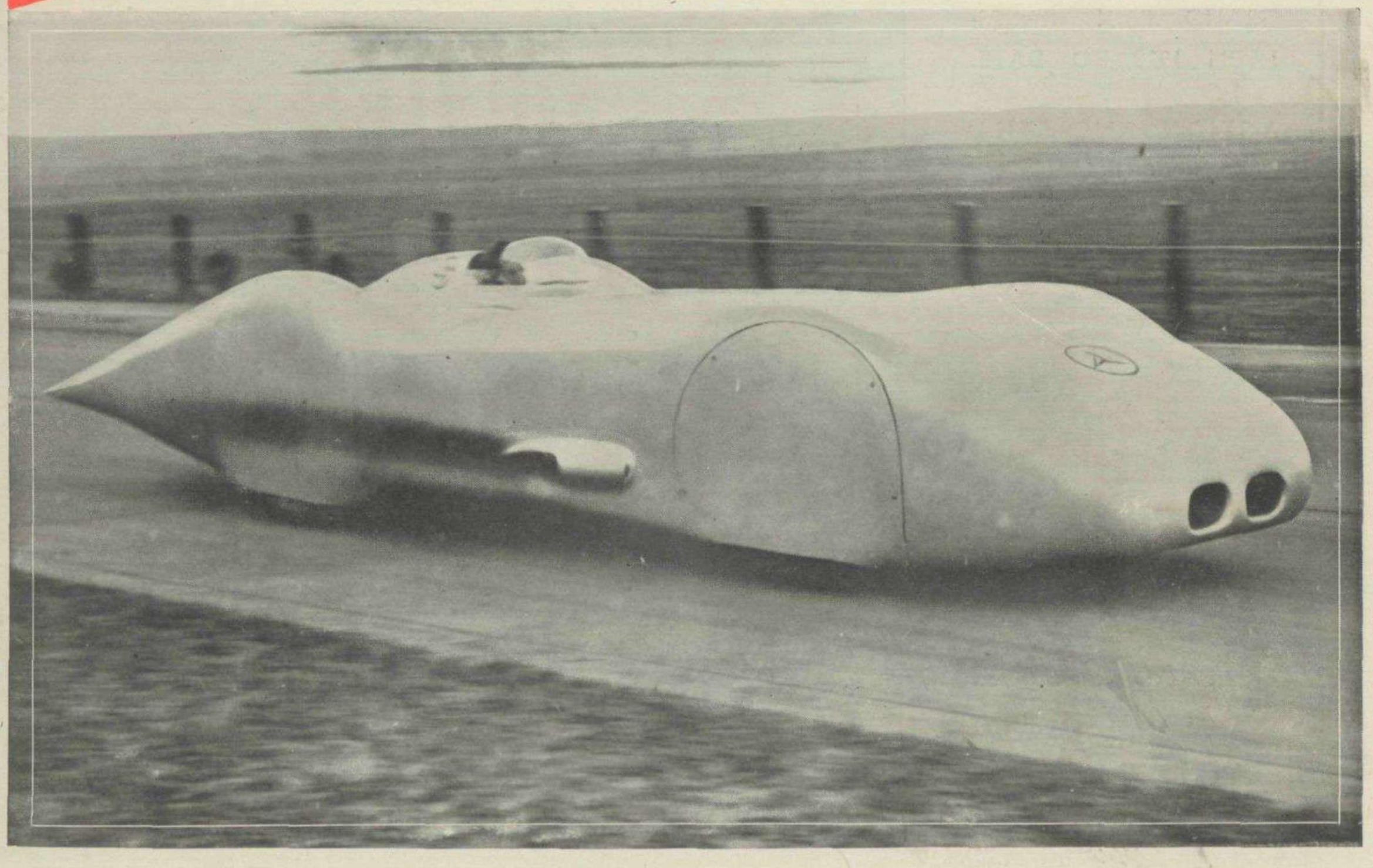
Vol. XIV. No. 3 **The Berlin Motor Show** *March, 1938*

