind prospective owners that an ordinary utility car, maintained in mechanically sound order, outwardly clean, and perhaps bearing club badges or lightened wings or such like, is every bit as good an indication of enthusiasm as the ownership of a decrepit and unreliable car of little-known virtues. As to that other topic referred to in this article, the post-war economy car, fortunately it is not likely to bother your enthusiast, for when he has that much to spend he will spend it on increased performance or vintage restoration and pot to extremes of economy design.

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A ROAD TEST OF THE V12 LAGONDA

AN HONEST REPORT ON ONE OF THE GREATEST OF PRESENT-DAY CARS. OVER 100 M.P.H. IN A SHORT-CHASSIS SALOON

WE are as unlikely ever to own a V12 Lagonda as are most of our readers. Nevertheless, we are intensely interested in this car, rather in the same way as we used to be in the Grand Prix Mercédès and Auto-Unions, the chief difference being that we have now had the privilege of driving one.

It is quite unique, and if you are tempted to offer criticism on any aspect of its behaviour, you have to keep remembering that the incident probably happened at 95 m.p.h. or more. Precious few cars can go that fast, anyway. It is really two cars in one, 3,000 r.p.m. being the critical point at which the change takes place.

If you move off in second and change up early, you have a smooth town carriage which gives no hint of the power available at higher speeds. You can come down to a snail's pace in top gear and the take-up is perfectly smooth, although the acceleration is not shatteringly brisk.

Keep her over 3,000 r.p.m., however, and the performance must be almost without equal. Thanks to the well-chosen gear ratios, this is no difficult matter. Bottom gear literally hurls the car off the mark, and if you take her up to 5,500 in every gear, the acceleration right up to 100 m.p.h. passes belief. All changes except from second down to bottom are synchro-mesh: only a brief pause is necessary, but it certainly is possible to anticipate things and move the lever too quickly. Whilst double de-clutching is never necessary, entirely clutchless changes are not to be encouraged. It is not a particularly "friendly" gear change; owing to the heavy synchronising arrangements, quite a long lever is needed to exert the necessary brute force on the mechanism, and the action is rather harsh. This is a pity, for the critical 3,000 r.p.m. means 60 m.p.h. in top (with the 4.45 to 1 axle, anyway) and you want to make very frequent use of the gearbox to get the best performance on secondary roads.

The clutch is beautifully smooth and, in spite of modifications to cope with increased power output, quite light. The Lockheed brakes are deceptively smooth, and give an erroneous first impression of flabbiness. On more mature acquaintance they inspire complete confidence and you realise that there is no point in having brakes so powerful they lock the wheels at the slightest provocation.

The steering is extraordinarily "Bentley" in that you wind it up against an ever-increasing camber, as you approach full lock. It is rather low geared, to cut out any possible kick from the independent front suspension, and the wheel simply whistles back when you release it after a course round a corner. So much so, in fact, that if you let go of it altogether, rather than control it as it slips through your fingers, it tends to bounce momentarily on to the other lock. For this reason, and because the ratio is so low, it is necessary to concentrate fairly hard, and, having planned a course round a corner, to stick to it. The cornering is really magnificent, but you cannot "dice" her round; it is extremely difficult to make her slide, and the practice is not to be encouraged.

The silence of the engine is unequalled, and elaborate steps are taken to render the whole of the mechanism unobtrusive in every way. A neat aluminium shield surrounds the exhaust manifold on each bank of cylinders, taking the hot air out through a grille set low on each bonnet side. There are twin silencers in each pipeline, and the two S.U. carburetters draw air through a communal Burgess silencer. That the result is effective we can best illustrate by stating that when, after a momentary check at 80 m.p.h., the right foot goes down again, there is no increase of sound of any sort—the car just surges forward again. In this case there is nothing but the rising rev-counter needle to tell the story. We need hardly say that the gearbox is virtually dead silent on every ratio.

What more would you like to know? The car we drove was a short saloon in a pleasing pale lavender shade with pink leather upholstery. It is quite a light-looking body, with narrow screen and central door pillars; not very big, though of course there is ample room for four passengers in superlative ease. The driving seat is adjustable in every direction, and the resulting position is perfect, with splendid visibility. There is a large but stupid luggage boot, with a sloping floor and the door hinged at the top so that you can't stand things on it. The general finish is superb. Controls on the dash are mainly grouped into a central circular panel of the same diameter as the speedometer and rev.-counter, which are on either side of it. There is also a fourth circular panel to the right of the steering column, with ammeter, fuel gauge, and thermometer—the latter two both electrically operated and recording only when the ignition is on.

