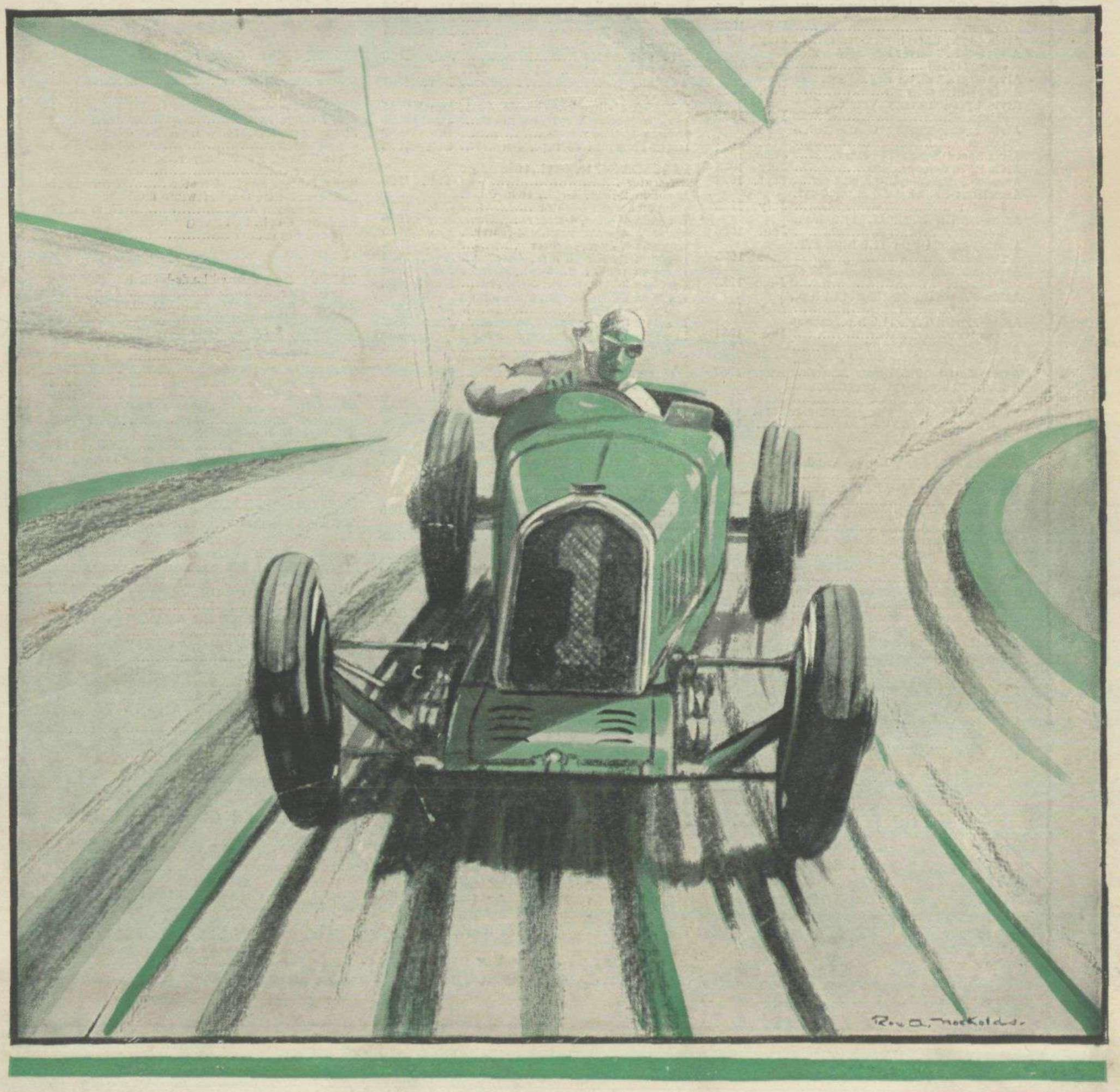
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MOTOR SPORT

INCORPORATING **Speed**

ONE SHILLING MONTHLY



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. 1½-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., 1122 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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THE VALUE OF THE EXPERT

AT the present time, when we are faced with very grave peril and when extensive bombing attacks and possible invasion of these shores seem inevitable, the expert motorist again seeks a way of effectively serving his country. There has, in the interim, been a little more employment of the motoring expert. Some have joined R.A.O.C. Training Schools, such as that operating at the Frazer-Nash works and elsewhere, as civilian instructors, others are answering the call of the mechanised Army for experienced storekeepers and driving instructors. A.R.P. is asking for car-owning volunteers for communications duties, and in certain cases the L.D.V. is making use of cars.

There can be no doubt that it is German efficiency which has enabled German mechanised forces, aided by dive-bombers, to sweep through Holland and Belgium and far and furiously enough into France to cause the French Government to surrender. We, in motor racing, saw the seeds of this all-conquering efficiency as long ago as 1935, when Mercédès-Benz and Auto-Union commenced to dominate international racing with State-aided teams ; saw, too, the shadow of Germany's military forces whenever we visited one of her motor races.

Now every Briton must set to, to hold, turn back, and smash this mechanised efficiency. Our aircraft, no less our Army units, are first-class ; our Navy rules the sea. When it comes to personnel, let us make no mistakes about appointing the best, and giving the expert his chance. Authority is apt to regard every car owner as an obviously skilled driver. We maintain that drivers able to handle difficult vehicles and fast cars efficiently are not any too numerous. In peace, we heard much of the weekly toll-of-the-road, proof that hundreds of drivers of utility vehicles were incompetent. If you believe this an exaggeration, knowing lots of ordinary motorists who have never come to any harm, we can only suggest that in very many cases only his low speed and good brakes save the casual motorist's skin. Consider what happens when some small, static obstruction appears on a narrow, busy road. Watch the great proportion of drivers who slow or stop yards from it, or crawl round it, or swerve untidily round it in a wide sweep, and generally find elementary judgment of speed and distance, allied to operation of an essentially controllable vehicle, acutely embarrassing. Unless similar problems confront such drivers at higher speeds, with less space and time to spare, they never suffer an accident, and, as they motor every day, they are regarded, by themselves and the community at large, as expert motorists. If such persons display equal lack of proficiency in handling the tennis-racquet, the golf-club, or the cricket bat, they are continually reminded of their incapabilities in competitions, until they either take steps to do better, or openly accept the fact that they are only moderate players. But at the wheel, what matter if unproficiency wastes a few moments ? They may unnecessarily hold up an urgent service, but no one notices.

In this grave hour, it may at any time be necessary to mobilise large numbers of cars, in spite of the pains now being taken to immobilise them. Let the really expert driver serve with them. Let us hope, too, that when peace breaks out, a grateful Government will particularly remember that motor racing, if it seems to do nothing more, does at least encourage that skilled labour which every minute of the day and night now is contributing to our growing store of aircraft, munitions and equipment ! Go To It !

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ON SOME UNWRITTEN LAWS OF THE GAME

EVEN before the present war, our motoring was restricted and controlled by so many Acts and Laws and Regulations, enforced and supervised and ensured by blue-uniformed gentlemen in fast and expensive mobile boxes, that it is a relief to discourse on some of the *unwritten* laws which govern our world. True enthusiasts have come to accept such laws quite naturally, but I know from our volume of correspondence that there is a number of newcomers to the game who, while just exuding keenness, are not yet acquainted with quick motoring in all its aspects. So let us attempt to put out a few thoughts which will prevent these good people from unwittingly offending against a very strict code.

First: *The White Helmet.*—This headgear is rather becoming on good-looking men and attractive girls, but it is entirely out of place in any ordinary car. This applies not only on the road, but to competition events. The characteristically-cut, real Continental white hat may just be excused in a truly fast, Continental car of pure breed, but, apart from this, its place is in first-line racing only. In the two-wheeler world, pillion fairies, you may observe, very often wear the Persil-white helmet. Well, we will confine our criticisms to our own sphere, with the observation that anyone who can be persuaded to come out in all weathers to cling to a square foot of unsprung seat in the upper seventies can surely be excused a lot of things; and think of the awful headgear they would affect if they weren't . . . !

But in our world, helmets are best avoided altogether. If you must, stick to an old leather flying hat, and insist that the lady on your left wears something in dark Grenfell cloth.

Really, the whole lesson is: not to show off because you like fast motoring and fast cars. If I encountered youth in a smoking Cornet, dressed in dicing hats and goggles, the car's doors wearing big number discs on which were painted numbers in quite an unofficial style, a thin strap serving in no way to retain the bonnet, stoneguards affording very problematical protection to radiator and lamps, a conspicuous fan-tail neither reducing nor improving the exhaust-note, and imitation knock-on hub-caps glistening on stud-secured wheels, I should fold up with a pain much worse than that which I get from consuming unripe raspberries. As it is, I suffer quite nastily whenever I see any of these things on so-called sports-motors.

When it comes to carrying comic notices or deliberately wearing silly clothes in trials cars, I simply cannot understand the outlook of the crews concerned. Such goings on may arouse a smile at the time, but must do untold harm to the sport in the long run. If you saw folk playing tennis in bowler hats, or golfers bearing "Dig for Victory" or similar inscriptions, you would probably feel you had a perfect justification for being facetious, and so it must be when a public which does not regard trials any too lovingly sees silly, popularity-attracting devices on competition cars. In giving this much good advice, I am very much a man in a glass house throwing brickbats about, and not in a Triplex-glass house either. I have been too lazy to remove dummy hub-caps from one car I owned—fortunately a slow closed carriage, so I did not offend directly against our world—and at one time I used to couple dirty tennis shoes, gloves and helmets and goggles with real enthusiasm, no matter how ordinary the motor. Not owning a Bugatti or a "Floretta" I must have been the laughing-stock of not a few fast drivers, but I willingly admit this, nor shall I feel all the writing I have had the privilege of doing in the past for MOTOR SPORT in vain—military service may soon spell its termination—if only every reader will make a pledge never to offend in these matters, either in his war-time motoring or subsequently. I am not a spoil-sport. I like the loud sports jackets and weird trousers of the men, and the vividly-coloured clothes and startling make-up of the wonderful girls who form the back-cloth of every big motor-racing gathering. While I think racing men should present themselves and their cars in clean condition on the starting line, I know the amateur enthusiast must be allowed his filthy flannel bags and finger smeared motor at the smaller meetings. But I do detest road-motorists attempting to show off by wearing unnecessary clothes or by unnecessarily decking-out their cars, and I do feel definitely homicidal when people cheapen the game by displaying stupid notices on trials cars, or by otherwise acting foolishly in public—it is an unfortunate fact that the latter is not a warning of something that we do not want to happen when competition-motoring is resumed; it happened in the past, for I have seen such notices even in classic M.C.C. trials, and I have seen white overalls worn by a sports-car crew at a very minor speed hill climb, and I can't forget rally cars of sober performance being over-diced in full view of crowds at the starting points. All this kind of thing really results from thoughtlessness or from translating enthusiasm in the wrong way. However, as in school and college, so in motoring, unwritten laws sometimes present pretty problems. For instance, even though you quite see in how bad taste is an imaginary racing number on your car, you might not realise that to carry actual competition numbers before or after an event is equally wrong. The best trials organisers request the removal of numbers as soon as a driver finishes in, or retires from, a trial, but too often you see rally cars and sports-cars entered for a high speed trial, displaying competition numbers days after the event in question has been decided. On all ordinary cars the background disc or square should also be defaced from the bodywork, although I think a really famous racing-car can justifiably be allowed such adornments, providing a reasonable attempt has been made to wash out the actual numbers. Again, there is the matter of pet car names. When I see things such as "Xexexetus," "Mrs. Frequently," or "Icancatchit" blazoned along a bonnet I try to look unconcernedly away; this is surely just as much an outrage against the enthusiasts' code as anything mentioned so far. But in some cases, if a name that a particular car has made famous, or one which has some definite association with the owners, is quietly displayed, one has to alter one's view. One of the best-kept cars I have ever seen is the all-black s.v. Aston-Martin, rebuilt for Forbes by William Lambert. It carries a small nameplate inscribed "Nigger," beautifully rivetted to the bonnet, which in no way offends against good taste, although the name is only in memory of a well-known o.h.c. racing job of this make which the owner greatly admires. All my cars and most of my friends' have had stupid pet-names, but we have never had any desire to paint them up in prominent places. Sometimes a clever mascot can serve instead, as with the long arrow which used to ride on the radiator cap of Major Ropner's racing "30/98" Vauxhall, "Silver Arrow" at Brooklands in '24. Yet those big pandas or teddy-bears which exotic blondes have a weakness for nursing in rally cars again definitely offend; mercifully most of them go off home soon after the daily Press photographers leave.

Some enthusiasts seem to think that because they cannot own a fast car there is no point in observing the unwritten code. Most emphatically do I disagree. Any car, no matter how humble, if driven by an enthusiast, should be decently handled, properly appointed, and proudly maintained.

When it comes to driving, misplaced enthusiasm is apt to offend against real as well as against unwritten Law, and either way it does our world a power of harm. The more obviously rapid or home-brewed or otherwise unconventional your car, the more unobtrusively and politely should it be driven in populated places. Learn an early lesson from the difference in behaviour between youth on a two-stroke and your really experienced rider on a really hot motor-cycle. If you feel a desire to leave black marks on the road for no real purpose, or to make a filthy row "blipping" your throttle, reflect that she probably knows nothing of 0-50 figures and is far more moved by a Robert Taylor postcard than the likeness of your scarf to Birkin's—and racing drivers do not jab the accelerator idly up and down when warming up, anyway, so why advertise the comparatively low loadings on *your* rods. When you have learned a lot and commence to enter competitions, do not let the excitement lead you into showing off or seeking cheap publicity; remember that you do not try to find loop-holes in the Regulations unless your factory's prestige is at stake, and whether you win or lose, do not break-up the hotel furniture just because you are a "racing motorist." If you do all these things, in my view—and if I have been too lenient or too critical over any or all of these rules I hope I shall be told—in my view, you will be a true follower of the Sport, no matter what your motor; may the open never-ending road be yours again in God's good time.

THE CARS OF FRANCE

WITH the surrender of France to the Nazis our thoughts cannot fail to dwell on the cars of our gallant allies—and sterner things. The motor car was developed far more rapidly in the closing days of the last century in France than it was in this country, and such great marques as Peugeot, Ballot, Bugatti and Delage subsequently made racing history ring with the name of La Belle France, ere Germany began her previous invasion in 1914. After the Armistice, the French automobile industry was quick to recover its prestige, and in many other countries French cars of the early nineteen-twenties were looked upon as leaders of the world.

The Hispano-Suiza made in the French factory was amongst the finest of cars, both luxurious and very fast; the Delage, in "Pullman" 40/50 h.p. form, was a worthy sister. Delaunay-Belleville had a great reputation for extremely high-grade workmanship; Papa Voisin tested each of his sleeve-valve chassis individually, and Hotchkiss made cars like the guns that had helped to vanquish the recent enemy. The Brescia Bugatti was untouchable in the 1½-litre sports class. In 1939, we find French cars still well established on the British market, and represented by Bugatti, Citroen, Darracq, Delage, Delahaye, Hotchkiss, Peugeot, Renault, and Salmson.

By the time these words appear, one hopes the fate of at least some of these great concerns will be clearer. Inevitably the French seem to make cars which either love the typically long, tree-lined, straight roads that stretch from town to town, or else represent a really genuine attempt to cater for those families which have to motor with a minimum of expense. Some people have it that French motor prestige fell after the early post-war era, and that it had its peak when magnificent Hispanos and Delage and their exotic owners were carrying all before them in the earlier concours d'elegance. It is, perhaps, true that France offers nothing to-day, as once she did, that can quite compare with the greatest cars of other nations; our own V12 Lagonda and Phantom III Rolls-Royce; the 5.4-litre straight-eight Mercédès-Benz of Germany.

But then, we live in an economic age, and Italy, too, lost her big Isotta-Fraschini and her better Fiats, Belgium her big Minerva, America her V12 Packard. And the nine French marques on the British market at the commencement of the Second World War certainly represent some essentially practical and sane designs. In her preparation for the very invasion that she so nobly resisted France must have sacrificed some of her finer cars. Hispano-Suiza, famed from the days of the pre-war "Alphonso" and post-war "Boulogne" Six, now turns out potent aero-motors instead of the V12 Hispano-Suiza car. Ballot seems to have been absorbed by this concern, after many years building that 2-litre four-cylinder, so recently praised in this paper. Amilcar made history with a very sound little four-cylinder sports-car, so typically French, that we all know, and gave us the beautifully made twin o.h.c. racing sixes that so nearly showed the leading 1½-litres the way home in our own 200 Mile Races, although they went into production as cheaply as £695 in 1929. There was also the lesser-known 2-litre straight-eight. Aries made some sturdy cars to race at Le Mans, the Berliet was another sturdy construction, and Chenard-Walcker pioneered servo-braking (on the front wheels only), and faired coachwork at Le Mans. The De Dion Bouton was one of the truly great cars when cars were few and far between, and after 1918 the company built some very good medium-size fours and also a really big four-cylinder of 95×140 mm. The Delaunay-Belleville faded quietly from this country in 1931, when the 21 h.p. and "25/75" sixes were withdrawn from the British market. The French Derby, as distinct from the Vernon-Derby which Vernon Balls made over here, was the basis of the front-drive eight-cylinder, immortalised by Mrs. Stewart, and a V8 2-litre was also constructed. The Farman went out in 1931, when the 7-litre 40 h.p. chassis cost £1,600 in London. The four-cylinder D'Yrsan three-wheeler, really quick in sports forms, and the little 736 c.c. Lafitte, with three-cylinder radial engine, typified France's resourceful economy cars, and the historic Leon Bollée concern was cared for in its later stages by Morris Motors, Ltd. The Lorraine won the Le Mans G.P. d'Endurance in 1925 and 1926, and this beautiful car, in the 3½-litre "20/70" form, had quite a following in this country; Bernard Shaw ran one for several years. Mathis introduced the really small six before most other makers, and as J. G. P. Thomas drove one round Brooklands, one concludes the design to have been presentable. The Panhard et Levassor is, as it were, the father of all cars, and very, very reliable it was, long before the last war. Knight persuaded the Panhard engineers to adopt his double-sleeve valve engine, and as late as 1933 you could purchase a 4-litre sleeve-valve Panhard from the British agents. Unic, immortalised by the London taxi, for many years after the Armistice built a sober and varied range, and Lord Rothschild used to keep one for personal use in London. Voisin, too, built in many sizes and did not stop short of a straight-twelve. So, over the makes that have faded, as makes fade in every country where cars are made, France can hold up her head.