MOTOR SPORT

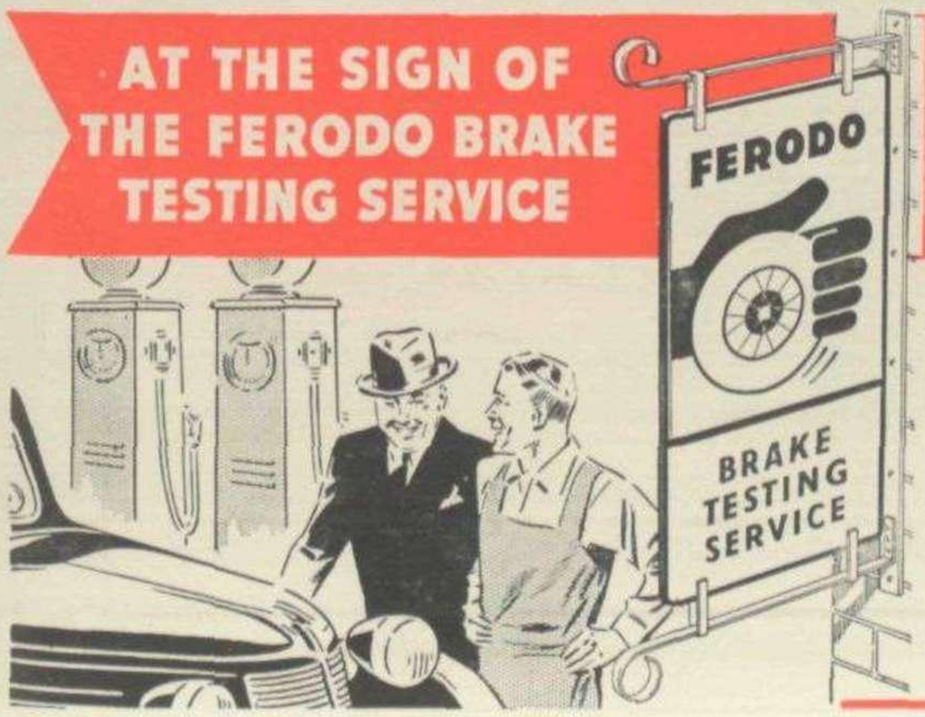
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SIXPENCE MONTHLY



Caracciola with the Mercedes-Benz breaking the record for the Flying Kilometre (Class B) at 266.09 m.p.h.