We hope our remarks about the steering, brakes and gear lever have not given an impression that this Lagonda takes a lot of getting used to. On the contrary, you feel at home remarkably quickly, for the personality of the car impresses itself upon you almost immediately. Within a very short time we found ourselves bowling along in the 70's and 80's on quite a secondary road. For one thing, you can see where you are going, with a fine view of both front wings and the whole of the "fore deck." The bonnet is quite low, and from the back seat there is a curious impression of looking downhill along the bonnet. From this position, by taking a sight on the centre of the windscreen, one can also perceive that at 80 m.p.h. and over there is some sideways movement of the radiator, but the driver does not notice it. Otherwise, everything is very firm, although in point of fact we do not think the chassis is intended to be absolutely rigid, for some movement is apparent when it is subjected to "slow torsion," e.g., coming off a ramp or kerb at an oblique angle so that one rear wheel is left considerably last.

One point which we do think calls for criticism is that, in so superbly silent a car, nothing whatever seems to have been done to prevent wind noise. There are projecting door handles, glass rain-deflecting louvres over the windows, a

TECHNICAL DATA

Engine: Twelve cylinders, 75 mm. bore × 84.5 mm. stroke, capacity 4,480 c.c. R.A.C. rating 41.85 h.p. B.h.p. 180 at 5,500 r.p.m. Two six-cylinder banks at 60°, blocks and crankcase forming one nickel iron casting. Detachable cast iron heads.

Two valves per cylinder, one overhead camshaft per bank, adjustable tappets, final drive to camshafts by two short chains from gear drive off crankshaft.

Four-bearing crankshaft has balance weights and torsional vibration damper. Two oil pumps, one feeding the main bearings and big ends, the other feeding the valve gear and all subsidiary points. Light alloy rods run direct on nitro-hardened journals.

Delco-Remy coilignition, vacu-matic control, separate system for each bank. Pump water-circulation, thermostatic radiator shutters. Two S.U. downdraught carburetters, one for each bank on hot-spotted manifold. Thermostatic mixture control.

Transmission: Single dry plate clutch, with "outboard" bearings behind withdrawal to ensure perfect alignment for smooth take-up. Open prop. shaft with needle roller universals. Four-speed gearbox with synchro-mesh on all changes except from second to first. Ratios (on short chassis saloon under review), 4.45, 5.56, 7.43 and 14.46; reverse 13.3 to 1) 100 m.p.h. in top=5,000 r.p.m. Gearbox bearings pressure lubricated from plunger pump. Lockheed twin-master cylinder brakes, 16" drums. Hypoid rear axle.

Chassis: Independent front suspension by four arms transmitting movement to long torsion bars anchored amidships to the central cruciform chassis bracing. Automatic chassis lubrication. Rear suspension by inclined semi-ellipties outside frame, with torsional anti-roll rod. Armstrong hydraulic shock-absorbers all round, with manual over-riding control to rear. Box section chassis 8" deep. Twenty gallon fuel tank, twin S.U. pumps, electrical warning light comes on at 5 gallons, no reserve. 12 volt C.V. electrical system, twin batteries, 90 a.h. capacity, under bonnet. 6.50" × 18.0" tyres. D.W.S. permanent jacks.

Chassis Weight: 29 cwt.

A ROAD TEST OF THE V12 LAGONDA—continued

guttering around the roof and other little items which all add their quota of whistles and squeals. At 90 m.p.h. it really is difficult to carry on a conversation between back and front seats, but apart from that, wind noise is intensely tiring to the passengers: it also conveys to nervous passengers an impression that they are going a great deal faster than they really like. We recall a very fast run in a Studebaker in which there was a truly remarkable absence of wind noise, and the owner, a commercial traveller who used to cover 35,000 or 40,000 miles a year, said that he had bought the car after comparative tests for that very reason.

The Armstrong ride-control shock-absorbers at the rear work admirably, but we personally should like the range of possible hardness extended somewhat. Similar shockers are used in front but are not controlled from the driving seat; the adjustment is, however, quite accessible—we remember admiring its exposed position on the Le Mans cars. The front suspension, by parallel arms linked to a single ultra-long torsion bar on each side, we have already praised, and we do not think it has any practical snags such as cruelty to tyres. Rear suspension is orthodox semi-elliptic.