But, just at present, it is for the cars that were in production up to the time of the German invasion that anxiety is most keenly felt. Ettore Bugatti, the nationality of whose cars was dramatically changed by the 1914-18 war, has never produced a casual design. Sheer genius has always prevailed in the model factory at Molsheim, and most of the enemies Bugatti has made he has made on account of jealousy. The current 3.3-litre Type 57 twin o.h. camshaft straight-eight ranks amongst the highest-performance production cars ever built; and they are not expensive chassis. Only to-day I was reading a letter written by a critical judge of cars after he had had a long run in Col. Giles's Type 57S. This gentleman writes: "If it will carry any conviction, I can only say that the whole thing was so extraordinary that I could not have written it up. I like to twist my story in accordance with the vagaries of my own mind, which likes to go all the way round the houses and suddenly pop out where you least expect it. I couldn't exaggerate humorously or say anything quaint about the '3.3' Bugatti; she left me awed." Here is a car which does 125 m.p.h. and cruises at 90 m.p.h. and which has exchanged the noise that made the marque the envy of us all as schoolboys for completely silent progression. In addition, Bugatti's gear-change is as quick as anyone can wish, and Ettore gets road-clinging with ordinary rigid-axle suspension and a fairly high chassis, unsurpassed in any other car, with absolutely perfect steering. The little Brescia was rough, and in many ways temperamental, but it could outrun every other small car of its day. I recall bitter disappointment in failing to finish a Night Trial in one of these cars for no worse reason than that our driver ran out of road a few miles from the start and impinged us on an iron fence. Other friends ran this type of Bugatti until quite recent times very successfully, and I spent many happy hours in, or helping to push, two in particular, one owned by a man who had an uncanny ability for mastering the gearbox of any car, no matter how tricky, in the very shortest space of time. He was also a Bentley enthusiast, but his 3-litre is in storage now. The Type 40 followed the Brescia, and offered excellent performance, a maximum of 70-75 m.p.h., tremendous character, and such reliability if nothing naughty was done to the internals, that it was often affectionately referred to as the "Molsheim Morris-Cowley." (There is a legend that a Bugatti is perfectly all right at Ettore's "4,500" or whatever the rev. limit for a given type is, but promptly blows expensively to bits at 4,501.) When it came to straight-eights, the 2.3-litre Roots-blown twenty-four valve Type 43 was one of the very fastest and most exciting real sports-cars of its time, and, if the touring Type 38 had certain faults, the Type 44 3-litre came out a year later to very thoroughly make up for them. The Type 44 was a remarkable car because it possessed much of the out-of-the-ordinary, while offering definite performance, Bugatti steering and road-holding, and really good workmanship—so often cars that are unusual enough to be interesting to the enthusiast have no performance to put up against more conventional jobs, and too often their construction does not bear close scrutiny. Those who aver that France has had nothing in the Rolls-Royce category since the heyday of the Hispano, find the great 5-litre Bugatti, with three-speed gearbox in the rear axle, difficult to answer for, even if they dismiss the 14-litre Golden Bugatti as a freak, or as a lorry carrying a car body. And so to the

THE CARS OF FRANCE—continued

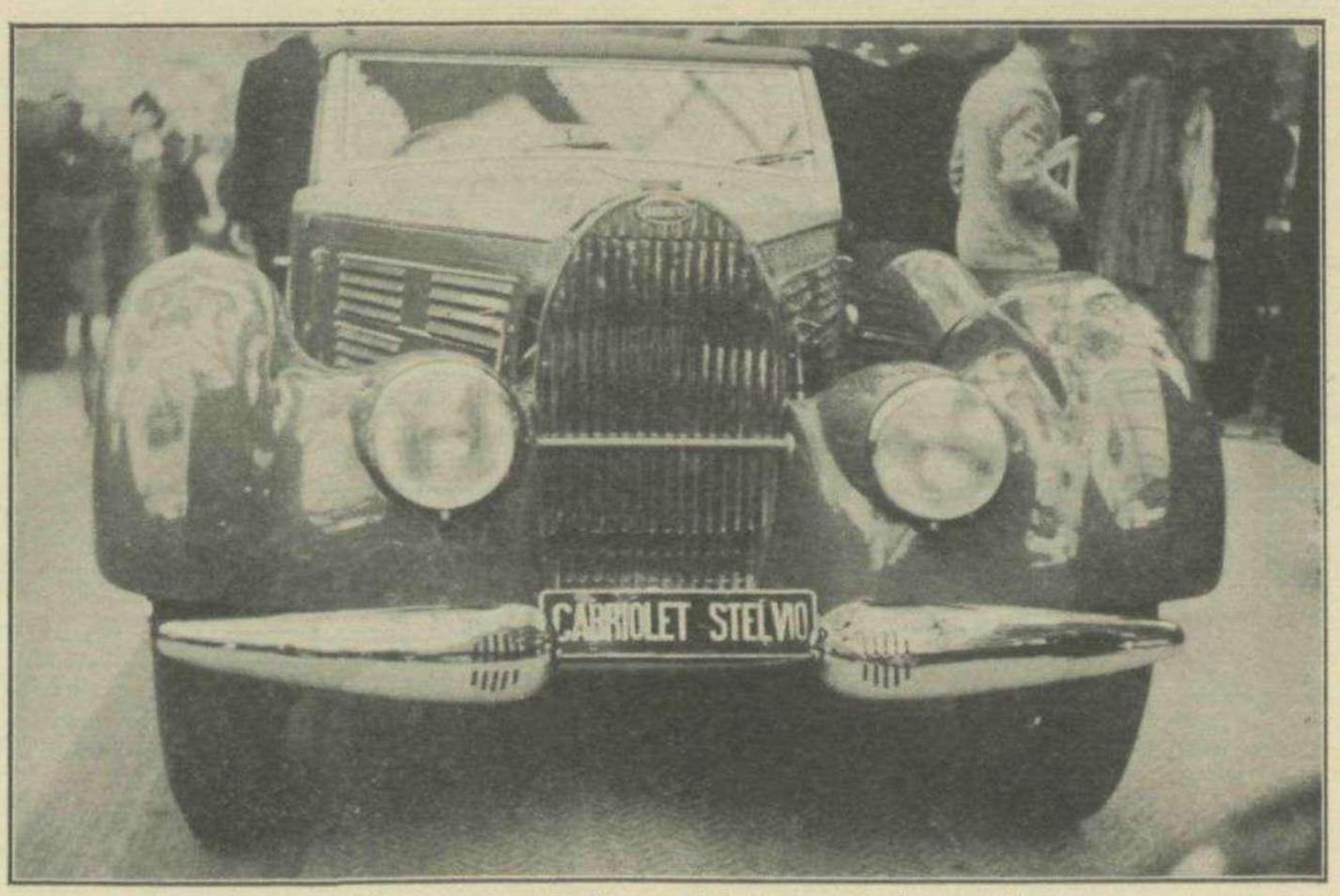
present 3.3-litre, which is one of the world's very greatest very fast cars. How much the Bugatti is respected here is evident when you reflect that a special club existing for its followers, under the able leadership of Brig.-Gen. G. M. Giles and his brother Eric, has a membership of at least one-eighth that of our biggest every-make club, and that Col. Sorel, the High Priest of the Molsheim marque in this land, is a very highly respected gentleman indeed.

Citroen is a make known and loved by many Frenchmen and a whole lot of Englishmen. From early times M. André Citroen catered for the man of modest means. Just after the last war he made the little clover-leaf "7.5" and the "11.4" models, which were always lent most generously to motoring writers of the period. An uncle of mine used to run an early 11.4 h.p. Citroen tourer as subsidiary to his Austin 20 landaulette, and the worst complaint he had about it was that the body was too narrow to seat three persons comfortably on the back seat, and too wide to be comfortable for two. Incidentally, Citroen made excellent clockwork toy reproductions of both types, at a time when toy cars in general resembled nothing to be seen on any road anywhere at all. His four-cylinder front-drive cars display real genius, inasmuch as they are inexpensive family cars used casually by thousands of owner-drivers who never give a thought to the front drive and torsional suspension because they never need to. Citroen has given front-drive to the ordinary man, while others have been toying with it in sports-cars, just as Citroen built a creeper-track vehicle good enough to establish a trans-Sahara service when most engineers considered this type of drive hardly out of the experimental stage. Citroen also makes an exceedingly good, big four-cylinder engine—I came across it again, quite recently, in the 2-litre Georges-Irat—which is delightfully smooth, has surprising life for utility purposes and which merits the attention of enthusiasts in its more advanced forms.

The marque Darracq recalls plenty of sporting memories, sometimes allied to our own Sunbeam and sometimes not, from the wonderful V8, driven with such inspiration by Sir Algernon Guinness, to the historic one, two, three victory of the supercharged 1½-litres in the 1924 "200." For a considerable time after the war the Darracq concern turned out worthy semi-sports cars, very often with stylish Weymann-fabric closed coachwork—I have seen one or more in use very recently—notably the Type TI, "20/98" Six. Then came the essentially modern six-cylinder, with which Comotti won the T.T. at Donington in 1937 at 68.7 m.p.h. Ian Connell's performances continually reminded us that the current Darracq is as potent in sports-car racing as the marque once was in 1½-litre contests. This chassis was run in G.P. racing at Rheims and Pau, going very well with an unblown 4½-litre engine, though the racing, supercharged V16 unit intended for it unfortunately never materialised. The Darracq well represents France's present-day trend in fast cars, which implies extremely high performance and controllability from designs which offer no very clear clues as to how the urge is obtained, for Darracq, like Delage and Delahaye, uses sober push-rod motors.

Delage is one of the most respected of all the great cars France has produced. M. Louis Delage owed much to racing, for it was watching the Coupe de l'Auto Voiturette Race in 1905 that determined him to build a better car for the next year's event. By 1908 Delage built a car to win this race, Guyot beating the Sizaire by 7 mins. The outcome was seen commercially in the 8, 10 and 12 h.p., four-cylinder shaft-drive jobs which you could buy at from £220-£290 in the year A.D. 1909. After the war, the series of very reliable, very well-braked, and unexpectedly quick 2-litre four-cylinder cars established a firm reputation for the House of Delage, backed by the fantastic "40/50" Six, although only very clear-thinking persons can recall from memory which type is faster than which, and which has the greater number of "esses" to its christian name. The old "14/40" Delage was about the first fast thing that I drove, and I had a brief run in one again just the other day, with John Bolster driving. It was followed by a lot of medium-sized "sixes," some admittedly better than others and, later still, by the D8 4-litre straight-eight, followed by lots more eights and sixes. The potency of the present Delage, in 3-litre six-cylinder form, was unforgettably demonstrated by Louis Gerard at Donington in 1938, when he won the T.T. at 67.61 m.p.h., the car standing up to the long, fast race with an entire absence of bother, though it frequently looked as if it might retire from cockpit trouble, but never did. The same combination was second at Le Mans. Delage has ever had progressive ideas. He very early adopted four-wheel brakes for both racing circuit and road, and always used shaft-drive. Of recent times he has employed the delicate Cotal electric gearbox, of which the MOTOR SPORT tester has written "to my mind the only serious improvement on a good crashbox with a clutch stop." Incidentally, the D8 120, tested in 1938, carried luxurious drop-head coupé coachwork, and achieved 97-98 m.p.h. on the road. That is the kind of answer France has been able to give of recent years to those sceptics who say she has fallen from grace as a country building first-class cars. It is rather like the answer the late Dick Seaman gave to the earlier E.R.A.s in international small car racing not long ago, with his thirteen-year-old Delage that, in 1925, had been recognised the world over as the greatest Grand Prix car ever built.

Delahaye was a famous name in "horseless carriage" days, and it continued so after the first world war, somehow inevitably associated with that sober *coupe de ville* type of bodywork, complete with carriage sidelamps, which French coachwork craftsmen were so fond of about the middle twenties. Then all of a sudden the programme changed, and the very potent six came into being, so typical of what France does to-day in sports-car racing. A straight-forward engine, with valves in the head, operated by conventional push-rod gear, independent suspension of normal layout at the front, and light, wind-defeating coachwork, and a truly astounding performance . . . Chaboud and Tremoulet won the 1938 G.P. d'Endurance at 82.25 m.p.h. and last year took the lap record there at nearly 97 m.p.h. The Delahaye came into prominence for this sort of work in 1936 and the 3½-litre T.T. car purchased by "Bira" won the L.C.C. Three Hour Sports-Car Race in 1938, driven by Jarvis and Willing, at 63.46 m.p.h. By this, and heaps of other successes, the modern Delahaye has proved itself one of the most dependable sports-racing cars of our time. The



Bugatti . . . "The present 3.3 litre, which is one of the world's very greatest very fast cars"

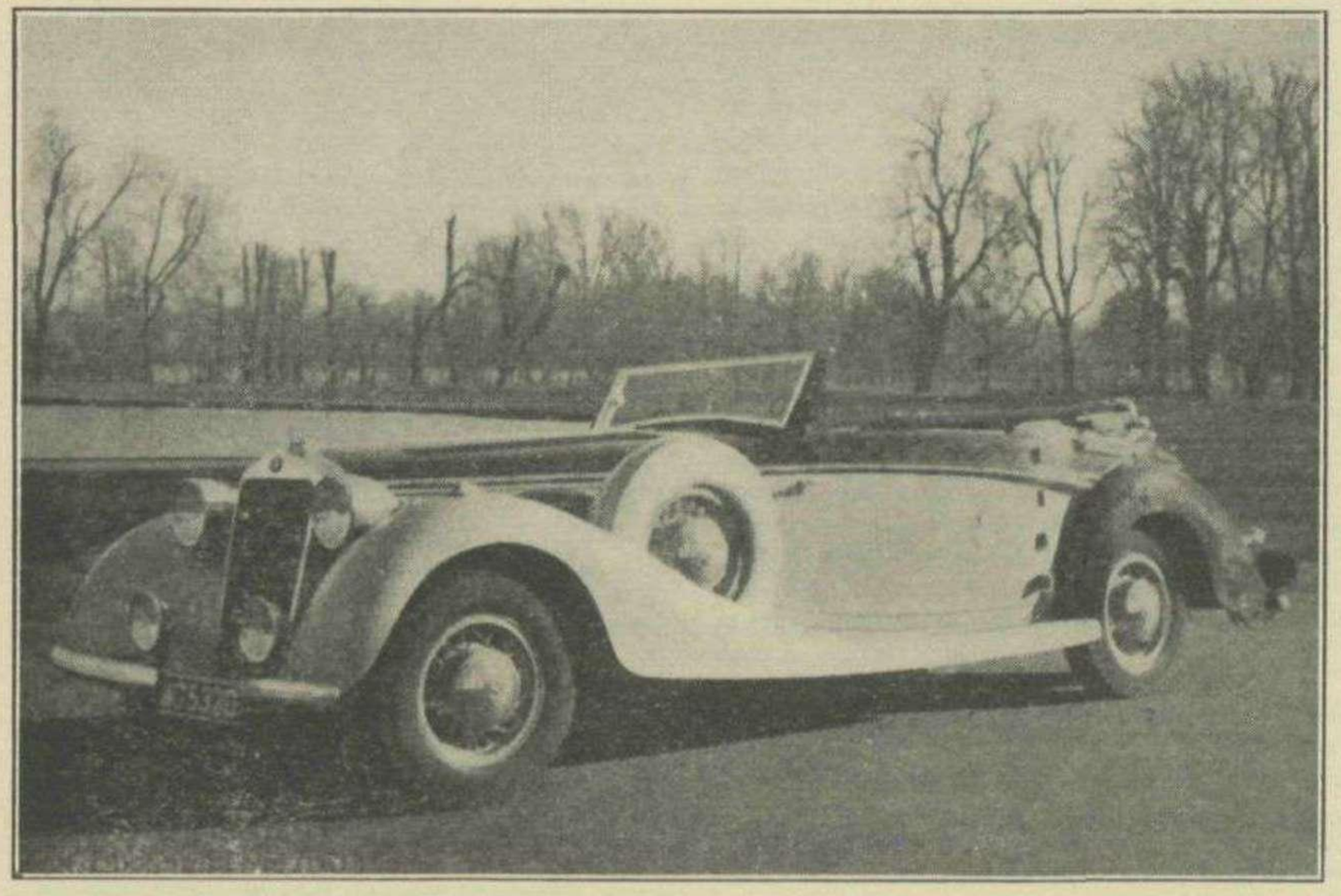
THE CARS OF FRANCE—continued

Hotchkiss, made by the famous French armament factory, has long been recognised by knowledgeable persons to possess "a little something others haven't got." I was reminded of this some years ago, when a motor dealer praised highly an elderly tourer he took me out in, and went to some pains to find a more modern, closed Hotchkiss for his own use. The 3½-litre offers very exceptional performance for a car in the £600 price-class, allied to very high qualities of control, refinement and finish. And the ambitious Type B38 Hotchkiss Ten, of alloy construction with front-drive, has passed arduous tests which leave no doubt as to its complete dependability in spite of its low price. Peugeot is a name which recalls the big 4-litres at Le Mans, or Boillot's great racing successes of 1912 and 1913. But the house of Peugeot also looks after the poorer people of La Belle France and the "Bébé" of pre-1914 days, the "quad" that was derived from it, and the narrow-track 719 c.c. baby of the later twenties, took many happy folk many happy miles. So it is fitting that the present Peugeot, apart from the Cotal-transmission streamline Le Mans 2-litre, is the lively little 12 h.p., which Tom Knowles was handling in this country.

One of the very greatest of all the French marques is, without any question, the Renault. Szisz won the 1906 French G.P. for Renault Frères, but the make was famous long before that. In our time, each model of the big Renault range has been equally respected, from the 8.3 h.p. economy car, to the fantastic "Forty-Five," which, with 9 litres of sober side-valve motor, would run up to something approaching the magic century. If I am reminded that one of the slowest journeys I have ever had was five-up in an "8.3" Renault, from London to the New Forest, that little car, one of which stands derelict to this day in a yard not far from Putney Bridge, was essentially reliable. If the big 45 h.p. is no longer seen on our roads, nevertheless, it was a very important luxury car in its day, and, incidentally, was used for some early applications of streamline enclosed bodywork in competition, when surprisingly high speed allied to reliability was realised, record-breaking at Montlhèry. Great firms usually set much store in tradition—witness our unchanging R-R radiator—and when Renault first decided to move his radiator forward from behind the engine he did his best to disguise the fact, notably when the shutters were closed. If all the Renault range, from "8.3" to "45" were noted for dependability in post 1914-18 days, the same applied before that war, as the Mills brothers remind us by their quite recent exploits with the 1911 8 h.p. "Sarah" and the 1907 42 h.p. "Agatha," the last named giving me a very good run to Shelsley and back with Marcus Chambers as late as 1935. And it was the former type, as taxis, which rushed troops to the front line so successfully in an emergency during the last Emergency. As the House of Renault has paid more attention than most to economy cars, it is fitting that the present range should include an "Eight." Built largely by British labour at Wembley, in this country, the 1-litre £140 Renault saloon handles really well and has just that much more willingness than any other baby, qualities that have won for it countless friends in a very short while.

Finally, the Salmson. Intending to construct a French version of our G.N. cyclecar, the Salmson works soon introduced the eleven-hundred four-cylinder Salmson, which in twin o.h.c. form wiped up all other 1,100 c.c. cars—until the Amilcars came. This model is still sought by impecunious youngsters as one of the more desirable vintage cars, and it had a wonderful engine, gave 80 m.p.h. for a most respectably small outlay, and invariably had the very shapely racing two-seater bodywork at which the French excel, found also in Amilcar, Senechal, Derby and others. Goutte's 1,100 c.c. Brooklands lap record, at 114.49 m.p.h. in 1926, stands ever to the credit of the type. Such a following did the Salmson build up in this country that the concern of British Salmson Aero Engines Ltd., started assembly over here. The "20/90" Six was largely their own affair, but the very well made fours were of essentially French origin, and just before the war they were importing direct the 18 h.p., 2.3-litre, four-cylinder car, some of which found their way on to our roads before armaments production overshadowed car sales.

Those, then, were the great automobile producing concerns of France at the time of the Nazi invasion. What may be their immediate fate, what their possible future, none may know. But certainly, when the Nazi aggressor has been rolled back, and France knows peace once again, her motor industry will rise to its former strength. We will hope that Bugatti, Citroen, Darracq, Delage, Delahaye, Hotchkiss, Peugeot, Renault and Salmson will then again build cars as essential to a nation in peace-time as armaments are in war.