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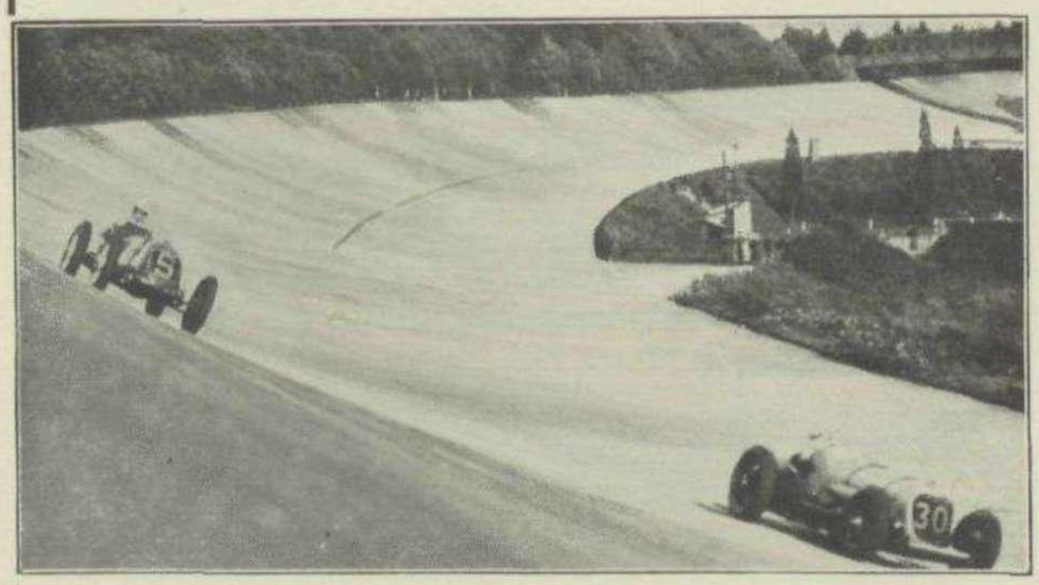
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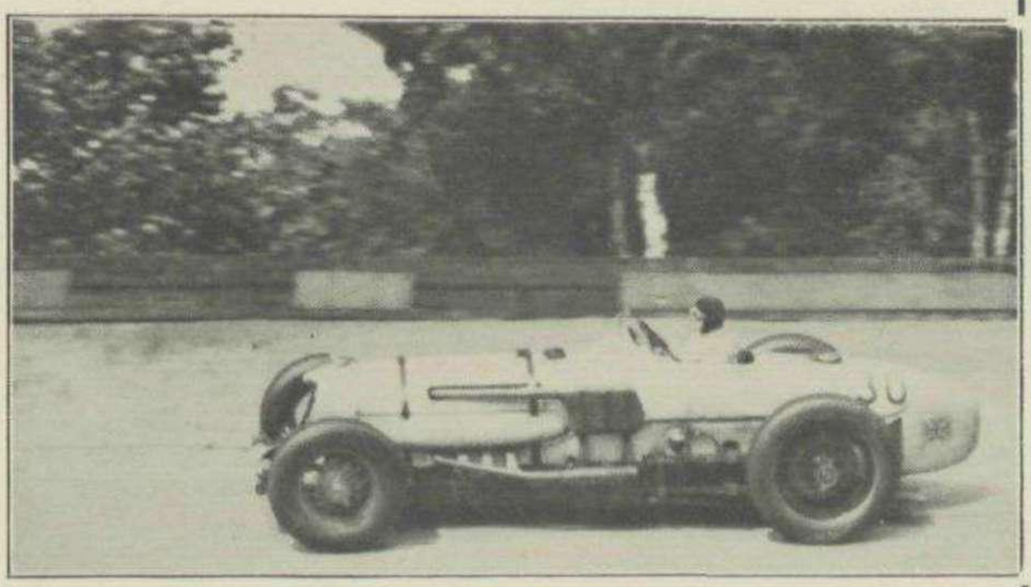
THE B.R.D.C.'s "500," 1937