We made no attempt to record acceleration or braking figures, because we had to "get somewhere," but a few technical details are appended in a separate panel. We swept along a familiar by-pass at about 104 m.p.h. (greatly to the delight of an approaching column of pedestrian soldiery) and exceeded 100 m.p.h. on a great many other occasions. In fact, we topped the hundred in places where we had never previously thought it possible to exceed 80. Incidentally, the engine is not so inaccessible as some people make out. We had one of the valve covers off to adjust a slightly noisy tappet, and it was not a shattering task. The tappet layout is remarkably neat, and entirely obviates side-thrust on the valve stems, being virtually a side-valve layout upside down.

In spite of their inevitable pre-occupation with war work, Lagonda Ltd. are carrying on with research work and improvements, so that we may hope with some confidence that their V12 will still be amongst the world's greatest motor-cars for a long time to come and after the war is over, if not forgotten.

ONLY A MEMORY

It happened when we were trying out a special, notably potent Rover. Feeling that the lady on our left might be finding things a trifle dull, for Kentish scenery is flat and not especially interesting, we craved a duel with something equally rapid.

In the mirror a T-type M.G. hove in sight . . . . As it drew alongside we thrust out a thumb, changed down, and gave our motor more gun. The M.G. opened out also. Then we realised it contained two smiling policemen; they use M.G.s round Canterbury way, you know. For some reason we ceased to wish to do battle, though the road was definitely de-restricted! A pity, really, for our car could do 85 m.p.h. and standard M.G.s of this kind do about 80, so, unless they hot up the police versions . . . .! Oh, well . . . .

JUST PETROL

"The Autocar" recently published some interesting notes on C. G. H. Dunham's Brooklands "12/70" Alvis. Originally run on a fuel composed of 60 per cent. racing ethyl, 30 per cent. benzole and 10 per cent. ethyl, it became nearly 6 m.p.h. faster when 66⅔ ethyl, 33⅓ benzole was used. However, this engine developed about 40 b.h.p. per litre, whereas the Miller which America says does so well on commercial ethyl petrol is credited with nearly 100 b.h.p. per litre. The Alvis lapped at 110.43 m.p.h. on a 4.25 to 1 top gear.

NO RETURNS

Several letters have been received from readers complaining of their inability to procure "Motor Sport." Newsagents will not order copies if they have not received a definite order from their customer.

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A SELECTION OF MOTOR SPORT ROAD TESTS

THAT HAVE APPEARED IN PAST ISSUES

If you do not see the road test that you require write us a letter. We may have it in stock, but not published below.