"Delage is one of the most respected of all the great cars France has produced"

VETERAN TYPES

In "The Motor" of June 5th, Laurence Pomeroy commences a new series of articles entitled "Milestones of Speed." In some ways, these articles may at first appear to steal some of MOTOR SPORT'S thunder in relation to our "Veteran Types" series. This series was the brilliant idea of "Baladeur," whose real identity is E. K. H. Karslake. He asked for details of early fast cars in this journal, and wrote up such cars after personal experience of them, with particular emphasis on how they handled on the road and the modifications made to them of recent times. The series started with "Chitty Bang Bang II" long before the Vintage S.C.C. began to hold contests for Edwardians, and since has embraced nearly all the big racing and fast touring cars of this vintage which are with us still. Mr. Pomeroy is approaching from quite a different angle, wishing to write a series of articles which will provide a continuous narrative, from an engineering viewpoint, of developments in racing cars from early times to the present day. We assume he is only confining himself to existing veterans because it is easier thus to obtain data and illustrations. In some ways it would seem to be more comprehensive to describe winning G.P. cars of each year, whether examples still exist or not, for his particular purpose. Nevertheless, vintage enthusiasts will follow these articles with the utmost interest and appreciate the excellent drawings which will accompany them. Our own "Veteran Types" series were Karslake's exclusive work, with the exception of a few articles by Heal and Clutton.

THE REMINISCENCES OF H. L. BIGGS

No. 4.—A LONDON TUNING SHOP

OF my personal experiences of purveyors of speed, Messrs. Automobile Supertuners stand out as one of the most interesting. Situated in Roberts Mews, off the Hampstead Road, in this small but efficient workshop under the direction of R. F. Oats (with Alec Francis, the one-time designer of the very fast Beardmore cars well known in post 1914-1918 hill climbs, and of that ingenious twin o.h.c. twin mag. 350 c.c. Beardmore motor-cycle for the T.T. Races, as works manager), the elusive r.p.m. were successfully hunted.

Many and diverse were the cars that were handled during the 1933 season with which I propose to deal.

The two eight-cylinder 2,500 c.c. Maseratis, with their rather angular A.I. bodies in red fabric by Corsica, were those used in 1931 by Campari and Eyston, one being the property of the Australian, John Cumming, who had used it during the previous season as a sports-car, surely one of the fastest at that time. Cumming's car was then being prepared for track events, and to that end the compression was raised and the car stripped. An inherent weakness in these Maseratis caused cracking of the electron crankcase at the clutch housing, owing to gearbox overhang and driving and braking strain. I spent many strenuous hours underneath, stiffening the weak parts with angles, webs and tensioning devices, but on a practice lap on the outer circuit at over 105 m.p.h. the tensioning bolts snapped, which meant some last minute work making up bolts of high tensile strength before the Easter Meeting, at which, off 23 seconds, the car finished second in the Second Addlestone Mountain Handicap.

After this event, the engine was stripped out, and the case built up by Lensen, the cold-welding magician, all acute angles being built up to radii, and the actual faces of the clutch housing thickened up. Improved tensioning bolts and an angle support under the gearbox with a large rubber mounting were further improvements. At the same time, an improved pattern piston was fitted, and a different mix of bearing metal used. In this condition the car finished fourth in one Outer Circuit race at the June Meeting, being badly baulked by slower cars. The other Maserati had similar attention to the crankcase, but in addition the top half of the clutch housing was stiffened by steel plating.

I remember some hectic work removing the rear axle of this job for loan to Whitney Straight for Shelsley, as his had burst in the International Trophy Race on the previous Saturday.

These motors were the real thing, and to ride as mechanic entailed being partially baked from the waist down, and frozen from the waist up, but it was indeed an experience never to be missed.

Two Salmsons also came under our care, those of Bartlett and Harvey Noble. The former was the then holder of the 1,100 c.c. Mountain record, and was being modified, the work on the engine consisting of removing the No. 8 Cozette compressor from its usual side-mounting, and driving it from the forward end of the crank through a short shaft and fabric universals, the front cross member being moved forward to accommodate it. The compressor was carried in straps from channel mountings across the chassis frame. The water pump was then driven from the usual blower drive. Special magnesium-alloy pistons weighing 5½ ozs. with circlip gudgeon retainers replacing the usual Salmson taper-pin fixing, and a special balanced crank with a modified method of securing the centre main bearing were additional modifications. The flywheel was considerably lightened, and an entirely new double branch inlet manifold and more efficient water piping, designed by Francis, was constructed. The general chassis detail work included a re-designed front axle, 4 ins. lower than standard; wedged up and flattened springs with multiple clips, and fuel tanks in the tail and across the chassis under the propeller shaft and driver's seat, pressure fed. A single seater aluminium body mounted on a light alloy angle sub-frame was fitted, and central steering with the steering column canted across to suit the two-seater chassis. Heavier triple-bladed Andre shock-absorbers were used all round (I recall the tough job I had lightening the arms of these), and the chassis was generally stiffened up at various points.

Using a No. 8 Cozette blower, the unblown compression-ratio was 4.8 to 1, and the car ran with a 12/45 or 12/48 straight-tooth axle assembly.

Harvey Noble's car was nearer standard, having a No. 7 Cozette, side-mounted, an unblown compression-ratio of 6.5 to 1, twin Scintilla magnetos, and a Cozette carburetter. The flywheel was, of course, lightened, and the car looked unusual by virtue of its having an Amilcar body, flattened springs, and G.P. Salmson radiator cowl and scuttle tank, but it certainly went!

I see I timed an outer circuit lap at 95 m.p.h. on a valve timing of I.O. 12° before, E.C. 26° after, with an ignition advance of 48°, and tappet clearance of .018". Later in the year we experienced piston trouble and circlip-locked gudgeons were used, and the bores linered. Very fine motors these old G.P. Salmsons!

The star car in the stable was, of course, Widengren's Amilcar, which I mentioned in a previous article, and it would take many pages to describe the work put into this car, and the troubles experienced and overcome and the many nights and days we spent improving and modifying. No doubt, enthusiasts will be aware of general details of these beautiful six-cylinder cars, as they were at one time a standard production in France, and were exhibited here at Olympia. Widengren's car was one of the special chassis with offset engine, the shaft passing alongside the driver. Alterations were many—special camshafts giving an overlap of 27°; larger valves; stronger triple valve springs; the Amilcar Roots blower boosting at 15 lbs. per square inch; and either a 40 mm. Solex or R.A.G. carburetter. Valve clearances were .018" Ex., .014" In., but depended upon the working hand, as the camshaft driving gears were fitted with a vernier, so that timing could be extremely accurately set.

I well remember the trouble we experienced before the International Trophy Race in 1933, when in practice, late on the Friday evening, the car started to slow up and burn out the hottest plugs. Hurried removal of the head revealed that the exhaust valves were pulling through the valve seats, the heads having cracked. An urgent 'phone call to Clayton produced a set of exhaust valves, and an all night sitting dismantling, machining and hardening a set of end caps, and re-assembling, saw the car on the line on the morrow, when it finished eighth after many pits stops, lapping at 86 with a peak r.p.m. of 6,200.

I should like here to make a correction to my previous article in which I stated that the Avus Grand Prix was a week after the record attempt. It was, in fact, a week after the International Trophy, which week saw a complete engine overhaul, modifications to blower and water pump, and also to body and exhaust system! On the Avus, the car completed 3 laps, attaining over 120 m.p.h., when a valve dropped in, causing a spot of trouble entailing further complete rebuilding of the unit, modifying the gudgeon pin fittings, and substituting a spare head of Bill Humphreys's, with the smaller valves, and steel valve guides. Endless work saw the car ready for the British Empire Trophy, when, after lapping at 110.9, the driver knocked the tank pressure release tap on, and retired on the spot!! So often the obvious escapes notice.

The marvellous Thomas Special, one of the 1½-litre "flat-irons," was at the time being fitted with a Francis-designed cylinder block of great technical interest. The block and head were cast together in pairs, and bolted up by longitudinal bolts, to make a complete eight-cylinder block assembly. This simplified and cheapened the pattern and thereby the production of the casting. It was intended to produce four, six, and eight-cylinder engines using a multiplication of the two bore block castings.

The fixed head block used twin o.h.c. opening valves inclined at 60°. Twin plugs, masked, to enable larger valves to be used, were fired by twin eight-cylinder B.T.H. magnetos mounted on the top of each bronze o.h.c. cover, and driven by spur gears from the camshaft gear. With these masked plugs 67° ignition advance was given, and the valve overlap was 41°. The pistons were extremely short-skirted and light, and fitted with two compression and one scraper ring, all above the gudgeon pin; the engine was designed to give 95 b.h.p. at 6,000 r.p.m., unblown.

THE REMINISCENCES OF H. L. BIGGS—continued

The block was mounted on the original Thomas-Special malleable iron crankcase, using the 1,100 c.c. crank and rods; particular attention was given to the water circulation round the exhaust valve seats, and four Solex carburetters with double chokes provided the mixture. An amusing incident occurred during the construction of the involved linkages required to operate the eight throttles in that depression of the accelerator pedal shut instead of opened them—a defect which was very quickly rectified.

After a tremendous amount of work the car was got down to the Track for test, where apparently the power developed by the new top rig was too great for the rods, which shot in all directions!

Apart from the engine details above the crankcase, the car was original Thomas, the 8" diameter, multi-plate clutch, horizontal steering column, sledge pattern chassis, and sheet steel bodywork being typical of the master's design. It was later fitted with a Perkin's Diesel and took oil-engine records.

Other interesting cars included the big six-cylinder o.h.c. Napier, owned by Capt. Miller, and one of the Segrave supercharged 2-litre Sunbeams, with which I had the misfortune to ram the firm's hack O.M. when being started up one day (luckily the damage was confined to the radiator and the car did well in Ireland at a later date, driven by McCalla). Another Sunbeam was the blown 3-litre o.h.c. sports job, originally driven by Malcolm Campbell and later by B. O. Davies in Ireland. Actually we stripped the engine, a lengthy job with this type, and welded a crack between the valve seats, which unfortunately went again in a very short time. This car was imposing with its side-mounted Cozette blower, twin A.C. fuel pumps, and distinctive lines.

There was a special eight-cylinder G.P. O.M. with its extremely complicated engine, in which each cylinder was separate, with fixed head and sheet steel water jacket; nine bearing balanced crank; roller big-ends; and Amherst Villiers blower. The tubular front axle was carried on very short, flat, half-elliptic springs, and cast iron liners on steel shoes operating on steel drums looked after the braking. The chassis was of inverted "U" section, filled with lead, to give correct weight distribution, and it went remarkably well unblown, on eight R.A.G.s driven by the Great Man himself.

The four-cylinder "12/50" Alvis driven up to a recent date by Chas. Follett, also came in for a lot of attention. Especially, I remember working on conversion to dry sump, and days spent at the bench in the blazing sun, lapping cylinder block and head to obtain that perfect joint! This car was amazingly reliable and successful over a period of years.

Sundry "Speed 20" Alvis came in for additional tuning, among them Widengren's private car, and a very fine dark blue saloon, the property of Sir Ronald Gunter. Replacing broken valve springs on these cars prior to the multiple spring design was a routine job. There were also divers O.M.s including R. F. Oats's personal blown 2-litre saloon, which we had fitted with special vernier blower gear wheels. There were also occasional visits from H. G. Dobbs, the Riley driver, for whom Francis had designed a set of rods, and countless other interesting jobs which occupied my time fully until I cracked up in late '33 with a dislocated spine, which put me out of active participation for many months.

Our staff also was not without interest. There was old Terry, who had worked at Chas. Friswell's in Albany Street in the very early days of motoring, and could discourse learnedly on cars which to us were merely names. Owen Finch, who had been with me at Frazer-Nash, I was able to introduce to the firm, and, strange to say, we are now again together, supervising the conditioning of Civil Defence Vehicles. Other mechanics I still meet in places many miles away from the Hampstead Road, and I regret that space compels me to deal with machines and men in such a cursory fashion, but there it is!

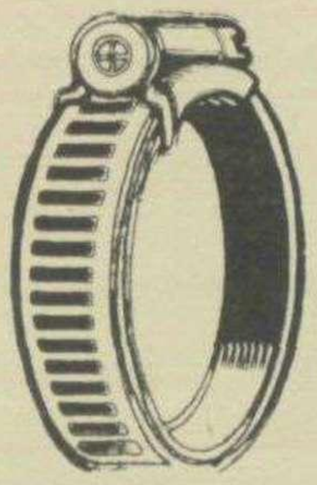
THE V-TWIN FOR SPRINT WORK

Continued from page 125

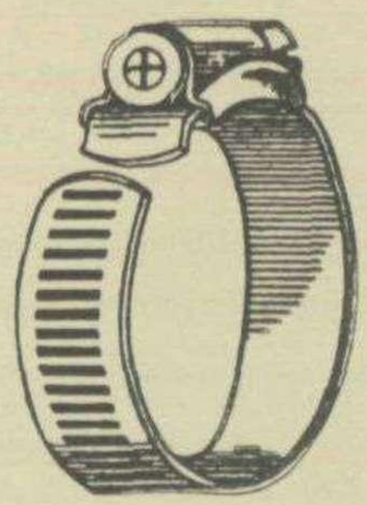
So there is some basis for considering the air-cooled V-twin as a sprint job and for believing in its continued development after the war. It may well be that the research work on air-cooled aero-engines now in hand will especially focus the enthusiasts' attention on the simple engine when speed trials return, and enable even more than 100 b.h.p. from 1,100 c.c. to be realised, with further reduction in weight, when, if adhesion problems can be lined up, the conventional racing job with lots of little boosted pots and shaft transmission will not look so modern.

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TWO THOROUGHBREDS IN WAR-TIME

[IN SPITE OF THE WAR, MUCH GOOD MOTORING IS GOING ON, AND R. W. SEYS HERE DESCRIBES HOW HIS BENTLEY AND M.G. ARE MAKING THE BEST OF THE POOL ERA.—ED.]

PERHAPS I had better introduce you first of all to the two vehicles in question—"The Old Lady," which is a 1928 4½-litre T.T. Bentley—and "The Baby," a late 1933 J.2 M.G. Midget.

When war broke out I had, as younger brother to the Bentley, one of the twin overhead camshaft Grand Prix Salmsons. Just after Christmas, however, this was traded in for a most businesslike machine which was once a 7 h.p. Austin grocer's van. In 1938 though, the grocer's van idea was scuppered, and the engine was considerably hotted up and fitted with a very neat outside exhaust manifold. A very well-built fully-faired two-seater body was then fitted, painted in opalescent blue, with silver wheels, and given the unimposing name (on the bonnet) of the "Imp"; I craved to add another "p" to the name, but never succeeded in summoning the energy to do so. And it went like a veritable bomb! So much so that "one dark and icy night" I topped a hill much too fast just outside Reading on a lonely road, broadsided, collected a deep ditch and a bank, and—to my intense annoyance—had to sit down in a snowstorm and wait for an hour and a half before someone came along to help me push it out of the ditch. This episode was found to have a detrimental effect upon the steering arrangements and this factor, combined with cycle mudguards that insisted on breaking their stays, and also the extreme exposure of the vehicle during the icy weather, hardened my heart.

Then there was a pilgrimage to Lewes, as a result of a letter in MOTOR SPORT, to locate the Leyland Thomas in a scrap yard, but to my great disgust, the last remaining visible portion was the exhaust pipe. And so it was that the M.G. was found, for it was in a garage near the gates of the dump out of which I had so disconsolately walked. A good luncheon combined with a run to Eastbourne and back in thick snow with the Austin persuaded me to part with my "Imp," and that evening I drove out of Lewes in the M.G.

Having by then joined the Army, I took the M.G. with me up North and was most satisfied with its performance on "puddle fuel." Much attention was given to the twin S.U. carburetters from the point of view of tuning, and the smallest main-jets obtainable were fitted. The finished article then gave me a fairish 70 m.p.h. in top and up to 35 m.p.g. on petrol, using "Vol-o-pep" tablets and "Petrecon"—which contain graphite and ether, respectively. The M.G.'s engine number, by the way, does not appear in the registration book, but its chassis number is J.3082.

With so many cars off the road it is now possible by day to put up some quite creditable averages over long distances, and motoring conditions just at present, I consider, are better than they have been for many years. I did notice, however, that the surface of some roads has been badly damaged as a result of the heavy snowstorms we had over Christmastide; as little attempt has yet been made to repair the damage, due to labour being employed in other spheres, it may in places become permanent. Perhaps the best (or should I say "worst"?) example of this is our old friend, the Great North Road, outside Stamford. Here, at night, the surface is really dangerous for anyone unacquainted with the conditions. As for restricted areas, the 30 m.p.h. rule seems to have become considerably more lax in view—undoubtedly—of the fact that now the police have something other to think about than the unfortunate motorist; but personally I drive the type of car that always starts a "speed-cop's" stopwatch ticking, and so I consider it inadvisable to take advantage of present conditions!

The Bentley, when war broke out, was an old friend, for I had acquired her from a well-known lady racing motor-cyclist almost a year before, after a miraculous escape from death in my 3-litre Bentley when sleep overcame me one night on Salisbury Plain, whilst I was pedalling quite fast. The "4½" lay for some time beside the main London road at Farnborough with a large "for sale" notice on her windscreen, and I used to pass her almost every day. And then one day I suddenly decided to purchase her.

When war broke out, the car was actually off the road, but early in January she was recommissioned and I had a most pleasant run down to Bournemouth and back even though it sleeted most of the day, and ice at night invited a glorious broadside on the Basingstoke by-pass. Shortly after that, however, a piston did an expensive thing on the run down off the Hartford Bridge Flats into Blackwater, and she was towed rather humbly up to Victoria for attention by the "Wizard of Bentleys"—Mr. McKenzie.

As compared with a standard 4½-litre Bentley, I must admit that the car's performance was in the first place good. To this day I have been unable to trace her history, but she has the racing Le Mans type engine, thirty gallon petrol tank with pump and petrolift feed, armoured wiring, the racing instruments, racing footbrake adjuster, etc. She gives every indication that she has been used in races, though I can get no information on the subject and the original registration book is not with the car. All I can gather is that she complies in every respect with the T.T. specification and she may be one of the T.T. team cars. Her engine number is T.X. 3234 and her chassis number is M.F. 3174.

Well, up at McKenzie's tremendous activity commenced. Special alloy pistons were cast; 80-ton gudgeon pins were fitted with special connecting-rods; new valves were supplied and the valve guides were replaced; the twin magnetos were reconditioned; the brakes were relined and carbon-steel ribbed brake drums fitted; a set of six new wheels were supplied (the others were a bit shaky) with 6.00"×21" tyres at the rear and 5.25"×21" at the front; and last—but not least—in a blinding snowstorm I perambulated down to Southampton to purchase a set of silver-steel Le Mans cycle mudguards from a crashed Speed Six, which were fitted in place of the T.T. mudguards.