E. W. W. Pacey (4½-litre Pacey-Hassan-Special) and "Bira" (Delahaye).

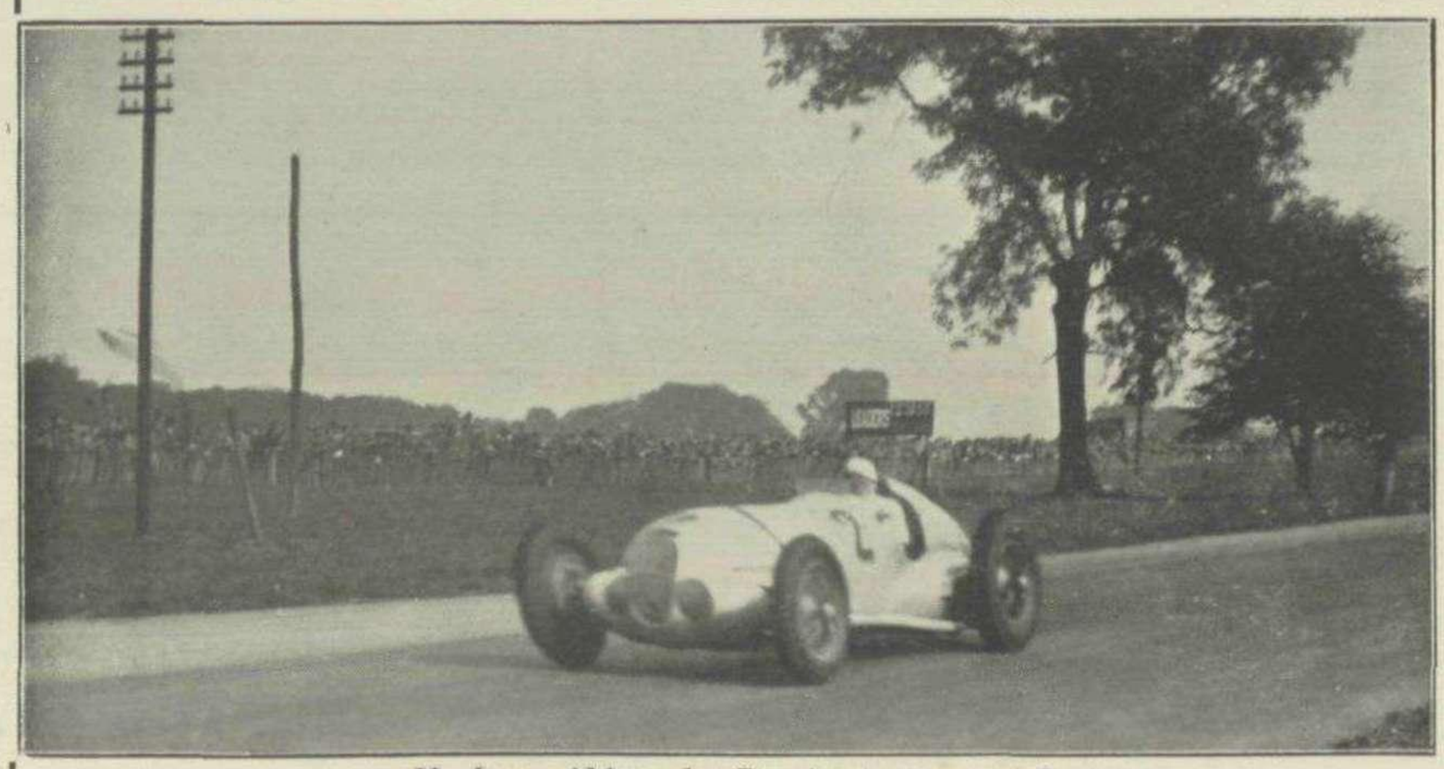


Cobb goes low to pass C. Paul.



John Cobb with the Napier-Railton.

THE DONINGTON GRAND PRIX, 1937



H. Lang (Mercedes-Benz) at 170 m.p.h.

★

ALL PHOTOGRAPHS OBTAINABLE IN THE FOLLOWING SIZES :—

8" x 6" - - 2/- each
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15" x 12" - - 7/6 ,,

(Cash with order)

MOTOR SPORT, 21 CITY ROAD, LONDON, E.C.1

READERS' SPARE PARTS FOR SALE AND WANTED

FOR SALE

16 h.p. A.C. (from the Barson Special), special crankshaft and rods, Martlett pistons, KE 965 valves, special large capacity sump (steel), large capacity high pressure oiling system. High lift camshaft, Watford racing magneto, 3 Amal carburetters, outside exhaust manifold, steel flywheel. Engine has done 105 m.p.h. on 3.6 to 1 top with 19×5.25 tyres.....

Akela 1,100 c.c. engine, crankshaft drive with four valves and two plugs per cylinder, bronze cylinder head, two M.L. magnetos and twin carburetters. Chassis specially made, being narrow in front, widening out at rear, for F.N. sprockets and chains. Fitted dropped tubular front axle, and Morris Minor front wheel brakes, hubs and wheels.....

Anzani engine, s.v., one rod and piston missing, cheap

Austin Ulster Special engine and gearbox. High lift cams, tulip valves, double springs, high compression head. Big end remetalled, new piston rings .....

Austin Seven, Zenith vertical carburetter, cylinder head gasket, new swivel pin bushes, 2 pair anti-roll springs.....

,, spring, front five leaf flat, all springs are clipped at every leaf.....

,, springs (2) rear 6 leaf flat, all springs are clipped at every leaf.....

,, Boyd Carpenter (1927) 2-seater, fitted with high compression pistons and Brooklands exhaust system. Body from windscreen backwards has been removed. Less plugs and dynamo, good tyres, brakes need relining, but engine perfect.....

,, 1928, open 4-seater, good hood and side screens, less radiator, dynamo and timing gear case cracked.....

,, chassis, lowered 3 ins. in front, underslung behind, fitted with o.h.v. 1,100 c.c. J.A.P. engine. Perfect condition. 20 in. sprung wheel, less back axle and gearbox. Complete with six wheels (engine complete with magneto and horizontal S.U. carburetters) .....

,, 1928 engine.....