Make of Car	Issue
A.B.C. 11 h.p. 2-cyl., 2-seater	Feb. 1926
A.C. 2-litre, short-chassis, 15.7 h.p. 2-seater	July 1936
A.C. 2-litre, 16.40 h.p., 3-seater	Oct. 1927
A.C. 2-litre, 16.66 h.p., 2-seater	March 1926
A.C. 2-litre, 16.66 h.p., 4-seater	June 1934
A.C. "Ace" 16/80 h.p.	July 1937
Alfa-Romeo, 1½-litre supercharged 6-cyl. Charles 2-seater (1929)	March 1934
Alfa-Romeo 1¾-litre supercharged 8-cyl. "Zagato" 2-seater (1932)	July 1934
Alfa-Romeo 2.3-litre supercharged 8-cyl. "Zagato" 2-seater (1933)	Aug. 1936
Alfa-Romeo 2.3-litre supercharged 8-cyl. 4-seater (1931)	Aug. 1932
Alvis 11.9 h.p., 4-cyl., "Firefly" saloon	Feb. 1933
Alvis 4-cyl., 12.60 h.p., 2-seater	July 1931
Alvis 6-cyl., "Silver Eagle" 4-seater coupe (1929)	Aug. 1931
Alvis 6-cyl., "Silver Eagle" 4-seater	June 1930
Alvis 3½-litre saloon	Feb. 1936
Alvis Speed Twenty Vanden Plas saloon	Feb. 1935
Alvis Speed Twenty Charlesworth saloon	Feb. 1934
Alvis Speed Twenty 4-seater	June 1932
Alvis 12/70 4-door saloon	July 1938
Ansaldo 2-litre, 4-cyl., o.h.c., 4-str.	Sept. 1924
Armstrong-Siddeley 20 h.p., 6-cyl. 4-seater	July 1933
Aston-Martin Mark II, 11.9 h.p., 2-4-seater	Jan. 1935
Aston-Martin Ulster 11.9 h.p., T.T. 2-seater	Oct. 1935
Aston-Martin Le Mans 11.9 h.p., 2-4-seater	June 1933
Aston-Martin International 11.9 h.p., 4-seater	Aug. 1932
Aston-Martin T.T., 11.9 h.p., racing 2-seater	Dec. 1931
Aston-Martin 11.9 h.p., 2-seater	Jan. 1930
Aston-Martin 2-litre Speed model	May 1938
Aston-Martin 1935 Ulster	Aug. 1937
Auburn 30 h.p., 8-cyl., supercharged 2-seater	June 1935
Austin Seven Boyd Carpenter 2-str.	Sept. 1930
Austin Seven "65" 2-seater	Jan. 1934
BENTLEY 3½-litre, 6-cyl., Vanden Plas, 4-seater	Nov. 1933
Bentley 4¼-litre, 6-cyl., Park Ward saloon	June 1936
Bentley 6½-litre, 6-cyl., long-chassis saloon (1928)	Dec. 1936
Bentley 4½-litre Vanden Plas coupe	Aug. 1938
Bentley 8-litre sports 2-seater	April 1938
Bugatti 3.3-litre 8-cyl., Type 57 saloon	May 1934
Bugatti 2.3-litre 8-cyl., Type 55, supercharged, 2-seater	July 1932
Bugatti 2.3-litre, 8-cyl., Type 43, supercharged 4-seater (1930)	Dec. 1932
Bugatti 2 3-litre 8-cyl., Type 43, supercharged 4-seater	May 1930
Bugatti 3-litre, 8-cyl., Type 44. saloon	July 1928
CITROEN, Twelve f.w.d. saloon	July 1938
Crossley 20/70 h.p., 4-cyl., s.v. 4-str.	Nov. 1925
Crossley Ten. 1¼-litre "Regis" saloon	Jan. 1936
Crossley Ten, 1,122 c.c. 4-seater	April 1932
Crouch Anzani 12.30 h.p., 2-seater	Aug. 1924
DARRACQ 12.32 h.p., Weymann saloon	Sept. 1924
Delage 14 h.p., 2-litre, 2-3-seater	June 1927
Delage 8-cyl., sports saloon	April 1930
Delage D.8 120, drophead coupe	May 1938
Delahaye 3.5-litre "Coupe des Alps" drophead coupe	Aug. 1936
Delahaye 3½-litre drophead coupe	Dec. 1937
D.K.W. "Special" saloon	Feb. 1938
ESSEX Terraplane 8-cyl. 4-seater	Sept. 1935
Excelsior 5¼-litre, 6-cyl., super-sports test chassis	Sept. 1927
FIAT 20.70 h.p., 6-cyl., 2-4-seater	April 1933
Fiat "Balilla" saloon	May 1934
Fiat "Ardita" 17 h.p., 4-cyl., saloon	Feb. 1934
Fiat "Balilla" 10 h.p., 2-seater	Jan. 1935
Fiat 6 h.p., Type 500, coupe	March 1937
Frazer-Nash 6-cyl., 1½-litre (Blackburn) 2-seater	July 1933
Frazer-Nash 4-cyl., 1½-litre T.T. Replica push-rod o.h.v. 2-3-str.	Nov. 1931
INVICTA 4½-litre low chassis, 4-str.	March 1931
Invicta 4½-litre Weymann saloon	June 1929
Invicta 4½-litre saloon	Dec. 1929
Isotta-Fraschini 45 h.p., 4-seater	Oct. 1926
LAGONDA 2-litre, 4-cyl., twin o.h.c. 4-seater	Jan.-Feb. 1928
Lagonda 2-litre, 4-cyl., twin o.h.c. supercharged 4-seater	Oct. 1930
Lagonda 4½-litre, 4-seater	May 1936