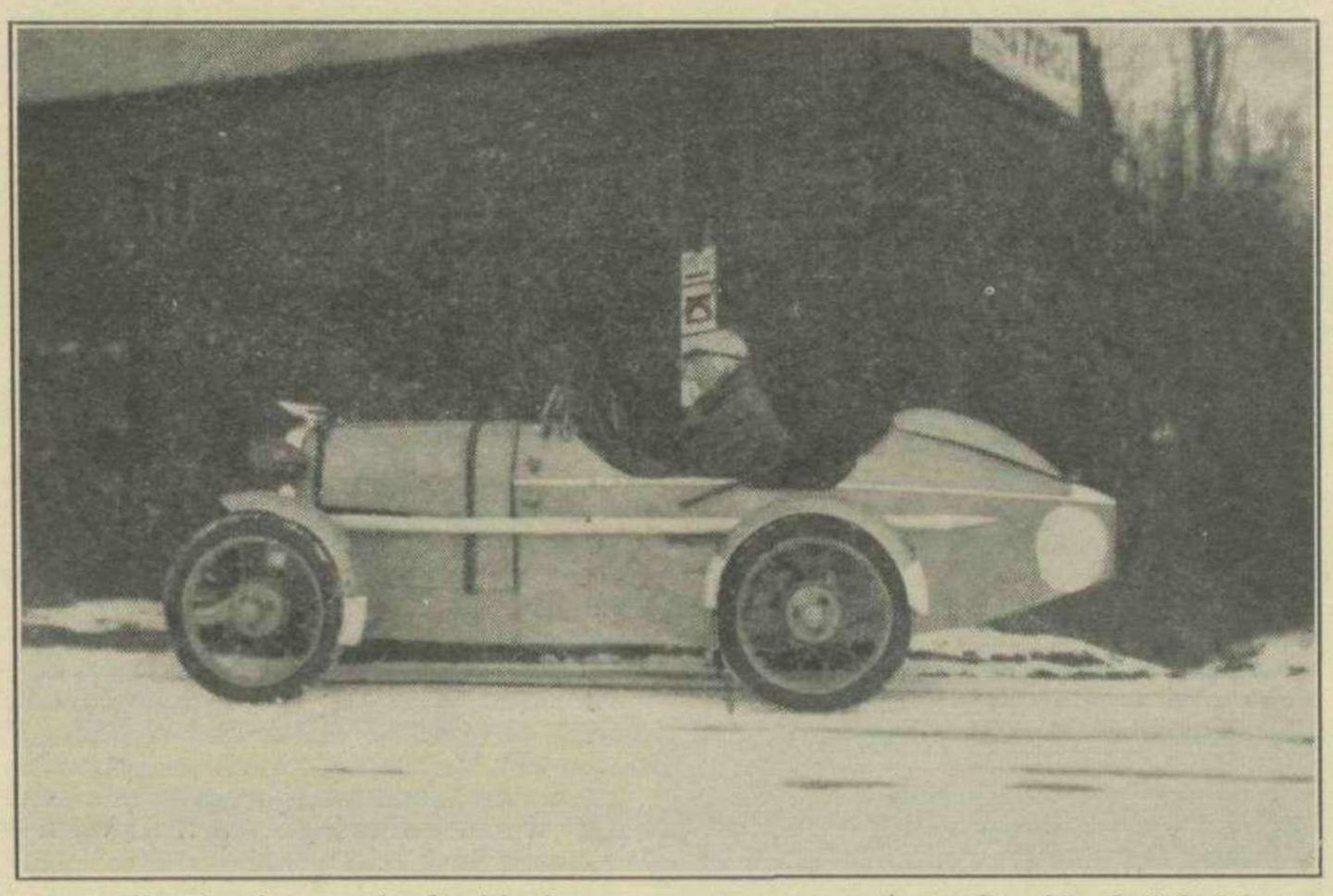
In late March the car was ready for the road, and I had several fine runs up and down the Great North Road. The speedometer at present is of a rebellious disposition, but on the rev.-counter she was knocking up a very easy



Topical—the author at the wheel of "The Old Lady"

TWO THOROUGHBREDS IN WAR-TIME—continued

90-95 m.p.h. cruising speed on puddle fuel with a maximum in excess of this, though a good deal of pinking was experienced when accelerating. With



The Austin was fitted with the now very rare, genuine "Brooklands" body

"Vol-o-peps" and "Petrecon" I managed to maintain my pre-war petrol consumption figures—i.e. 14-15 m.p.g. on the open road and roughly 12 m.p.g. in traffic. Nevertheless, considering the conditions I was delighted with the car's performance and perhaps my best run—without any attempts at "dicing"—was the 100 miles from Grantham to London, which was covered in one hour 40 minutes dead. I am not an average-speed maniac, nor am I a disciple of the speedometer needle, and therefore I am not prepared to enter into any arguments with readers on this average, and, too, it must be remembered that it was done by a twelve-year old car under wartime conditions.

In spite of this increased performance, the old Bentley still managed to retain its great charm of being what I call "a gentleman's sporting motorcar"; by this I mean that she is quiet, extremely comfortably sprung, and yet has a real "bite" if required. So many sports-cars are blood-and-thunder vehicles which, though grand for short spins, are little pleasure for really long runs—especially if done frequently in all weathers.

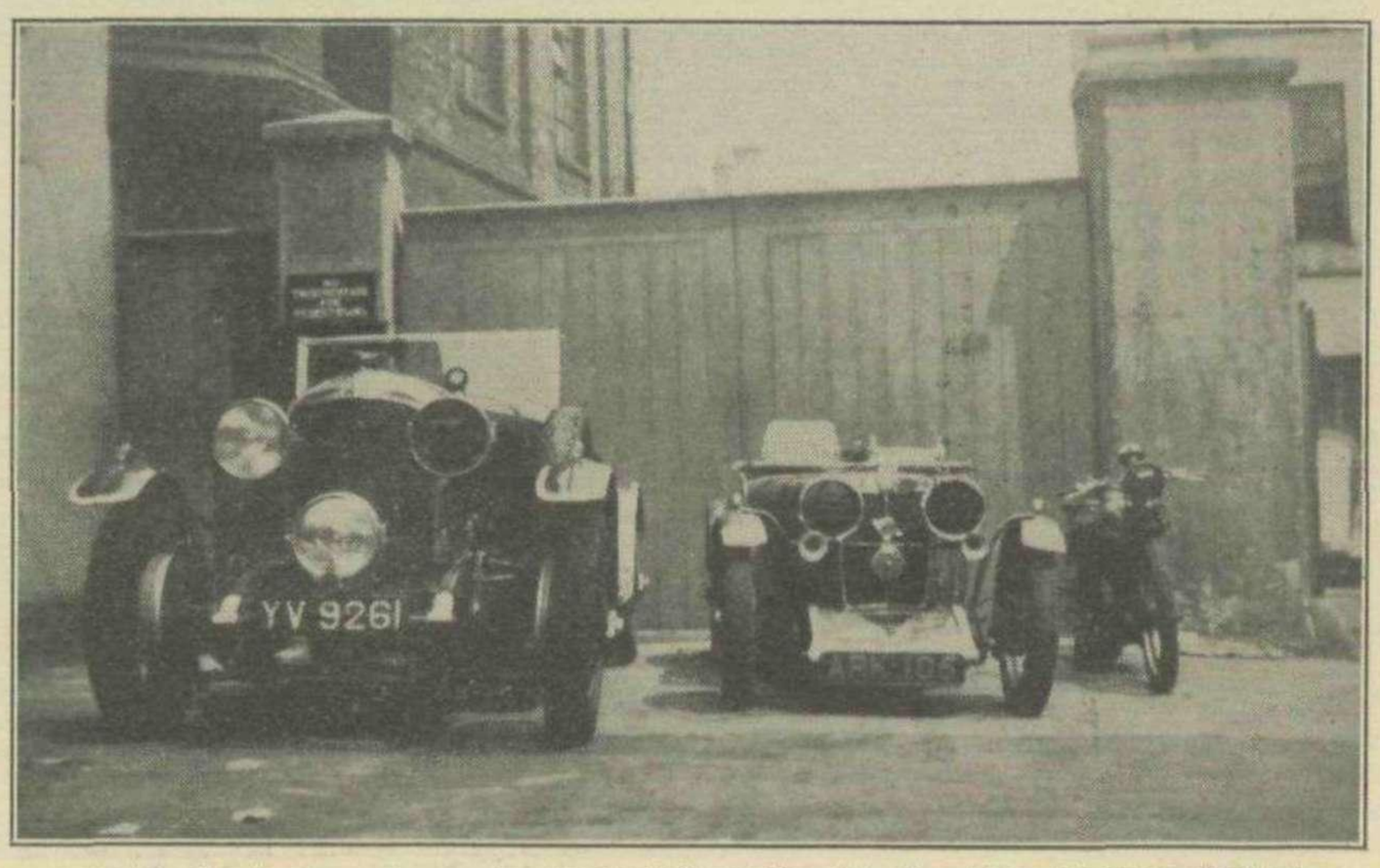
War or no war, motoring still has its bright sides. Space does not permit recounting all one's adventures. There was an attempt to purchase the ex-Rayson Maserati at Egham; twenty-two breakdowns one wet night in the Bentley from Esher to London after dinner, due to pool sludge in the petrolift, followed by bed at 6.30 a.m.; a chance meeting of Mr. Forrest Lycett and the 8-litre Bentley which resulted in a run up the hill on to the Fairway at Henley at 122 m.p.h., and on to view an Itala and a Speed Six Bentley at Benson. Also, a run to Scotland with an Army lorry which included a real Shelsley-memories "dice" up Shap Fell, and finally a terrific crash, and total write-off of the vehicle near Gretna Green. These are but a few of many excitements in the motoring line.

But, alas, sooner or later in these days most of us must face a lay-up. The Bentley is now up at Victoria again for a general check-up and to have yet another petrol-supply fitted—this time, an Auto-vac—so that with three lines of supply she should not suffer from any more trouble in that department. "Mac." is fitting up a series of taps and pipes, so that the various lines of supply can be changed over easily, and I am told that the finished article will closely resemble Hampton Court Maze! As for the M.G., that is now down at Esher, and "The Old Lady" will shortly be going down to Byfleet to be stored as well. So now I am "mounted" upon my Royal Enfield motorcycle, which is the famous 250 c.c. S.2 Special, which was run by the works for two years, and was specially built for F. E. Thacker to ride in 1935. It was the only one of its type ever built, though I am told that certain replicas were made for private owners. It has a long history of trials successes and is still a remarkably potent little machine. Its engine and chassis number are S.1160 and S.1350, respectively.

In discussing the vehicles, I have mentioned the engine and chassis numbers for, being a super-enthusiastic owner, I should be very pleased if any readers would care to give me any information they may have concerning them. I am sure MOTOR SPORT would not mind forwarding to me any letters on the subject or publishing information in the correspondence columns of this journal.

Let me conclude by paying a tribute to those die-hards who still continue to run their sporting carriages in the most adverse circumstances and express a hope that the day is not far off when the rest of us once again take the helm of our respected steeds.

If any readers who have owned an appreciable number of cars of sports types and have kept careful records relating to them, care to present their experiences to the Editor for inclusion in the "Cars I Have Owned" series, such presents will be very much appreciated.



Roddy Seys's present mounts: 1928 T.T. 4½-litre Bentley, 1933 J2 M.G. Midget and 1935 S2 250 c.c. Royal Enfield

THE V-TWIN FOR SPRINT WORK

A THESIS ON THE LATER DEVELOPMENT OF THE RACING CYCLECAR

UP to last year the V-twin engined racing-car was still very much in evidence at speed hill climbs and speed trials. Usually referred to as a "Shelsley Special"—wrongly we think, because such cars run at other important venues apart from the Worcestershire hill and because four and even six-cylinder engines are installed in chassis which equally deserve this designation—these air-cooled, two-cylinder racing-cars have, of recent times, been developed to compete seriously against contemporary conventional racing-cars. Their advantage now lies in low weight, due to the absence of water cooling mediums and economy of components, and a good output by reason of attention to carburation and combustion details allied to the hereditary efficiency of the motor-cycle type, both mechanically and volumetrically. In the early days the V-twin and invariably chain-driven racing-car owed nothing to specialised devotion and development. The G.N. of post 1914-18 days adopted chain in place of belt transmission and turned its engine round to a transverse position across the frame, and became a sporting proposition in "Vitesse" guise. Racing was the thing to do amongst manufacturers in those days, and so Godfrey and Nash built racing versions. As early as 1920, the single-seater G.N. "Kim" was reaching about 90 m.p.h. on Brooklands and the early J.C.C. 200 Mile Races led to the construction of special cars having o.h.c. engines, of the "Mowgli" and "Akela" types. Capt. Frazer-Nash, to whom we owe so much in the way of German bomber destruction in this war, won the 1,100 c.c. class of the 1921 "200" in his G.N., at 71.54 m.p.h. In 1922 a team of three o.h.c. G.N.s ran, but they were vanquished by the four-cylinder Salmsons. The G.N. was also prominent in sprint events. B. H. Davenport upheld the reputation of the V-twin racing cyclecar after the conventional racing-car had ousted it from most other spheres, by taking the record at Shelsley Walsh in 1926 in 48.8 secs., in 1927 in 47.8 secs., and in 1928 in 46.2 secs. These exploits of Davenport with a car usually described as a Frazer-Nash, but in reality built up of G.N. and special components, opened up the era of renewed interest in the development of the V-twin engine and G.N. type of chassis for sprint events. In the early post-war days, the twin-cylinder engine was just as logical in a small racing-car as a multi-cylinder unit. Then, as the four-cylinder engine became universal for ordinary work, the air-cooled, racing cyclecar faded out. Its revival commenced more or less mildly, as youthful enthusiasts, fascinated with the type and able to purchase touring G.N.s very cheaply and strip them, raced such cars as Edwardian enthusiasts race pre-1914 cars, for the fun of it, rather than in direct competition with later types. Over it all, the achievements of Davenport must have shone out, for from about 1930 or so onwards, a marked revival of interest in the V-twin racing-car has been evident, and, in spite of dope fuels, supercharging, and such like, it has been subjected to specialised development for direct competition with 1,100 c.c. and 1½-litre cars of all kinds. That its certain inherent fundamental advantages can be employed to good effect must be evident to its followers from the ability of Davenport's car to beat contemporary Grand Prix Sunbeams, Vauxhalls, Brescia Bugattis, and Beardmores, etc., during the period 1926-8.

Before going on to survey some of the recent V-twin racing jobs, it is interesting to take the 1920 racing G.N. as a standard by which to gauge subsequent development work on the air-cooled V-twin engine. The G.N. used at this time by Capt. Frazer-Nash for track racing had an engine of 84 mm. × 98 mm. (1,086 c.c.) designed and built for the 1914 Cyclecar G.P., and modified somewhat in 1919. It was a 90° twin with vertical finning on the heads, which were each held down by four long studs. The valves, 47 mm. in dia. and of ordinary nickel steel, were set at 90° and operated by push-rods and rockers. There was a curved bridge member over each head, carrying an auxiliary valve guide, the valve spring abutments, and h.t. lead tube. The plug entered the head at an angle between the valves, with the compression tap opposite. Ignition was by a single chain-driven magneto. Lubrication was by twin lines from the tank, one feeding the main bearings, the other the crankcase interior. The flywheel was steel, and the big-ends bronze. A single carburetter was used, and the cams were special. With knife-edge nose and long streamlined tail, this engine pulled ratios of 3, 4½ and 7 to 1, with 650 mm. × 60 mm. tyres. Incidentally, the chassis had wire and bobbin steering, three leaf quarter-elliptic front springs with radius rods below, and two leaf damper springs above, and quarter-elliptic rear springs with Houdaille shock-absorbers and additional damping from ash-buffers carrying rubber pads.

Davenport's car, known as "The Spider," had an 89 mm. × 120 mm. (1,493 c.c.) 90° engine, with four valve heads, and chain-driven o.h. camshafts. The pistons were Hepolite, the carburetter a Solex, and ignition was by M.L. magneto. The car ran on Discol R.D. fuel and Castrol oil. It cost its owner £300 in pieces, and something like the same sum was spent on development. Apart from its three absolute records at Shelsley Walsh, it was raced at South Harting and Holme Moss in 1924, and at Southport, Blackpool, Colwyn Bay, Morecambe, Skegness, Gopsall Park and Stalybridge, and at Audenshaw dirt track. It made fastest time of the day on more than thirty occasions, and came within 1½ secs. of the solo motor-cycle lap record when tried on the cinders. "Spider" used to cross the line at Blackpool at 100 m.p.h., and reached 97 m.p.h. at Southport, while some idea of its get-away is obtained when it is mentioned that it has been started in *top* speed at Southport and still beaten all rivals. The car was bought from Capt. Frazer-Nash in 1922, and built up in 1923. Davenport subsequently designed many new parts, and rebuilt the engine about a dozen times, until only the heads, timing case cover and one cam-box remained of the original. Victor Horsman, the Triumph exponent, designed special big-ends. The chassis was shortened one foot, and a single-seater streamlined body made up. As the old Southport rules demanded a passenger, a two-seater body was also fitted on occasion, as carrying a passenger on the tail was found to be too precarious! The weight was approximately 7½ cwt. For Shelsley record runs the ratios were 5.2, 6.4 and 8.9 to 1, but for Southport and Blackpool, four speeds were used, of 3.5, 4.8, 6.4 and 8.9 to 1. The engine gave excellent power over a wide speed range, the maximum being about 75 b.h.p. at 5,000 r.p.m. A maximum of some 65 m.p.h. was available on the 6.4 to 1 ratio. The cylinders were off-set.

Of recent years, H. G. Symonds, who used to have offices in the same building as the old MOTOR SPORT offices, revived "The Spider," and ran it in sprint events, but it was not running as well as when Davenport had it.

Another racing G.N. developed from the original 200 Mile Race cars, and very prominent at Southport was E. L. F. Mucklow's "Tiger III." This had the "Akela" 84 × 98 mm. (1,087 c.c.) V-twin G.N. engine, with the shaft-driven o.h. camshafts. Spindles driven from the crankshaft carried the base bevels for the drive, and the vertical shafts in front of the cylinders had vernier couplings to facilitate valve timings, and were splined at the top end for head removal, while the heads were attached to the crankcase by four long studs apiece, and the top camshaft bevels enclosed in aluminium cam-boxes—normal G.N. "Akela" practice. There was a large Solex carburetter per cylinder, fed by air-pressure from a tank in the tail. The compression-ratio was approximately 9 to 1, and the output was in the region of 55 b.h.p. Ignition was by two Bosch magnetos driven one from each timing spindle. Lubrication was by hand-pump to the top and bottom timing gears by separate feeds, and from the same tank by pressure to the crankcase. Four speeds were used, and the single-seater body resembled those of "Kim" and "Spider," with taper nose, cylinders protruding, and detachable undershields ran from front to rear axles. Apart from variation of sprockets, further change of gear-ratio was possible by using two different rear wheel sizes. This car was consistently raced by H. B. Prestwich, but suffered minor engine damage when a piston broke, around 1933.