,, 1933 engine, just rebored, new pistons, crankshaft, bearings, clutch plate, also new bearing in gearbox. New valves and double springs.....

O.M. o.h.v. 2-litre, one rod and piston missing, sump punctured, cheap.....

Axles, front and rear for Riley Nine.....

Austin body, 1927, four-seater, aluminium.....

Austin Seven : 1929 engine and gearbox. Magneto *ignition, engine, chassis, complete*.....

,, 3-speed gearbox, Austin special chassis frame.....

Amilcar 8.9 h.p. Type C.H.S. Not run in since being rebored, and fitted with special alloy pistons. Crankshaft reground. New valves, double springs. High lift camshaft. New bearings for crank and camshaft. New crown wheel and pinion and bearings in back axle. New tyres and battery. Magneto, starter and dynamo overhauled. Aluminium louvred bonnet. Body not completed. Several spares available to purchaser, willing to sell any part separately .....

,, G.P. front and rear axle.....

,, Various parts for Amilcar engines.....

,, (Nurburg model) .....

All Austin Spares, Inlet manifold, exhaust manifold, headlamps, petrol tank, cyl.-head, (polished), radiator, steering column, wheel, brakes, Autovac (unused) front axles, bucket seats, wheels (1929 type).....

A.C. Six cylinder head (approx. 1924) camshaft and crankshaft .....

Back Axle for 8.9 h.p. Amilcar G.P., complete with hubs, shafts, crown wheel and pinion, torque tube, prop. shaft, etc., dropped front axle beam.....

Bentley "B" type gearbox .....

,, All general spares.....

,, 3-litre spares .....

Bentley 3-litre crown wheel and pinion, ratio 3.5 to 1

,, Close ratio "A" type gearbox.....

Bluemel telescopic steering wheel (unused). Several clockwise Bosch dynamos with distributor (4-cyl.) unused. Back axle (complete with shafts, brakes, and drums).....

Bugatti Brescia engine. 1½-litre rebored, overhauled, fitted new pistons, bearings, etc., has two carburetters, starter, distributor and clutch.....

Bugatti, cylinder block, rebored and new pistons, also other engine parts.....

Four road wheels (knock on 21 × 4.50) .....

Camshafts and boxes, from Brescia Bugatti.....

Racing camshaft for s.v. Anzani and parts to convert timing from chain to gear drive .....

Carburetter, Wingfield racing set, with 2 Wingfield carburetters, mounted on a special twin induction manifold. Fits any 1934 to 1936 V8 30 h.p. Ford, without alteration .....

,, downdraught, suit Austin Seven.....

,, For Ford V8.....

,, Zenith triple diffused horizontal, 36 mm. bore .....

,, Model 36 H.K. Horizontal Flange. 2⅜" between centre of bolt holes. Right-hand float chamber.....

,, (Two) Zenith N type Horizontal 36 mm. top feed float chambers.....

,, 26 mm. H.Z. Zenith.....

,, 26 mm. triple diffused.....

,, R.A.G. suit Riley Nine.....

,, R.A.G. .....

,, Zenith .....

,, S.U. complete (three).....

,, Solex .....

,, *(New) racing 36 mm. Amal, with large assortment of spare jets and chokes*

Car Clock Electric 12 v., less glass.....

Car Radio Philco twin wave, 6 v. (adaptable 12 v.). Practically new .....

Chassis, Austin, complete new crown wheel and pinion, new king pins and bushes, front and rear springs flattened.....

Connecting Rods (tubular), Laystall for Austin Seven, size big ends 1¼".....

Cozette supercharger, No. 9 (clockwise) complete with drive suitable for s.v. Anzani engine...

Cylinder head with rocker gear for Riley Nine.....

Chassis special single seater, complete with central steering (Marles), transmission (4.5 to 1 solid back axle), four new tyres, brakes relined. Only used in one speed trial.....

,, only, Riley Nine, complete less body, 1929, nearly new tyres.....

Crankshaft, rear half of a two-piece Laystall, size of journals 1⅛".....

Dewardre, one vacuum cylinder. Recently used for assisting braking on a heavy 12 h.p. car, with operating rods and "trigger and motor" levers on a short cross-shaft in solid bearings, also half copper pipe line to manifold.....