Lagonda 4½-litre Rapide 4-seater	May 1935
Lagonda 4½-litre, 4-seater	Jan. 1934
Lagonda Rapier 10 h.p., 4-seater	Sept. 1934
Lagonda 16.80 h.p., 6-cyl., 4-seater	Jan. 1933
Lagonda 3-litre, 6-cyl., 4-seater	March 1932
Lagonda 2-litre, 4-cyl., twin o.h.c., 4-seater (1928)	March 1931
Lancia Aprilia, Type 238, saloon	June 1938
Lea-Francis 1½-litre supercharged T.T. 2-seater (1929)	June 1934
Lea-Francis 1½-litre supercharged special T.T. 2-seater	Sept. 1933
Lea-Francis 1½-litre supercharged "Hyper" 4-seater	Aug. 1930
Lea-Francis, 14 h.p., 6-light saloon	Dec. 1938
Leyland Eight (1929), 2-seater	Feb. 1938
MERCEDES-BENZ Type 540K, 5.4-litre, 8-cyl., supercharged, 2-str.	April 1937
Mercedes-Benz Type 500, 5-litre, 8-cyl., supercharged, 2-seater	Nov. 1934
Mercedes-Benz 12.40 h.p., supercharged 2-seater	June 1925
Mercedes-Benz 36.220 h.p. supercharged, 2-4-seater	April 1928
Mercedes-Benz 33.180 h.p., supercharged, 4-seater	Aug. 1927
Mercedes-Benz 2.3-litre, saloon	April 1938
M.G., 6-cyl., Mark I, 4-seater	May 1931
M.G. Magna, "L" 2-seater	Nov. 1933
M.G. Midget "P" 2-seater	Aug. 1934
M.G. Midget "J3" supercharged, 2-seater	May 1933
M.G. Six Mark I, saloon	Aug. 1930
M.G. Midget Double-Twelve racing 2-seater	June 1930 & Aug. 1930
M.G. Midget "J1" 850 c.c. 2-str.	Sept. 1932
M.G. Magnette "N" 4-seater	Feb. 1935
M.G. Midget "PB" 2-seater	April 1936
M.G. 14/40 4-cyl., 3-speed, 4-seater	Oct. 1925
M.G. Midget "T" 2-seater	Jan. 1937
M.G. 14/40 h.p., 4-cyl., super-sports, 2-seater	May 1927
O.M. 6-cyl., 2-litre, 4-seater	Oct.-Nov. 1928
PACKARD V12-cyl. 57 h.p. coupe	Feb. 1934
Peugeot "201" 4-cyl., 1 122 c.c. saloon	Sept. 1931
RAILTON Terraplane 4-seater	Oct. 1934
Railton Light Sports tourer	Dec. 1935
Railton Cobham 28.8 h.p. saloon	Sept. 1938
Riley Nine "Monaco-Special," two-carb. saloon	March 1931
Riley Nine, 4-seater	June 1931
Riley 16 h.p., Big-four Kestrel saloon	June 1938
SINGER 1½-litre, 6-cyl., Le Mans 2-seater	March 1935
Singer Nine, 4-seater	March 1933
Squire 1½-litre, 4-cyl., 2-seater	Aug. 1935
S.S. I special-bodied 2-seater (1933)	Feb. 1934
S.S. I coupe	June 1933
Steyr Type XII, 14.35 h.p., Weymann saloon	Aug.-Sept. 1928
Stutz "Black Hawk" supercharged 4-seater	Jan. 1930
Stutz 5-litre, 8-cyl., 4-seater	Dec. 1927
Sunbeam 3-litre 6-cyl., (twin o.h.c.) fabric saloon	Nov. 1927
Sunbeam 6-cyl., 21 h.p., (push-rod) Speed Six saloon	Dec. 1933
TALBOT "90" Brooklands-bodied 2-4-seater	April 1931
Talbot "105" sports saloon	April 1934
Talbot 3½-litre saloon	March 1936
Talbot Ten "Rally" 4-str.	Oct.-Nov. 1936
Talbot "105" Vanden Plas 4-str.	Nov. 1932
Talbot "90" 4-seater	Nov. 1930
Talbot Ten sports coupe	June 1938
Tatra 4-cyl., 1,154 c.c., coupe	Dec. 1932
Terraplane, 8-cyl. 29 h.p., 4-str.	July 1935
Triumph 2-litre "Vitesse Six" saloon	April 1935
Triumph 10 h.p. "Gloria Southern Cross" 2-seater	June 1935
Triumph 10 h.p. "Gloria" saloon	Jan. 1934
Triumph Nine "Southern Cross" 4-seater	June 1932
Triumph Eight "Gnat" 2-seater	Aug. 1931
Triumph Eight, supercharged 2-str.	Dec. 1929
Triumph Dolomite 14/60 saloon	June 1937
VALE-SPECIAL 832 c.c. 2-seater	Aug. 1933
Vauxhall 30/98 O.E. 4-seater (1925)	Jan. 1936
Vauxhall 30/98 O.E. 4-seater (1924)	Dec. 1930
Vauxhall 20/60 h.p. "Hurlingham" 2-seater	Feb. 1930
Vauxhall 17 h.p., 6-cyl., "Cadet" saloon	Sept. 1931
Vauxhall 14 h.p. "Stratford" 4-str.	Sept. 1933
WINDSOR 4-cyl., 11 h.p., "Special" 2-3-seater	Nov. 1926
Wolseley Hornet Swallow 2-seater (1933)	April 1934
Wolseley Hornet (12.08 h.p.) saloon	Sept. 1930

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