E. J. Moor went into the matter of developing the G.N. engines very thoroughly indeed, with his series of "Wasps," one of which he was still racing last year. "Wasp I" was built in 1924, just when the more conventional racing-cars were compelling the normal racing cyclecars to take a back seat. The engine was the 84 × 98 mm. chain-drive o.h. camshaft

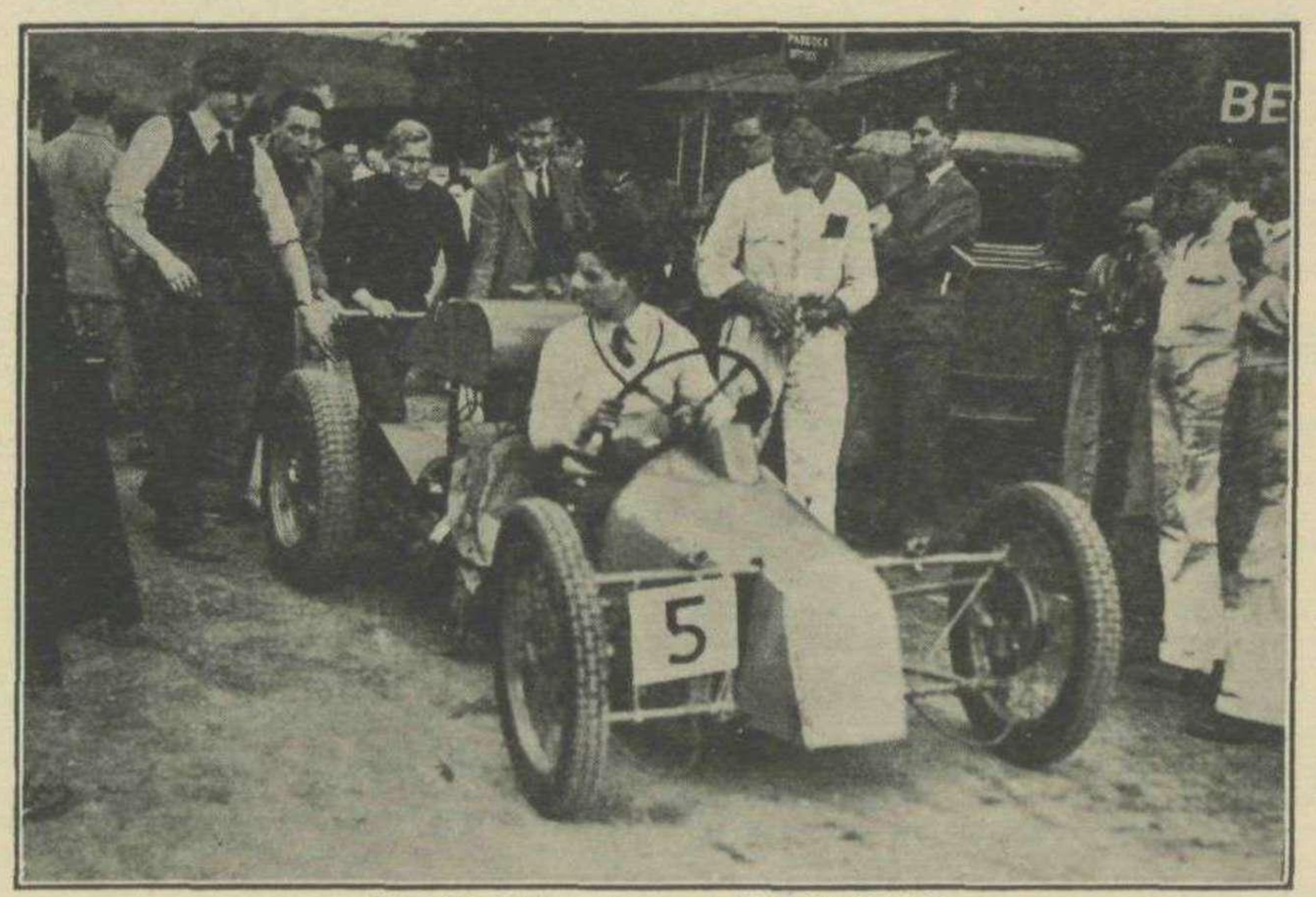
THE V-TWIN FOR SPRINT WORK—continued

twin, having two valves per cylinder. Here we may digress to say that we have always considered this unit to be the "Mowgli." However, the issue is confused because some of these chain-driven o.h.c. engines have two valves per cylinder and others four, although in this case "Akela" heads have probably been adopted to take sprockets on the camshafts instead of bevels; even H. R. Godfrey has forgotten the type names of the various G.N. engines, and we should like to hear from anyone who knows them. These chain-drive o.h.c. engines have the drive behind the cylinders, the long ordinary-link chain driving a camshaft over each head, which operates the valves via rockers enclosed in alloy cam-boxes, while the chain is driven direct from an external sprocket on the crankshaft and tensioned by a jockey-sprocket which slides for adjustment in a slotted bracket on the top face of the crankcase, and is locked by a clamp bolt. "Wasp I" had one of these engines considerably tuned, and a crude single-seater, yellow and black body replacing the original two-seater. She ran well in North Country events, although tending to inflammability. Later new cylinders and a longer stroke of 89 mm.×120 mm. (1,493 c.c.) was tried. The output was improved, but the cylinder holding-down studs now tore out of the alloy crankcase. A new cast phosphor-bronze crankcase, to some extent lightened by turning, was made in London, and the engine then commenced to break connecting rods. It is most interesting that the crankcase never suffered, although the timing gears, valves, and rockers would be badly damaged as the pistons contacted the heads. A cure was effected by making up new con-rods of Vickers-Armstrong "Vibrax," heat-treated to 110 tons tensile. At this period, Davenport's four-valve "Spider" was faster than the "Wasp," and also often fastest amongst the 2-litre cars. Consequently, Moor increased the bore by ½ mm., to 89½×120 mm., or 1,510 c.c. This enabled him to enter the 2-litre class, and in 1928 G.N.s were first in classes 2, 3 and 4 at Shelsley. Thereafter the supercharged 2-litre Bugattis really began to move, but "Wasp" still managed second place in the class. "Wasp I" was raced until she came off her tow-bar and split a telegraph pole right to the top; she was eventually rebuilt, but always suffered from a bent chassis. "Wasp II" came into being in 1930. She was one of the "Akela" 200 Mile Race cars, in poor condition. Camshafts and rocker-arms from Davenport's 1929 engine were installed, a new big-end fitted, and the body lightened. In this form she was about 4 secs. faster at Shelsley than "Wasp I." During the winter, thorough rebuilding took place. Two track-racing Amal carburetters, a different type of big-end, and Rudge motor-cycle dirt-track pistons were used, and a very light, tailless body fitted, the driving chains being quite exposed. The wheelbase was reduced by one foot, and a new front axle, 9" wider, fitted. On her first appearance "Wasp III" climbed Shelsley in 48 secs., a 1,100 c.c. class record. At the next Shelsley meeting, three valve springs replaced the original two per valve. It was on this occasion that the off-side cam-box blew off at the S-bend, rockers, tappets, bits of valve, and so on, sailing into the trees. The climb was completed in 57 secs., and all the pieces subsequently retrieved and welded up in time for the car to run in the Brighton speed trials. On this occasion faulty dope resulted in momentary flat-spots, but the standing half-mile was covered at an average of 56 m.p.h. That winter a tail was added to the body. At the first Shelsley meeting of 1933 the engine mysteriously lost 1,000 r.p.m., eventually traced to a broken inlet rocker arm, possibly dating from the previous year's disintegration.

"Wasp IV" had a Brescia Bugatti engine, and is outside the scope of the present study. "Wasp III" was rebuilt for the 1934 season. The original "Akela" bronze four-valve heads had been very materially modified and had reached the limit of efficiency. So Norton racing 596 c.c. heads were adapted to the G.N. engine. To accommodate the difference in holding-down bolt centres, the original holes were plugged, the crankcase re-drilled and tapped, and the barrels freshly drilled. As there was an appreciable difference in the camshaft drive lines, new shafts were made up, roughly 1" longer, and the drive end of the Norton cam-boxes was turned off, and aluminium castings made, welded on to Norton boxes, and machined to take the G.N. drive. Adaptors were made to enable the Amal carburetters to be used with the 60° flanges. One set of cams had to be reversed and the plug hole tapped in the opposite side of the head, to further suit the Norton heads to a 90° twin-cylinder engine. The engine now easily ran up to 7,000 r.p.m. It was raced until quite recently, but in 1,066 c.c. form.

One of the first attempts to supercharge a V-twin car engine, and one of the few attempts to blow a G.N. unit, was made by H. B. Showell about 1932. In 1927 Showell bought one of the 1922 200 Mile Race G.N.s which had been enlarged to 1½-litres, with single carburetter and magneto. In 1928, with two carburetters and raised compression-ratio, it ran at Shelsley and crashed badly, damaging crankcase, front axle and chassis. Some £300-£400 was then spent in rebuilding it. The 1,493 c.c. engine had phosphor-bronze four-valve heads and the chain camshaft drive *before* the cylinders—yet another version of G.N. layout. The compression-ratio was 9.8 to 1 unblown, and the engine peaked at 5,000 r.p.m. Later a No. 8 Cozette compressor was driven from the nose of the crankshaft. It drew from an S.U. carburetter bolted direct to the casing at frame level on the off side and fed into a T-pipe attached by hose joint to the outlet on the near side, the blow off valve being beneath this joint. This T-pipe joined the ribbed inlet ports by hose-joints. Two magnetos were used with two plugs per cylinder, hung from plates bolted to each rocker-box, and driven from the camshafts, the rear plug leads passing through a guide clipped to the induction pipe. The advance and retard levers were coupled by a transverse rod, spring-loaded to the off-side mag. plate, and controlled by Bowden cable. The car never appeared prominently. About the same time, Keith Anderson built the blown G.N. "Akela II," but this, too, never made a name for itself. That cheery mortal, Edward Pyddocke, also built up a "Mowgli" G.N. and ran it on the road in full sprint trim for a while.

Breaking away from usual G.N. practice, but achieving greater success than almost any other racing V-twin of the period, John Bolster's Bolster-Special "Bloody Mary," did much to remind sceptics that reduction of weight by reason of air-cooling and a simple transmission,



The Freikaiserwagen at Shelsley Walsh

THE V-TWIN FOR SPRINT WORK—continued

could embrace performance unbeatable by modern racing jobs. The Bolster-Special was evolved from G.N. and Bleriot-Whippet bits, and was run as a road car for a brief, but exciting, spell. She was built in 1929, with a pre-war J.A.P. engine, an orphan gearbox and belt drive. When the first engine had had enough and had complained in no uncertain terms, another was put in, which hauled out the crude transmission. A 1924 s.v. four-cam 981 c.c. J.A.P. V-twin was put in, set in line with the wooden frame of $1\frac{1}{2}'' \times 3''$ ash, driving by chain to a four-speed close-ratio Sturmey-Archer gearbox, with final chain drive. "Mary" climbed Shelsley in $48\frac{4}{5}$ secs. in 1932, and a 1926 o.h.v. J.A.P. motor was then put in. This was quite a standard push-rod 981 c.c. engine, with polished internals, raised compression-ratio and special balance, the maximum revs. being about 6,500 r.p.m. The ash chassis was carried quite high on quarter-elliptic springs, and the centre of gravity kept reasonable by seating John alongside the machinery on a low-slung plank, the solid rear axle just behind him. There was a single brake on the rear axle, and the driver used to bind his left arm as some protection from the close proximity of exhaust and chains. The gear-ratios were changed to suit different courses, by fitting different engine sprockets and gearbox pinions. For Shelsley the gear-ratios were: 6.1, 7.3, 9.1 and 11.8 to 1, top being used up to the "S" and again on the final straight, and second right through the "S." The whole car weighed only 5 cwt. It performed well and sensationally at many venues, although overturning at Shelsley in 1933. For 1934 Bolster wanted better road-holding, and f.w.b., which meant more avoirdupois. To counter this, more power was needed, but to further increase the engine speed, or to supercharge, was considered likely to court unreliability. The problem was very cleverly solved by lengthening and strengthening the chassis and adding another J.A.P. V-twin, giving a total capacity of 1,162 c.c. The engines were mounted in tandem, and coupled by a jockey-tensioned chain. The rear engine drove by chain to the gearbox, and the gearbox by chain to the rear axle. The car ran very well indeed, and was only laid up when Bolster borrowed its two engines for his new four-engined, 4-litre job, in which a metal chassis, more conventional driving position and i.f.s. were incorporated.

This car, although using V-twin engines, comes rather outside the scope of this thesis, as do the various specials using a multitude of single-cylinder engines, such as Charles Martin's ambitious car with four J.A.P. engines set in a square, and Richard Bolster's fairly recent experiment with four motor-cycle engines set in line in his G.N. chassis, and Waddy's F.W.D. two-engined Fuzzi. Such cars call for special means of coupling the engines and special chassis, and are not only costly, but highly experimental, so that they are just as likely to be temperamental in the Paddock as Bolster feared his J.A.P. engine would have been had he blown it—admitted his solution was to multiply motors, but it takes a Bolster to do such things successfully. So the author will confine himself to developments of early V-twins, or to chassis in which well-proven proprietary V-twins have been easily installed.

Richard Bolster's G.N. ran in 1933 with a "Mowgli" 1,086 c.c. engine having twin carburetters, special heads, polished ports, h.c. pistons and roller big-ends. It ran on dope fuel and would do ten practice laps at Donington and a couple of races without trouble. The chassis was a foot shorter than standard, had four-speed G.N. transmission, Hartfords fore and aft and a special f.w.b. front axle. Later, a six-cylinder M.G. Magnette engine went in, cooled by a Darracq radiator, but we are only concerned with two-lungers.

Another racing V-twin which reached its prime around the 1932-4 period is the Meo-Special, interesting because it was prepared for Brooklands racing rather than for speed trial work. M. Meo commenced conversion work on a 1922 G.N. with "Mowgli" engine in 1929. The two-valve 84×98 mm. engine was considerably modified by 1932. It had I-section connecting rods, and the main and big-end bearings used $\frac{3}{8}'' \times \frac{3}{8}''$ uncaged rollers. The heads were Meo's own, having almost hemispherical combustion chambers, with 14 mm. plugs set towards the centre of the head and inlet valves larger than the exhausts. A large Amal carburetter per cylinder replaced the original, and these were mounted with chokes at 60° to horizontal to give a straight flow into the ports. The "Mowgli" chain camshaft drive was replaced by separate chain drive to each camshaft, the chains being enclosed and tensioned by leaf springs. The rockers actuated the valves via short push-rods to relieve side thrust. The compression-ratio was 9 to 1, but could be raised to 10.5 to 1 by removal of compression plates. The special pistons were of "Y" alloy and motor-cycle hairpin valve springs were used. The engine ran on R.D.1. Ignition was by a Bosch magneto driven by vernier coupling from the nose of the crankshaft, and a cut-out was carried on the gear-lever. The engine was very considerably modified, even to the method of cylinder barrel and head anchorage, and finally only a few 1922 components remained. The chassis was likewise materially altered, until only the bevel-box and a few odd pieces of the original were in use. The new frame was rigid, unlike the usual G.N. "bedstead." From just behind the clutch to a point in front of the bevel box, two channel members formed a large "A," and at the apex of the "A" were two cross-members, one below and one above the chassis side-members. Straight side-members were retained. Suspension was by quarter-elliptic springs mounted on steel blocks about 3" above the chassis to give a very low build. The drive passed via a G.N. type clutch and bevel-box to four-speed G.N. transmission, giving ratios of 3.5, 4.0, 5.8 and 8.3 to 1. The outside gear-lever had a locking device to prevent the engagement of two speeds at once, and the chains were $\frac{3}{4}'' \times \frac{7}{16}''$. The wire wheels carried 700×80 tyres. The tubular front axle was of straight type, which gave a large span between spring anchorages. The shock-absorber arms acted as radius arms, which would be relieved of much of the braking torque had f.w.b. been fitted. It was planned to fit such brakes, operated by steel strip. Steering was by special G.N. bevel-box and drop arm. The front track was 3' 9"; that at the rear 3' 4". A very well streamlined wooden two-seater body was fitted, with staggered hammock seats, cylinders within a bonnet from which only the cam-boxes protruded, and a long tail and full undershield. The exhaust pipes ran down each side of the body, the ports having finned coolers, into Brooklands silencers. The facia was cowled before the driver, and carried rev. counter and air-pressure gauge, and the steering wheel was spring-spoked. The $6\frac{1}{2}$ gallon fuel tank in the tail was fed by hand-pressure and had a Meo quick-action cap. The engine was lubricated by a Pilgrim pump. The Meo was entered for the 1932 B.A.R.C. Inter-Club Meeting, but was a non-starter due to slip-ring trouble. The writer had a brief ride in it during practice, when it did about 90 m.p.h. over the quarter mile. It ran again at the 1933 Inter-Club Meeting, but was over-handicapped. Since this time it has disappeared, and it would be most interesting to know where it now is, for it was about the last of the track-racing cyclecars.

Another remarkable job was the Glegg brothers' "Dorcas," which had a J.A.P. engine and four-wheel drive, composed of a B.S.A. front assembly and Bugatti rear parts, the drive being arranged to change from four to two-wheel drive while cornering, at one time. "Dorcas" once assayed an M.C.C. "Exeter" and it still runs at sprint meetings, now very well bodied.

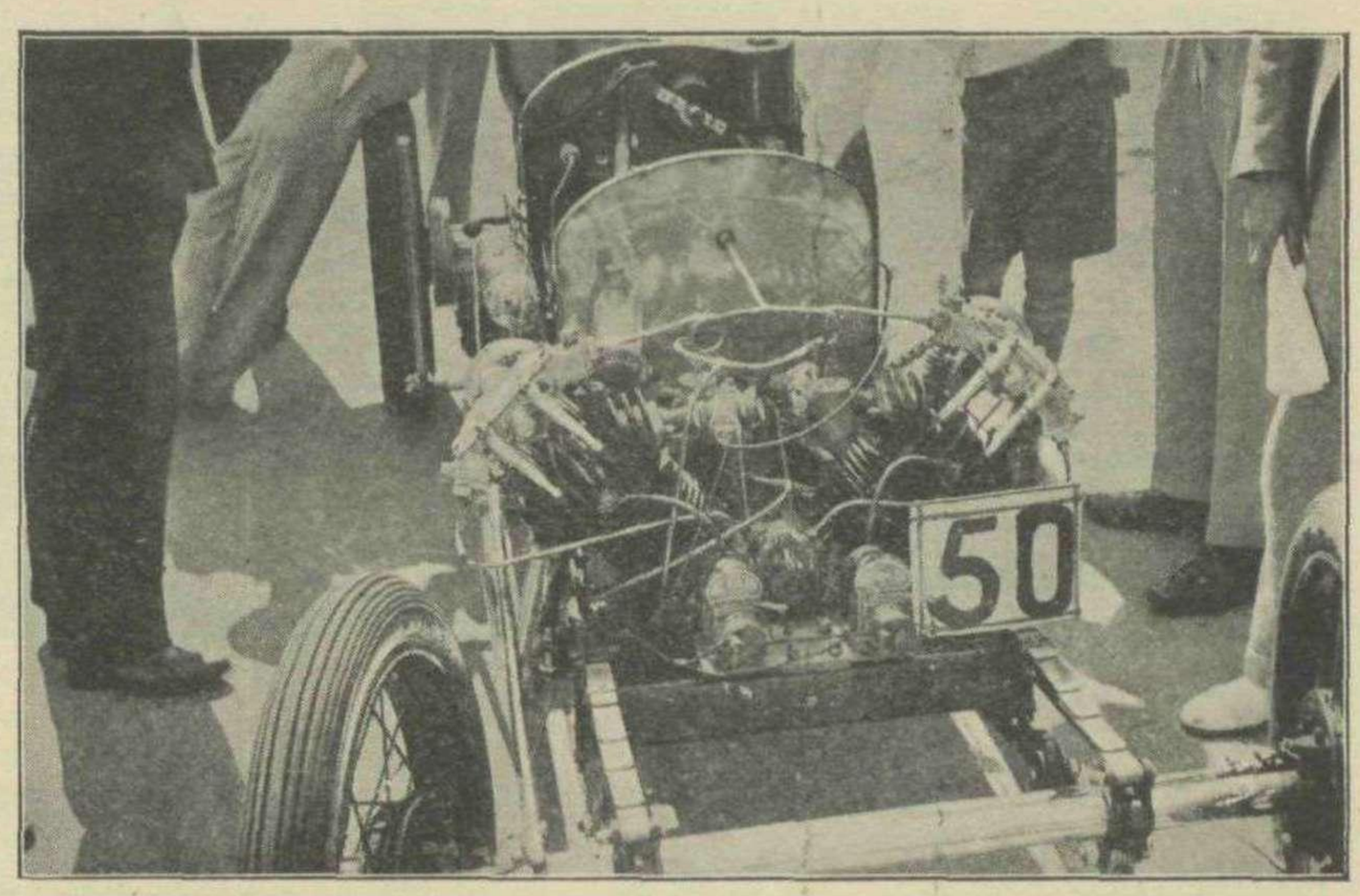
Typical of modern cyclecar practice is David Fry's remarkable "Freikaiser-wagen." Largely designed by Dick Cæsar, this car was built at Cambridge in 1937. The transmission is G.N., but Morgan independent front suspension is cleverly incorporated, with lighter coil springs than standard. The engine is a 1,097 c.c. V-twin Blackburn, designed in 1932 by Robin Jackson. It has push-rod o.h.v. and is blown at 14 lbs. per square inch by a chain-driven Marshall supercharger set behind the crankcase. The fuel tank above the engine is of aerofoil shape to direct air on to the cylinders, and it feeds by gravity to an S.U. carburetter with Bowden throttle control. The driver sits ahead of the engine and has only a streamlined "coal-scuttle" for his legs ahead of him. The engine is amidships. It runs up to 6,000 r.p.m., and cooling is something of a nightmare. Lubrication is by drip-feed. The frame is braced by a single cross-member and is very rigid, engine and clutch mountings acting as stress members. It is underslung at the back, and the fairly soft springs are wedged up. The Rudge front wheels carry $4.00'' \times 19''$ tyres, and have Rudge brakes, cable operated, and the rear tyres are $6.00'' \times 16''$. The rear axle is sturdier than the normal G.N. axle, and carries a single brake; all brakes have special Ferodo linings. A large rev. counter is set in a cowling right before

THE V-TWIN FOR SPRINT WORK—continued

the driver. The steering is rack and pinion from a pre-1914 Morgan. The "Freikaiserwagen" runs on straight dope and weighs under 6½ cwt. It has had some outstanding successes and does 50, 65, and 90 m.p.h. on the indirect gears, and crossed the line at Syston at 102 m.p.h. in top gear, still accelerating. The writer has often exceeded 100 m.p.h. in ordinary cars, but David Fry must experience very much accentuated emotions at this speed in the nose of his very light vehicle!

Another very potent V-twin is Gerald Sumner's Sumner-J.A.P. It started as the G.N. "Gehenna," driven by Charles Martin and others. In 1935 E. C. Baragwanath designed a special push-rod 998 c.c. J.A.P. sprint engine, of which only three were built. This engine had duralumin-filled push-rods to obviate distortion, and a No. 8 Cozette compressor mounted behind the near side cylinder, blowing at 14 lbs. per square inch, and drawing from a special Amal carburetter, of which only two were made. The G.N. frame was extensively drilled, and fitted with this engine. During the winter of 1936 the chain transmission was replaced by a "2.3" Bugatti gearbox in a Brescia Bugatti shell, driving to a 2-litre Bugatti rear axle. The rear brakes are Bugatti and the clutch a Borg and Beck. A special tubular front axle, with M.G. brakes, is sprung on quarter-elliptic springs, with radius arms below and friction shock-absorbers beside the leaves. The rear axle is sprung on quarter-elliptics. Doubtless this resulted in increased weight, permissible because the engine was now giving about 90 b.h.p. per litre, assuming the ratios were correct. The G.N. transmission has to be strengthened to transmit such power, and chain-breakages while changing speed become increasingly troublesome, but it does score in low weight, speed of change and rear axle adhesion, and in easy selection of useful ratios for different venues. Baragwanath raised the compression-ratio to 7.25 to 1 for one cylinder and 6.5 to 1 for the other, and 89 b.h.p. was realised at 5,300 r.p.m. In July, 1938, a decent body was fitted, with cowled nose, the oil-tank being so shaped as to direct air on to the cylinders. There is a 4½ gallon fuel tank in the tail. Remarkably noisy, the Sumner-J.A.P. can do about 112 m.p.h. and clocked 21.91 secs. at Lewes in 1938. It crashed rather badly at the last Prescott meeting of 1938.

Of more normal G.N. development is E. G. M. Wilkes's Wilkes-G.N. Wilkes started racing a stripped G.N. known as "The Maggot" at Dancer's End in 1932, but as this car—rumour says it was bought for 6/9!—was an almost standard i.o.e. touring G.N. it was not terribly impressive; it would possibly have been a better policy to have run it with road equipment and original body. In 1935 Wilkes acquired a "Mowgli" engine from Sumner and proceeded to overhaul both this engine and his original chassis. The rear springs were flattened and mounted on 2" oak blocks, and new radius arms fitted, The front axle is tubular with Austin Seven brakes and king-pin assemblies welded to the tube, and rod brake operation. Later the front springs were flattened and placed above



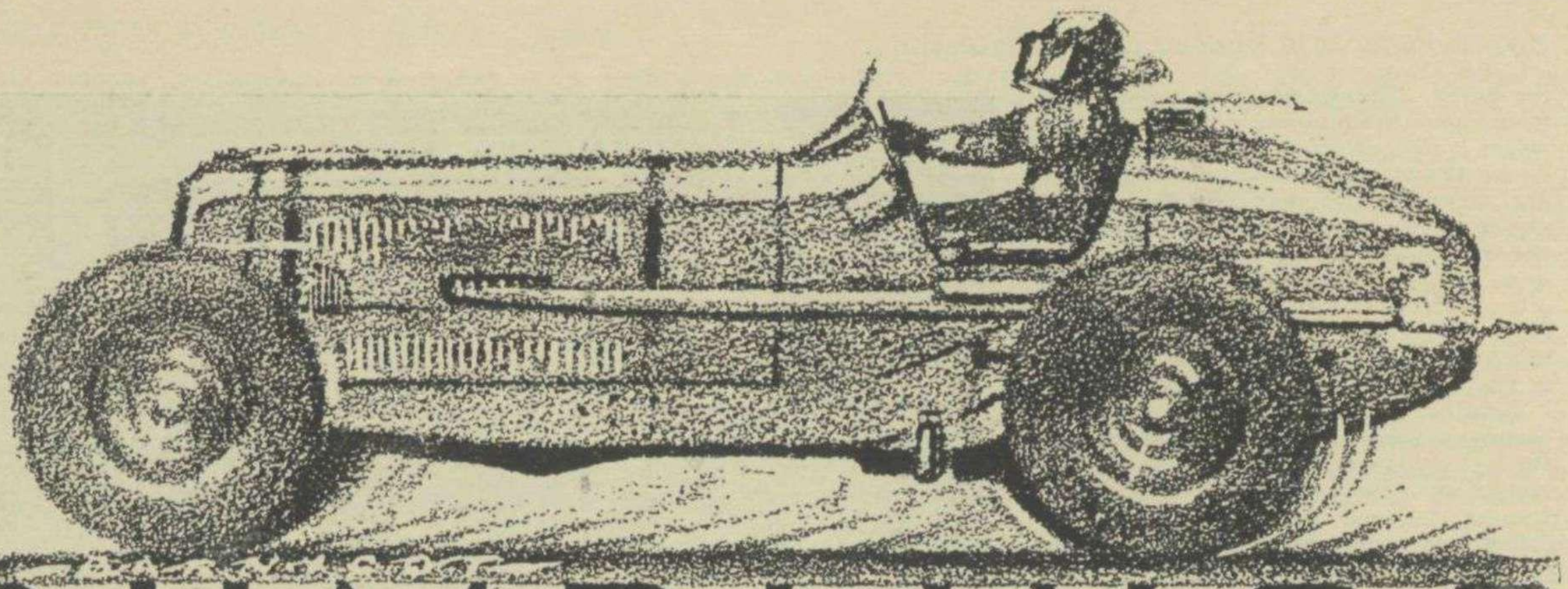
The beautiful finish of E. G. M. Wilkes's "Mowgli" G.N. Special is evident in this picture

the frame. The engine was steadily developed, the valve timing being modified so that the inlet valves opened just before T.D.C., and two single-cylinder B.T.H. magnetos fitted. The inlet ports were welded up to 1.25", tapering towards the valves, and the exhaust ports ground out. Two Amal Type 6 needle-jet single-float carburetters were fitted. To combat chain breakages, the transmission was rebuilt, and a new rear axle made up from a tubular shaft and M.G. brake components. The Wilkes-G.N. carries no body, but there is an oak facia before the driver and the car is beautifully turned out. Although not considered quite rapid enough for Shelsley, it has done extremely well at Dancer's End, Beechwood and Poole. Extensions to the exhaust pipe improved acceleration at the last-named venue.

Another car now very highly developed is C. R. Instone's G.N. "Martyr." In 1929 Instone, along with two friends, acquired an early G.N. with push-rod engine. Throughout the winter much modification took place, twin magnetos firing two plugs per cylinder, and two carburetters being incorporated. Pat Thompson was the brainy gent, according to Rupert, and when his theory and science failed him he went on working—with a 3 lb. Brummagen screwdriver and an enormous crowbar, so that the rest of the team prayed a little something might be left as a souvenir. In 1931 two disasters occurred. Pat returned to Ireland, and the engine blew up most of its valve gear. A new J.A.P. push-rod engine was then installed, but, in spite of a modified clutch, it merely tied the frame in knots. At Shelsley it proved quite impossible to get out of third speed, and the entire climb had to be made on that ratio. The frame was accordingly braced up, and other mods. completed. Then the bevel-drive shaft and axle bent. So the entire transmission was overhauled, the shafts all being replaced in special materials, with the exception of the propeller shaft. The "Martyr", now climbed Shelsley in 49.8 secs. although subsequent inspection showed that the prop. shaft had broken in the bell housing and was driving on the serration of its fracture only! A new clutch and propeller shaft were put in, and only the original side-members remained of the former G.N. A quite reasonable body was fitted, and wheel-spin defeated by the use of Dunlop E.L.P. 5.75"×16" rear tyres. Later still, the engine was Zoller supercharged, and after overturning in practice at Shelsley last year, it took Rupert up in 48.0 secs., winning the supercharged 1,100 c.c. class. Even now we have not exhausted all the V-twin specials. There are the Blackburn-engined Killick and the Carlmark J.A.P., both with engines behind the driver, and the converted three-wheeler Morgans of Lones ("Tiger-Cat") and Barry Woodall ("Chatterbox"), and a number of other G.N. developments.

Those V-twin specials that have been raced of recent times are likely to run against conventional racing-cars again after the war. Although they mostly date from the early G.N. days, their subsequent development has been a highly specialised business, on modern lines. It is hoped that the foregoing survey, if incomplete, will at least be of interest to those who seek individual descriptions of such cars, and that it may provide some applicable information to those who are working on V-twin sprint cars at the present time. To install a multi-cylinder engine in the simple chassis has been done times without number, and eventually was resorted to commercially by G.N. themselves. But it imposes great stress on the transmission if a useful power-gain is achieved, and if extra power in some abundance is not forthcoming, there is a loss on account of greater weight of block, head, crankshaft and cooling elements, etc.

(*Continued on page* 119)



RUMBLINGS

Old Masters

IT is possible to withdraw behind the yellow doors of a certain garage in Chelsea and to forget for as long as one is able to spare the troubles and tribulations of this mad, destructive world. I was privileged to visit the Clutton-Short collection of motor-cars the other evening, and I am going to risk incensing the non-vintage reader by touching on some of the absorbing things I saw and learned while so doing. Let us recover our breath on seeing so many fine cars beneath one roof and repair to the right hand far corner of this fascinating shop. Here stood the 4½-litre 1914 Opel, recently bought in Clacton, said to be the actual car handled at Brooklands immediately after the last war by Segrave. Short particularly wanted this car, and he is carefully rebuilding it. The body, which looks very like that on the car in her Brooklands form, has given considerable trouble, but something like a decent surface is now showing up, preliminary to painting. The radiator is very like that of Mavrogordato's Opel, and is a remarkable example of hand-built craftsmanship. The valve gear operating the sixteen o.h. valves is worthy of prolonged study, and the engine is very like that of a back-to-front Bentley. It is carried on an angle sub-frame and drives to a separate gearbox set well back in the frame, via a clutch which seems to retreat largely into the box itself. The chassis side-members are horrifically casual, and the front wheels carry very thin section, high-pressure tyres. It appears that Segrave fitted very long rear springs to replace the original, and these are still in place.

Beside this Opel was the 1920 3-litre ex-Dunfee straight-eight Ballot, as described in MOTOR SPORT of July, 1937. It still exceeds 100 m.p.h. comfortably in half-a-mile of motoring, in spite of being difficult to take off quickly on account of a small clutch and high gear-ratios. The tail is not the original, but it is possible to see the well in the bottom panel in which the spare wheel sat throughout the 1921 French G.P.

A newcomer beside the Ballot turns out to be a 1913 T.T. Sunbeam, in use until fairly recently, as the ungainly, very wide wooden two-seater sports-body suggests. The engine has that remarkable o.h. cam gear of the type, with camshaft right above the inclined valves, and exposed stems and tappets. The single carburetter feeds through a liberally water-heated manifold on the off-side. In the opposite corner to the Opel stood a low chassis 4½-litre Invicta, the actual car which won the Alpine Trial some years ago. Beside it was a very imposing blower 4½-litre Bentley, with the body stripped from the chassis with a view to making it into a sprint car, a job of work which may be completed some day. It had as a companion another blower 4½-litre, carrying a black touring body, but the engine was being stripped to provide pieces for the reassembly of an engine for Robertson-Rodgers's single-seater ex-Birkin Bentley. Both these cars had the huge Villiers-Roots super-chargers with the twin carburetters on the off-side, the unribbed casings suggesting 1930 vintage. When you observe the mounting of this big supercharger in a chassis from which the radiator has been removed, it seems surprising that chassis flexion does not worry the drive, but the special chassis frame used for the blower cars is quite adequate in this respect. Short is certainly a Bentley enthusiast and his own car is a beautifully turned-out blower 4½-litre tourer, with the later, higher-boost ribbed blower. A very nice O.E. "30/98" Vauxhall stood beside the Bentleys, so it was hardly surprising that John Bolster was soon wrapped up in argument with Sam Clutton over the respective merits and demerits of the two marques. To Sam's retort that the "30/98" that goes so very well is usually tuned, Bolster observed that while lots of people did start pushing up the compression-ratio of these cars some years ago—his own car and Ronnie Hughes's had identical increases and, to-day, Heal employs a very considerable increase—actually Beaver got quite as good a performance with the original low ratio. It is essential to change the exhaust valves if the ratio is raised to any extent. Definitely John Bolster is a "30/98" fan, and he stil regrets ever having sold his car—he sold it to E. G. M. Wilkes, who unfortunately elected to take delivery

RUMBLINGS—continued

on the night of the experimental black-out. The Bentley which was leading him home was stopped on account of the immense quantity of light it was displaying just when Wilkes was planning to come past in his new possession at a truly great velocity. The result was that he arrived backwards, and proceeded to spin round a lot of times in the midst of the police persons, before vanishing backwards along the grass verge to the spot where the accident ultimately happened . . . Bolster does not show any particular keenness for the Bentley, but admits that he was charmed with the 8-litre in its day, and recalls riding along a bad road in great comfort at 100 m.p.h. on the back seat of one of these cars. His present love is a modern Delage, and in his Austin Seven van (*c'est la guerre* !) he had the rear axle, now fitted with Girling brakes, with drums in R.R. alloy, made up by Maestro McKenzie, who will eventually rebuild the whole car. Outside the garage stood Short's sober 14/40 Delage, a short run in which revealed great life and beautiful steering. Let us go in again and continue our look around . . . Sam's 3-litre Bentley coupé, doing nearly 90 m.p.h. and using no oil, when laid up, was there, and there was the truly immense 1911 Daimler landaulette with six-cylinder, sleeve-valve engine of 57 h.p. The lines look quite reasonably post-the-last-one, as a new body was fitted in 1924. The maximum speed is about 60 m.p.h., and it goes almost everywhere in top gear. The fuel consumption up from Woking, where it had been stored, to its new home, was in the region of 5 m.p.g. The sight of the famous Birkin single-seater Bentley, standing amongst this collection of older cars, in the red finish as it was last raced, and now *sans* engine, gives rise to a rather throaty feeling. She is really a very big car, but looks quite compact. The body, cockpit offset quite appreciably to the off-side, is a beautiful piece of work, and the interior seems a mystery of fuel lines, taps, and glass-topped filters. The wheel comes extremely near to the driver's cushion, and entry to the seat of government is further obstructed by a protruding lever, so that even Sam without his trousers had much difficulty in getting in or out; Birkin must have had some very nasty moments in getting on to the tail on the occasion when the car lit up in practice at Brooklands. I was interested to learn that the chassis frame is of standard width, and to note the frictional and fluid shock-absorbers on the rear axle, which signify a real attempt to render the Bentley decently stable. The engine from this car is now installed in Robertson-Rodgers's short-chassis blower four-seater, which fuel rationing has temporarily sent to bed. A considerable saving in weight has recently been effected to the four-seater without recourse to expensive replacements of major parts in light materials. Everything about the car has been rendered extra spick and span, and some fifty hours have been put in on the blower alone.

Sam's E-type s.v. " 30/98 " Vauxhall is a grand car, and will soon be all polish, the caps above the valves and the big data plate on the engine side of the facia particularly lending themselves to such treatment. " Floretta," the 1908 12-litre Itala, was put away in a corner. She was driven up from Brooklands recently

DUNLOP TYRES

do their Duty!



40H/120

RUMBLINGS—continued

on " Pool," after Pomeroy of " The Motor " had got her along the standing quarter-mile in 20 secs., and over the flying quarter-mile at 85 m.p.h. with full equipment in place.

The 1923 V12 Delage, now jointly owned by Short and Clutton, stood on the other flank of the s.v. Vauxhall. It took the Land Speed Record in 1924 at 143.31 m.p.h., and was afterwards raced very successfully at Brooklands by Cobb and Bertram. Photographs of the car in 1923 form show that it had front brakes from the commencement, though it is difficult to decide whether two persons were wedged into a single-place body, or whether it was then a two-seater. When it came to this country it had a mottled aluminium single-seater body, but now carries the very narrow two-seater put on by the J.R.D.C. The radiator is now, of course, uncowled and looks so large as to discount the early reports that it is from a standard 12 h.p. Delage. In spite of its capacity of 10½-litres and stroke of 140 mm., the engine runs regularly up to 3,200 r.p.m. The separate cylinders have detachable heads and live in a remarkable single-piece alloy V-block casting, of which there is a spare.

There are also spare camshafts, crankshaft, axles, etc. The original single carburetter, which fed the twelve cylinders through two six-branch manifolds, has to be seen to be believed. Two carburetters per block were fitted in 1931 and these are retained. The valves are vertical in the flat-topped heads, and operated by push-rods and rockers, the inlet rockers being quite short. The engine is usually described as a 350 h.p. unit, but it seems more likely that it develops between 250-300 h.p. Even so, Gerald Sumner, keeping his foot down beyond the line at Littlestone, achieved 148 m.p.h., an awe-inspiring speed at this venue, where a stiff breeze blows off the sea across the course. It is interesting that the front axle is unfaired, although fairing is very evident in the case of the steeply upswept axle beam of the single-seater Bentley—this tendency to streamline the axle for track work is accentuated in the case of the 1912 Lorraine " Vieux Charles," whose streamline axle section contrasts with the immense expanse of flat-fronted radiator and entire absence of streamlined tail. The Delage has a radiator sitting appreciably ahead of the axle, which was unusual in racing-cars of this period. The new owners will use the car in sprint events after the war.

Having now made the complete round of this unique and so very fascinating stable, it seemed reasonable to repair to a Public-House, of which there is a convenient one only a stone's throw away. Very shortly we were joined by Laurence Pomeroy, Junr., Technical Editor of " The Motor," who came in " Herman," his two-stroke D.K.W. The talk for the next two hours was mostly of cars—I wish some of our leading manufacturers had been present, for, while they would doubtless have had us all locked up, better cars could hardly fail to materialise in future . . . ! Not all the discussion was critical, however, and one gathered that Pomeroy especially likes the V12 Lagonda, on which he and Gordon Wilkins have done some very rapid journeys, while he spoke very highly of the all-streamlined 1,100 c.c. Fiat, the V12 Atalanta, and the V12 Allard-Special, and confessed to thinking the 327 B.M.W. with 328 engine one of the finest cars he has ever driven. After much bitter, John Bolster still praised the " 30/98 " Vauxhall, and Sam was inclined to voice the merits of the modern Bugatti, which Pomeroy admitted had the finest steering and road-holding and quickest gear-change of any. John raised the interesting point that brakes play a very important part in his motoring, hence his Girling axles, and he definitely intended his four-engined " Mary " to be all-brakes, only something got the upper hand, and she became rather a lot of engine. He said that nine months of motoring in tractors, vans, and his wife's Fiat " Mouse," made 90 m.p.h. in his mother's Delage seem very fast indeed, but Sam, who now runs nothing at all, said he hadn't noticed this effect. Some good stories were then told and as they had nothing to do with motoring at all, except for the *beginning* of Richard Bolster's celebrations on becoming a Fighter Pilot, we will leave them out. However, it might be said that the designation " 30/98 " is rather a joke in itself, as Laurence Pomeroy, Senr., merely wished to have a thrust at the " 38/90 " Mercédès, which may amuse those juniors who every so often ponder over the possibility of the " 98 " representing the b.h.p. of the original E-type, or the likelihood of it standing for the bore of what was, you recall, a 98×150 mm. engine . . .

Odd Spots

Congratulations to Acting Ft. Lieut. Richard Bickford on his winning the D.F.C. Bickford is a saxophone player of great ability and numbered many of our leading racing men amongst his friends. He flew with Seaman to Monaco in a D.H. " Moth " and joined the Auxiliary Air Force about five years ago. He was a Lancia enthusiast and ran an open " Lambda."

* * *

R. J. Chetwynd-Stapleton has a Thomas-Special with 1½-litre Hooker-Thomas engine, which appears to be a Marlborough-Thomas with new two-seater body.

* * *

S. H. Allard now has a small son.

* * *

The June/July issue of the I.A.E. Journal contains papers on the Quench Ageing of Steel and Exhaust Gas Analysis.

* * *

Arnott has fitted several supercharger installations since the war began, notably to Delage and rear-engined Mercédès-Benz cars.

* * *

There is a Straker-Squire tourer still in use in London, of about 1924 vintage. These cars had 80×130 mm. six-cylinder engines with separate cylinders, and o.h.c. valve gear.

* * *

Any reader who has owned a large number of different cars and has kept a careful record of same, is invited to contribute to the " Cars I Have Owned " series.

PIT CONTROL

By . . . .

We are very pleased to be able to present this article on a most important aspect of racing by one who is a recognised authority on the subject.—Ed.

IT was with diffidence that I accepted the invitation of MOTOR SPORT to write something on pit control. In spite of the fact that I have perhaps achieved some measure of success as a pit manager, I still regard myself essentially as an amateur in motor-racing, owing to my ignorance of the complicated technicalities of an internal combustion engine. However, I suppose I cannot go too far wrong if I confine myself to my own experiences as manager to my cousin, "B. Bira."

With us "pit control" really started with the preparation of the car, for without a well-prepared and reliable car no amount of fine driving or pit control can ever achieve any success. In 1937 our Maserati blew up after "Bira" had had a duel with Raymond Mays in the International Trophy. A few days later I read in a motoring paper, "Prince Chula was angry. He can find no excuse for mechanical breakdown." This remark was an exaggeration, but in some ways it was true. I do not think a well-prepared car for an independent driver should break down. I think it was the refusal or the failure to realise the difference in the approach to racing between a firm and an independent which accounted for the fact that, although there were many fine British independent drivers during the past five seasons, few achieved consistent success.

A firm races to improve their cars more and more, so they must forever be experimenting, hence unreliability must sometimes be faced. An independent should be racing for the fun of the thing only, and the most fun surely can be obtained, if not actually in winning, then in keeping the car going in full fettle right through the race. This can best be achieved by keeping the car which one has bought as standard as possible, just giving it the most careful preparation. Many independents were so busy trying to make detail alterations to their engines that thoroughness in ordinary preparation must often have been lost. Their cars might have been faster than a standard car for a few laps, but they were soon in the dead-car park. I am one of those who believe that a racing car must be designed in one complete whole, and once that had been achieved by the manufacturers, an independent should leave it alone. We ourselves had countless failures in the first three years of racing, when we were still groping in the dark, and it was not until the beginning of the 1938 season that we discovered the true method of an independent, and with this right policy properly carried out in that year by my mechanic, Stanley Holgate, we only had four retirements out of sixteen races. Each of these was traced to faulty material, so by adding a crack tester to our equipment, we went through the 1939 season without a single retirement and "Bira" was never once placed lower than third.. So much for preparation.

Prince Chula of Thailand

The next step for pit control is at the practice, and there again the control is as necessary and important as in the race itself. I am not suggesting that the driver is not capable of judging for himself how he should carry out practice—far from it. I merely think that he *ought not* to have to do so. He should be able to concentrate entirely on his driving, and the entire policy of practice should be supervised by pit control. First class driving is an art so fine in itself that to give it full justice a driver should have no time to worry about other things.

Many people, I believe, used the practice period for further tuning. We did not. Our car was tuned at Brooklands a day or so before, and once the official practice began, we left the engine alone, unless it was absolutely necessary to work on it. Apart from minor things such as brake adjustments, the car was left as it came from the garage.

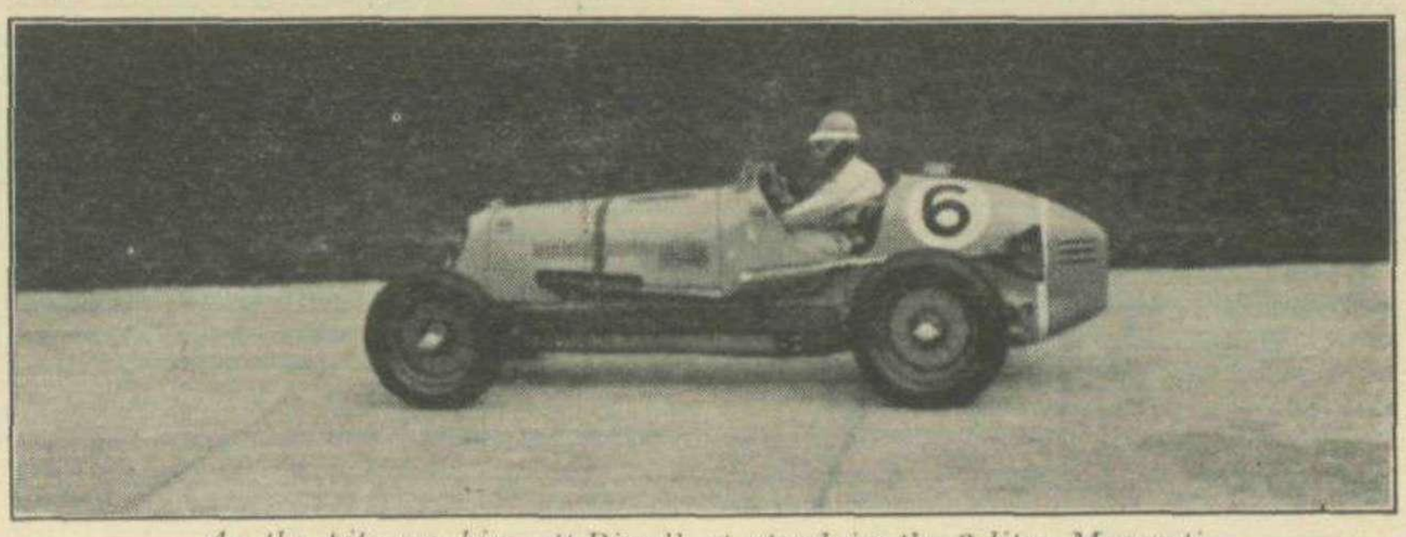
The practice period was used for "Bira" to get the car round the circuit at the fastest speed and yet within safe limits. The idea was that he should get used to knowing his fastest limit on every corner of the course, but it was naturally hoped that this limit would not be found necessary in the race. It was also used to match our car against the speed of the others. This would give us some idea as to what the race would be like, but would not dictate our race-policy as will be shown later. I believe in "Bira" trying to make the fastest lap or as near to it as possible in practice, provided naturally no risk is taken. It has a remarkable psychological effect on the others. On many occasions it caused our strongest opponent to take his engine down the night before the race in the hope of getting more speed. This usually resulted in a hurried assembling. The car would have more speed in the race, but would last only a few laps.

In the race itself, pit control would be impossible if the driver and the manager did not share completely the same race policy, and did not trust each other implicitly. After trying some others, "Bira" and I soon discovered that for a lone independent driver there was only *one* policy. This was to drive the car at the fastest and safest speed throughout the race, regardless of what the others might be doing, in fact, to drive as if one was racing alone. The safety factor concerned keeping the car on the road, and keeping the engine speed within the margin advised by Holgate. My pit control, therefore, consisted entirely of giving "Bira" full information so as to help him to keep as rigidly as possible to this permanently established policy.

Readers who have seen me give "Bira" the "faster" signal may be surprised to read the above, as the theory and fact then seem to be contradictory. The explanation is that my "faster" signal did not really mean that "Bira," ought to have gone faster than he should have done, but that he was not going so fast as he should have done. Thus it was made quite clear that "Bira" was not to obey the "faster" signal unless he agreed that he was not going fast enough. If he was convinced that he had reached the fastest safe limit, and yet the "faster" signal was given, he was to ignore it altogether. A good illustration of this case was the Sydenham Trophy Race at the Crystal Palace in 1938. It was a handicap race, and although "Bira," driving the E.R.A. "Romulus," was leading his group of 1,500 c.c. cars, he was not catching up the smaller cars as he had been wont to do. Further, his lap time was below form and with the engine sounding perfect as he passed the pits I gave him the "faster" signal again and again without result. It was only after the race that he explained the fact that oil had been dropped on the farther side of the course making it slippery, so he rightly ignored the signal and kept to his fastest safe pace, thus finishing second behind Smith's M.G. If, on the other hand, he had tried to go faster he might have passed Smith, but he was much more likely to have skidded off the road altogether.

This mutual trust between us in pit control can be seen again and again in the sixty-eight long-distance races in which "Bira" ran, winning twenty of

(*Continued on col. 3, next page*)



As the pit sees him—"Bira" at speed in the 3-litre Maserati

THINGS IN GENERAL

TO our vast astonishment, we have now heard that State encouragement of the motoring complex during peace results in quite a substantial advantage to a nation during war. I wonder whether the lesson will be remembered after our present trials and troubles are happily over! Or shall we sink back with a sigh of relief into the bosom of a dear old England in which racing upon anything but four legs is simply not done, in which motorists are only tolerated because heavy taxation and heavy fines are paid by them submissively, and in which any speed exceeding an amble is libelled as an eighth Deadly Sin? Will the Pedestrians' Association resume its queer occult influence over governments who invest it with the importance once arrogated to themselves by the Ten Tailors of Tooley Street, and will countless police in expensive saloon cars still be so busy trying to turn a blind eye to trivial offences on the roads that they have no time to see that the peace of our Sovereign Lord the King is not broken in other ways? Will the roads again be blocked by crawling processions of big-bodied, small-engined cars? Will Brooklands still be a haven of peace shared with one or two other enthusiasts who get there as unobtrusively as possible, and will trials still start from some inconspicuous and out-of-the-way point kept as secret as possible to avoid offence to "the public"?

* * *

Or will a post-war Government dare to be a Daniel, using a Bill in default of a sling to kill the Giant Prejudice who has made life so hard for us motoring people for so long? Parliament might make a simple start by altering the basis of our road laws to fit new conditions, and explain to us all that, if we walk into the road, we shall be charged with attempted suicide if we escape with our lives. You think this is a madly revolutionary idea, but it is only the idea upon which French law has been based as long as I can remember: the road is for the vehicle; if you get run over, you have to explain what you are doing to be where you were when the sad occurrence took place. In the new England which I hope is not only a dream, there would be a peerage, not for successful manufacturers, but for Mr. Humphrey Cook, who would get financial support as well in his endeavour to produce a British racing car; Brooklands, Donington, Prescott and Shelsley might look confidently for State help if they needed it; trials would be started in a blaze of noonday publicity by notable statesmen, and any speed under, say, 40 m.p.h. would cause us to be ticked off by whatever mobile policemen survive from the past age.

* * *

It might even be possible that you could keep as many cars as you could afford without paying any tax upon them, and that petrol, like water, would be held to be one of the necessities of life which simply must be as cheap as possible. I don't think our present enemies encouraged motoring quite to this extent, but they did encourage it, and they did mop up all the racing prizes all over Europe; they fostered trials which, so I have heard, made our own attempts at the game look like a Sunday promenade of Mr. J. Citizen in his overcrowded Family Eight (with shoehorn in the toolkit), and they did build roads on which you could only go at a minimum speed. Alas, this kind of thinking is, I'm afraid, Utopian. I remember far too many wars in my time, and after each one of them we have done just as we do when Bill the Burglar pays us a visit: we turn over and go to sleep again with the comforting thought that it won't happen again for quite a time.

* * *

In these days, when the open road is closed to most of us (and even if it weren't, what would be the joy in it when so many good fellows are perforce engaged elsewhere), I find a little distraction in observing things. One thing I notice is the number of fellows who, having had to lay up such things as Bugattis, have bought themselves bicycles of the real old racing breed. One of these told me the other day that, although his mileage is absurd by Bugatti standards, he gets a lot of fun out of the game, for in his rather restricted rides, he sees things that he never saw before, because now he doesn't go too fast to notice them. This attitude of mind may be philosophical, but perhaps it really amounts to making the best of a bad job. I wonder whether, later on, those who have taken to cycling will have so far recovered the open air complex that the genuine open car will again come into its own? A Bugatti man, of course, won't stand for a lid over him, even if furnished with that pathetic sham, a sliding roof, but what about the hothouse plants? Will they demand open cars, and failing them, make an onslaught with hacksaws upon the superfluous part of their pre-war vehicles? Most of them have taken me aside to tell me that while they, individually, hate what the Editor of this journal describes so well as a "fug-box," they have been forced into it by the wife or the best girl (or both) who simply must have protection from the fresh air for those artificial complexions which, I am told, are now all the go.

* * *

Nobody seems to have had time to tell me why there should apparently be no possible substitute for petrol, nor why alcohol, which was used with some success before the war, has been washed out as a combustible, as the French call it. Only to-day I heard that a car has been adapted to run upon a production called Calor Gas, which I believe to be a kind of compressed gas supplied to country people in containers of moderate size, and used for lighting and cooking. I didn't have a chance to see the car in question, but heard that the owner had adapted it at a small cost to carry five containers stowed beneath the seats, and that he got a 200-mile range on one five-container fill. [Calor Gas no longer available.—Ed.].—J.D.A.

PIT CONTROL

Continued from previous page

them. If "Bira" had eased off and then found he was given the "faster" signal, he would always try to obey, however unreasonable it might seem to him at the time. The best case of this was perhaps the International Trophy Race in 1936. Towards the end of that long race "Bira" was a safe second, but I thought he was a whole lap behind Mays. The mistake was caused by the fact that we had a muddle at the refill stop, and I had omitted to put that lap down on my chart. Thus it seemed absurd to keep "Bira" going so fast, and he was allowed to ease off. With eight laps to go, Mays came to his pit for another refill, and I discovered then that "Bira" had been behind him, but really in the same lap, thus he was now in the lead. The "faster" signal was promptly given to "Bira." Utterly bewildered, he yet obeyed and kept ahead of Mays till the last lap. That Mays then passed him to be repassed by "Bira" within sight of the winning post is now well known in racing history. The close finish which delighted the thousands of spectators would not have taken place had "Bira" hesitated to obey what seemed an absurd signal.

It was agreed between us that he was left with no discretion with regard to the "slow down" signal which had to be obeyed, and yet he was not to slow down of his own accord. This is due to the fact that unless one is in possession of full knowledge according to the time chart, one cannot know when it is safe to slow down. There were many occasions when "Bira" was leading easily and thought he ought to have slowed down, and yet had to drive at full speed because the signal was not given.

The best example was the Isle of Man Race, run in a downpour of rain in 1937. "Bira" was driving magnificently in the appalling conditions, and by half distance had a lead of 56 secs. over Fairfield, who was second. When he came by the pit, one could catch a glimpse of "Bira's" surprised face as he searched for the "slow down" signal. Somehow I had had an intuition before the race that Fairfield would not have to stop for a refill. I was proved right, and although "Bira" was overtaken while he was refilling, his lead had been so great that he was able to get it back, and obtain victory.

Although our policy is to drive consistently fast, regardless of others, I always gave "Bira" his position in the race, those of the others, and the gap of time separating him from them. These signals were designed to keep him amused and informed as to the general situation. Thus spectators have often found that I gave more signals than anybody else.

As I see it, races are won by fine drivers driving well-prepared cars. The task of the pit manager is to help in co-ordinating their efforts into the same harmonious channel.

Letters from Readers

A GOOD SUGGESTION

Sir,

May I take this opportunity of congratulating you on continuing with the publication of MOTOR SPORT; it is the one bright spot every month.

I am the proud possessor of a 1927 3-litre Sunbeam which during 1939 I completely overhauled, including a rebore with the aid of an ex-racing mechanic, to whom most of the credit is due. Unfortunately, owing to the war I have very reluctantly been forced to lay it up before it had completely freed.

In spite of not being free and the use of that peculiar liquid known as Pool petrol, it was motoring to the tune of 85 on the speedometer and rev. counter.

At the moment I am running one of the latest Renault "Eights" which I find rather an exciting little car from the performance side.

In these times of evacuation, etc., it is practically impossible to meet anyone and to spend an evening talking about the Sport. I wonder if it would be possible for you to prepare a roster of places where one could meet fellow enthusiasts, one place, say, in every large town (cafés or public-houses, etc.), the only means of introduction being a copy of MOTOR SPORT prominently displayed? I'm sure such a scheme would be welcomed by those enthusiasts in the forces, or evacuated, etc.

I am, Yours etc.

J. OWEN WILLIAMS.

Bath.

* * *

Sir,

We think that you have done a marvellous job of work in keeping MOTOR SPORT going. What we find most interesting in your wartime issues are the articles by various drivers about their own experiences—surely we could have more of these in peace-time? They give the inside human story of the troubles and joys of the enthusiast, which seldom come to light in glib Press accounts. They also provide an amazing amount of information. Who would have realised, for instance, the diversity of cars that K. Hutchison has owned, or that Martin Soames was an expert on the subject of racing Morgans. We are glad to see that Soames (like most of the driver-contributors) is as clever with the pen as with the steering wheel. Incidentally, how he obtained amazing results from his trials Ford V8 should make interesting reading. We are sure that there must be many other drivers who would contribute their experiences—so let's have more of them.

Here's good luck to you.

We are, Yours etc.,

R. A. S. WALLETT,
ALEC S. WALROND.

Cookham,
Berkshire.

Sir,

I found an amazing looking vehicle, engaged in menial toil, "toiling for victory," on a windswept island not far from the Arctic circle. It was none other than a T.G. "12/50" Alvis, *circa* 1927.

The chassis had been shortened considerably, the original prop. shaft discarded, and the rear axle replaced with that of a 1928 Morris Cowley, complete with brakes, bolted direct on to the chassis. The Morris universal was bolted on to the fibre coupling behind the Alvis gearbox, thus retaining the original transmission as far as the gearbox.

On to the Morris half-shafts were fitted stout pinions engaging a large tooth wheel, which in turn was bolted on to the tractor road wheels; this unique layout gave the traction, the top gear ratio being about 30 to 1. The whole weight is about 15 cwt., and although a considerable amount of paraffin was used along with the cesspool fuel, this amazing tractor does the work of two heavy horses and never tires. The old engine starts first pull from cold, and emits a stirring exhaust note from its short and open pipe. It is of interest to note that the oil pressure still reads 30 lbs. per square inch.

The front axle remains untouched even to the double "Hartford shockers"; all the brakes work and are cable operated.

Well, here's to a quick return to normal times. No one will look forward more than I to the day when I can sally forth in my T. type M.G. to Shelsley, Prescott or Donington, my remaining comforts being fond memories as well as the monthly copy of MOTOR SPORT, which finds me in spite of Adolf.

I am, Yours etc.,

"A GUNNER."

On Active Service.

* * *

Sir,

Though I have no reason to doubt it, I had been unaware hitherto that an "Alfonso" Hispano I owned three/four years ago had previously been the property of Mr. W. G. S. Wike (*vide* that gentleman's article "Cars I Have Owned" in June MOTOR SPORT).

I, too, "noticed something wrong" with one of the rear hubs of this car, when a wheel came right off as I was returning to the paddock *after* competing at Littlestone Speed Trials. Sam Clutton, who had very kindly offered to drive the car to and from the meeting for me (I being also a competitor on my "4½") would also have received similar enlightenment, for on the return run to London, what I at first took to be a *real* accident, proved to be the Hispano, again minus a wheel. Clutton had, however, been duly forewarned.

In the circumstances I am doubtful whether Mr. Wike's hint ("and/or tip") was really worth passing on, though there is, of course, the possibility that Mr. Wike, instead of replacing the old razor blades in the worn hub, may have elected to shave with them, that being, I believe, a recently discovered use for old razor blades North of the Tweed!

In any case, Mr. Wike must not describe this Hispano as the one I *now* own, for very soon after the above-related contretemps Mr. Wike's Hispano (*i.e.*, the chassis) ceased to enjoy corporate existence.

I am, Yours etc.,

London, S.W.5. F. LYCETT.

* * *

Sir,

May I include my motor in your census, a 1933 M.G. J.2 Midget, not a very exclusive wagon admittedly, but able to cruise all day at 55-60, and 70 with a bit of elbow room. Astonishingly reliable and unlike many cars of more expensive marques, you can belt her for weeks, and she'll still go just as well as when you started.

I am, Yours etc.,

Nottingham. A. G. S. ANDERSON.

* * *

Sir,

As I now have a good position here in Los Angeles, I must greatly restrict my racing activities. At present, I am working on the organizational plans for a purely amateur auto-racing group. The motor size would be limited to 100 c.c. for o.h.v. and o.h.c. and 150 c.c. for side-valves. This small size would provide safety and low cost. At some later date, 250 c.c. and 500 c.c. classes could be added. The actual racing would be a combination of American and English types. I will write you more of this plan at a later date.

To perfect the above idea, I will need the technical help and experienced advice of those familiar with British racing. I feel that MOTOR SPORT is best qualified for this position.

I am personally acquainted with the majority of the West Coast drivers and car owners. Many of the Eastern drivers are personal friends, and I know such design personages as Fred Offenhauser, Riley Butt, and many others.

Would you run a little notice in your correspondence column to the effect that I would like to correspond with British race drivers and car owners throughout the world? Will exchange information, photographs, catalogues, and publications on racing and motor cars.

It is even possible that I will be in the market for a British racing motor, or even a complete car. I have not yet made up my mind, but I would say something in the 500 c.c. to 1,500 c.c. class.

I am, Yours etc.,

OLIVER F. BILLINGSLEY.

Post Office Box 1003,
Hollywood,
California, U.S.A.

[Please write direct.—Ed.]

Club News

750 CLUB

The 750 Club held a picnic run starting from Kingsdown, Kent, on June 9th. They deserve credit for putting over one of the very few socials of this war involving the use of cars, and after hostilities cease some ambitious fixtures may be expected. Eight cars turned up, comprising Secretary Hunter's tuned Arrow four-seater, to which he will soon fit a Ford Eight front axle to obtain better anchorage and stability; a special, rather spartan two-seater; Birkett's "Ulster," which was claimed to have done 75 m.p.h. on the way down; Frost's very smart black "Ulster," now supercharged; Mrs. Birkett's quite definitely tuned 1933 saloon; Capt. Noon's "Nippy"; Butler's 1932 saloon with E.L.P. rear tyres, and Boddy, in a "Ruby" saloon. After the picnic, a short run and a brief, impromptu acceleration test followed by a hill climb were held, before tea was taken. Hon. Secretary: P. H. Hunter, 39, Warland Road, S.E.18.

CLUB BADGES IN WAR TIME

Under stress of war conditions cars are apt to be quickly disposed of, and consequently we would remind club-members to remove and either destroy or put into safe keeping any club badges normally worn. In the past, cases have been known of cars changing hands, and even appearing in breaker's yards with club badges still in place. Only a short time ago we had a conversation with the owner of a big sports car which displayed many of the more important badges, and, good fellow though this owner was, we felt pretty certain he was not a member of the clubs whose badges his car carried. This sort of thing is very unfair to the clubs concerned, so please take steps to prevent such a happening, even if you have to dispose of your car under rushed circumstances.

WE HEAR

We hear that plenty of fast motoring on official duties goes on down Gloucestershire way. J. C. Pitt is running the more sober of his two M.G.s, his father a 2-litre M.G., and a "J2" M.G.; a "TA" M.G., a 2-litre Aston-Martin, a Meadows-H.R.G., a Frazer-Nash, a blown 2-litre Lagonda, and an SS. 100 are amongst the fast cars in daily use in this part of the world, mostly by R.A.F. officers.

Robin Hanson and one of the Pacey-Hassan crowd are down that way. Worcester is reported to have a 4½-litre Bentley on A.F.S. duties, Jimmy Fielding is running a Railton, and so is John Cobb's brother. Joe Fry seems to be using an S.S.1, the Delahaye having burst its plumbing during last winter's icy spell, and the Freikaiserwagen is likely to be more potent than ever when it reappears. Philip Flower is busy learning to play the piano-accordion, and his brother, who used to passenger him on trials, is doing government work. Midge Wilby is said to be looking after R.A.O.C. vehicles, and both Eason-Gibson and R. L. Walkerley are in the R.A.S.C. Peter Clark now has the 3-litre Alfa-Romeo of about 1921 vintage mentioned in H. L. Biggs's article last month. Richard Bolster is training as a Fighter Pilot, R.A.F. Clutton has just bought Andrew Lietch's E-type 30/98 Vauxhall for rebuilding in a stark guise. Hornsted, of Benz fame, is in the R.A.O.C.

GENERAL NOTES

These times you must count yourself lucky to be able to get in reasonable runs on three consecutive Sundays, so there is reason for rejoicing. A motor-cycle scramble in the Red Roads area had to be seen and at the last minute the comfort of the Austin saloon was gladly forsaken for a lift in an open Riley, even though the heavens had just opened and torrential rain was falling. Two handkerchiefs tied about the neck, and the ancient Burberry donned, and the writer began to enjoy life intensely, even though sitting on the passenger's knees set him well above the protection of the screen, and already we were very wet when a stop was necessary to attend to the electric fuel pump. But it was good fun, fast along the Kingston By-Pass, so that the raindrops literally stung, with a pool of water seeping through to one's very skin in awkward places, ere we were held up by the Sunningdale level crossing. However, if you are reasonably fit, you suffer nothing worse than discomfort from such a drenching, and the keenness displayed at the scene of the event was true compensation. A really good crowd, amongst which the Army, especially the Tank Corps, intermingled, had turned out, in a really imposing muster of cars and motor-cycles. The sight of the riders passing in the most incredibly narrow places up acute hills and riding at real speed through mud-patches and water-splashes re-kindled admiration for the two-wheeler brigade, and it was impossible not to notice how keen their followers amongst the fair sex are, the girls braving the elements to watch, instead of concealing themselves beneath hoods and roof as you expect them to do under such unpleasant circumstances at car meetings. After it was all over, and not before we had admired the quite "Monte Carlo" efficiency of the wireless Army Ford V8 of the present era, we went away to have tea, the good lady in charge eventually asking us to leave as she had to go to church—this was the day of National Prayer. Another heavy rainstorm now came on, through which the gentleman in the open B.M.W. outside would presumably have slept unmoved, had his friends not decided to be gallant and emerge to awaken him. After consultation of the map, we discovered some very pleasant woodland near Shere, and with the sun now lengthening the evening, the Riley was left to its own devices, in a cutting at the top of a quite appreciable hill up which an elderly Alvis saloon was reduced to a crawl, while we walked. Doubtless this spot will be visited again when happier times return, for there is a useful café, open up to 10 p.m., right off the beaten track. In one field we came upon a most mysterious well, by which a stationary gas-engine on a concrete mounting was cunningly mated to what was once a tractor's rear-axle, for the purpose of driving overhead shafting. In the end we just got home in time to put the Austin's lights on before darkness fell, and drive it a matter of a mile to its own garage—incidentally, how the Defence Regulations remind one of worries apart from war, as when we came upon abnormal play in the distributor drive on replacing the rotor arm . . .

The following Sunday a dire catastrophe almost occurred, when a borrowed alarum clock failed to do its stuff at 6 a.m., so that it became necessary to step almost literally straight from bed into the car for a rapid run out through the East of London, via Epping Forest, to Saffron Walden, where the driver had an appointment at 8.30. We were at Victoria at 6.45, and managed the run with ample time in hand. This part of the world being new territory to the writer the walking was much appreciated along some excellent field paths, though every time roads were regained the absence of sign-posts came as a grim reminder of other things, which the continued drone of unseen aircraft hardly let us forget. Two veterans were spied in scrapyards, one apparently a Napier lorry of the last war—possibly a converted tourer—with imposing Cape cart hood; the other, close to a London main road, of unidentifiable make, though there was a strong suggestion of Yank about it, and the radiator smacked of Berliet, but I doubt if they built as light as this. The run back was as rapid as utility performance and absence of real anchorage would allow, as we had to be back again the other side of London at 6 p.m.

The third of these satisfying, consecutive Sundays was occupied attending the 750 Club's picnic at Kingsdown, which involved a quick run out from the heart of the Metropolis. After a gathering in the real old style, complete with racing exhaust note supplied by Birkett's "Ulster," we took tea at the "Pilgrim's Rest," beside the main road, along which

(*Continued on page* iii *of cover*)

THE LATE FLT.-LIEUT. H. E. SYMONS

We deeply regret to report the death of Humfrey Symons, who was on a ship which was apparently mined during the evacuation from Dunkirk. In the last war, Symons did much observation work from kite balloons of the R.N.A.S., flown from destroyers, and later served with the Dwina Relief Force in Russia. He had much to do with founding the Boy Scout movement in Belgium. In 1922, when only twenty-two years of age, he became Sports Editor of "The Motor." In this capacity he competed in many important events, and tested many famous cars. He competed in the Monte Carlo eight times, and won the Coupe des Glaciers three times. His race reports were always most readable, if at one time rather journalistically flowery, a trend which amused the author as much as anyone. We believe one of Symons's fastest test runs was with a "3.3" Type 49 Bugatti. In 1933 he left "The Motor" of his own accord, and commenced editing "Brooklands—Track and Air," assisted by W. Boddy. At this time Symons was doing an immense amount of publicity writing for the motor trade, including instruction books for Aston-Martin and others, and he wrote regularly on motoring in the Society Press. He used an Armstrong-Siddeley Twelve as his personal car. Later he was appointed motoring correspondent to *The Sunday Times*. He coupled this work with his famous and remarkable African journeys, culminating in the Cape Record with the Wolseley, which still stands. His books "Monte Carlo Rally" and "Two Roads to Africa" are motoring classics. Symons was a great driver, and a charming character. His love of adventure, his boyish enthusiasm for this kind of thing, allied to his ability to tackle successfully many trying jobs at once, and his great knowledge of travel in Europe and beyond, assisted his rise to fame as a motoring writer and adventurer. He took a Rolls-Royce to America with the J.C.C. Rally, and when war came joined the R.A.F., in which he was a Flight-Lieut. when he met his death. He never handled racing cars, but was known to have contemplated doing so, had his busy life permitted. He had many adventurous journeys in his journalistic career, by air, sea and land. His health was superb, and doubtless enabled him to survive crashes and hardships in the Monte Carlo rallies and to endure the terrible accident which so nearly ended his Cape Record bid. Humfrey had a great, quiet sense of humour, and he enjoyed most of the good things of this world. He once told the present writer that he endeavoured to make as few enemies as possible in life, and those who met him, even casually, could hardly imagine him doing otherwise. A great motorist and a great sportsman has gone from amongst us. We tender our very sincere sympathies to Mrs. Symons and her small sons.

PRINCE CHULA'S LATEST BOOK

Prince Chula's last book "Road Star Hat Trick," which gives a full account of English and most Continental races of 1937 and 1938, with "Bira" naturally as its central figure, has had a good sale, despite the war. Some copies are still available, as well as very few copies of "Road Racing, 1936." As his first book, "Wheels at Speed," was sold out, and many enthusiasts were disappointed, it is well to know that these two other volumes will not be reprinted. They can be obtained for 8/6 each from White Mouse Garage, 113a, Dalling Road, Hammersmith.

* * *

CONGRATULATIONS

Congratulations to Lieut. H. E. R. Torin, R.N. (Fleet Air Arm) on being awarded the Distinguished Service Cross. Lieut. Torin used to race a Frazer-Nash at Brooklands, and of recent times owned the 3-litre supercharged Maserati which MOTOR SPORT timed to equal Lycett's time with the 8-litre Bentley for the standing quarter-mile, on a wet track. The Maserati caught fire in practice for the opening Brooklands meeting last year.

CLUB NEWS—*continued from page 132*

Army traffic was plentifully mixed with ordinary stuff. We left in time to roam awhile in the country before returning to London, where we met at a small party a splendid lad just back from Dunkirk, who said how heartily sorry he was to have to leave behind his 3 ton Army Dennis—she was blown up with many other vehicles in a field, but he let her engine run until it seized first.

These wanderings made the old days seem ever dearer and raised a hopeful prospect of future motoring, when the miles will again be unrestricted. But as it is, we motor slowly to conserve fuel, only going fast round the corners, as enthusiasts should. It seems significant that a motor-cycle scramble can be reported to have taken place on Army ground, and that another was due at Pirbright on June 23rd. In peace time definite permission was necessary to run events over this property, so obviously such permission must be doubly sought in these times. That it was granted is a very nice answer to those editors of daily papers who suggest that it is wrong and even criminal to use the basic fuel ration for anything but serious business travel. Indeed, the holding of such war-time motor-cycle competitions, often with Army entrants, may point to a happier regard for the Sport in official circles when the war is won. In the meantime, at a suburban tennis club, the lawns are motor-mowed on rationed fuel; this very serious regard of ours for sport is just the thing which will help us so much in Going To It to crush Nazi domination. Let the enemy and the neutral states take heart from the amount of motoring that is still happening in this happy land.

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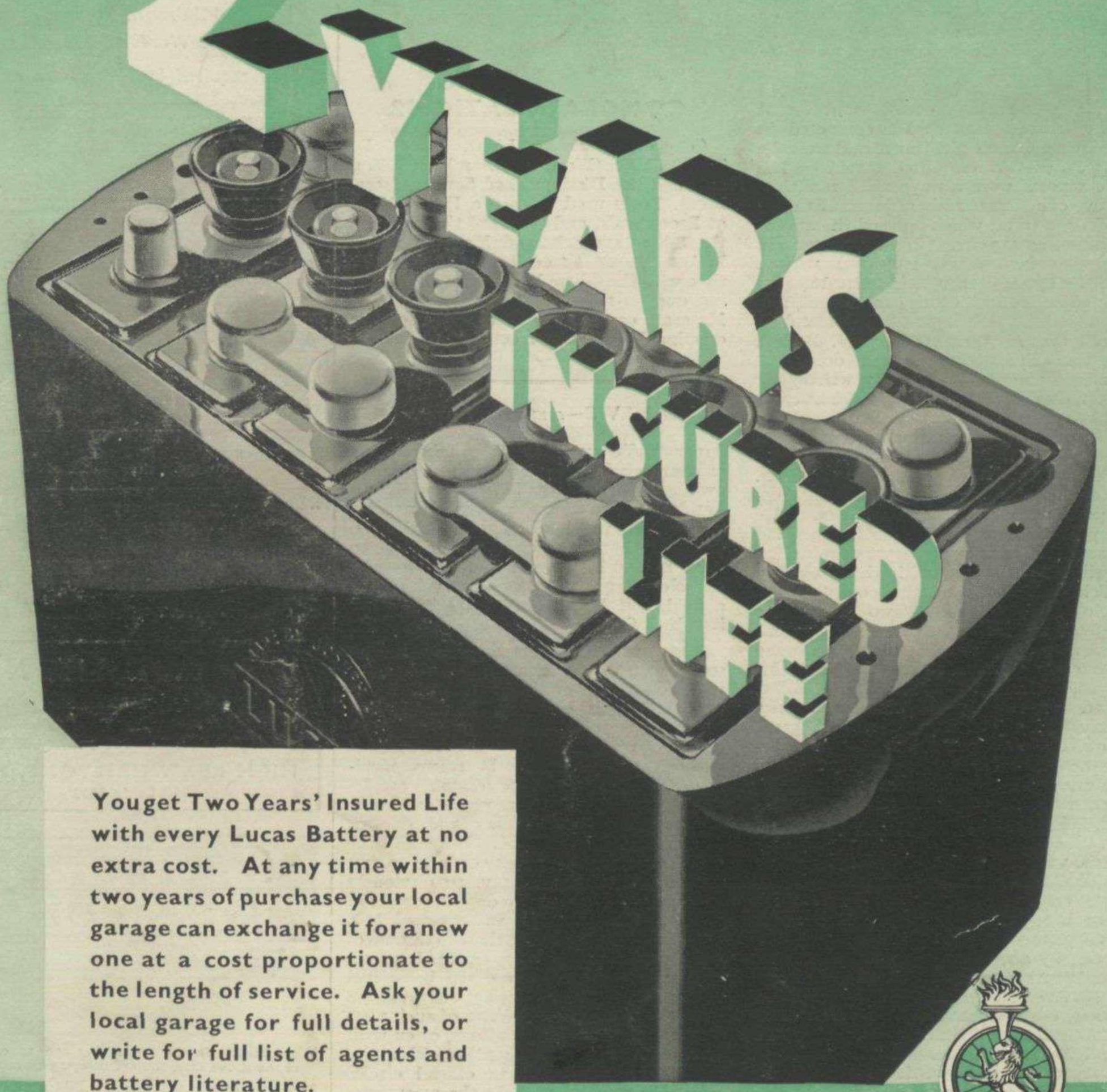
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