Duogauge Cartherns (oil pressure) thermometer.....

Dynamo, 6 v., starter and battery.....

Roller Crankshaft and rods for s.v. Anzani .....

Engine : Austin, 1927, engine and gearbox, without magneto and dynamo.....

,, Blackburn V. Twin, 750 c.c. engine, all ready to fit to G.N. chassis. No magneto or carburetter.....

,, G.N. full o.h.v. push-rod, 1,100 c.c. with many spares. Low compression pistons, and one high compression piston. Special large roller main bearings, high lift cams, drilled oilways, etc., in bits. Fellows magneto and single Zenith carburetter...

,, 1,500 c.c. s.v. Anzani, complete with magneto, dynamo, and starting motor, overhauled and in very good condition. Cylinder liners are fitted.....

,, Austin, 1931, Ulster engine, complete with tulip valves, double springs, pressure fed crankshaft, good dynamo, coil ignition and gearbox. Less manifolds and carburetter.....

,, 1,100 c.c. o.h.v. Salmson, complete with clutch and gearbox.....

Zenith carburetter type 36 V.H., special exhaust system.....

,, Full Boulogne Anzani, 1926, H/C coppered head, and normal head. New pistons, crown and crankshaft. New main and big ends. New timing wheels, and springs, tappets and rollers. New starter ring. This engine holds the Anzani Cup for the fast Anzani engine .....

1,089 c.c. Riley engine, fitted special Ashby pattern magnesium electron pistons with rings. Comp. ratio 7.25 to 1, lightened flywheel, clutch, Duplex valve springs, twin S.U. carburetters and manifold. (No magneto, dynamo or starter). Suitable for a light chassis.....

,, 30/98 Vauxhall Engine, No. O.E. 245.....

,, 11.9 h.p. Morris Cowley engine, new piston rings, new S.U. carburetter, and H.C. gasket, Lucas magneto.....

Engine: 1923/4 Aston-Martin, side valve, engine (fixed head) special lightened con-rods, new pistons. (No flywheel, magneto or carburetter) .....

,, Talbot 10/23 h.p. engine and gearbox complete. Water pump, coil ignition.....

,, Two s.v. Anzani engines, good condition...

,, Ford V8 and gearbox.....

,, 16 h.p. A.C. engine, good general condition Overhauled, complete Scintilla magneto, clutch. Never run since overhaul.....

,, Riley 12 h.p. s.v. engine. Ricardo head—new valves and all bearings—dynamically balanced crankshaft, high lift camshaft. New oil pump, complete with magneto, dynamo and starter, all in excellent condition .....

,, from Babe Peugeot, has been overhauled, with radiator, believed to be 1912.....

Frazer-Nash, One E.N.V. rear axle 4' 0", track 34¼", spring centres, 14" diam. brakes, 42 Type Rudge-Whitworth hubs, unused .....

,, One E.N.V. Wilson preselector gearbox, Type 110. Ratios 3.5 to 1, 2.25 to 1, top direct reverse 3.5 to 1. Also bell housing to suit No. 5 S.A.E. Flange unused. Chassis frame with 40" rear springs, unused.....

,, Several twin port cy. heads suitable for Meadows 12 h.p. engine.....

,, Several cylinder blocks for various types of Anzani s.v. engine .....

One s.v. Anzani engine suitable for supercharging. Fitted with roller bearing crankshaft and 100 ton steel connecting rods.....

,, Several 710×90 Wire wheels (unused)

,, Several V type windscreens.....

,, Several spring spoke steering wheels, with centre boss to fit 1" diam. shaft

,, One Frazer-Nash 3/4-seater body, complete with windscreen and seats.....

,, Steering box.....

,, Four normal full length chains.....

,, Sprockets .....

,, 18" steering wheel.....

,, Powerplus 1½-litre engine. Special pistons and rods. 10 to 1 compression. Fittings for one or two carburetters. Complete with magneto

,, Front axles .....

,, Set of front axle clips.....

,, latest type 100 con back axle.....

,, Cylinder head and valves. Wheels. Differential, complete with pinion, steering box and wheel. Front axle and assembly (brakes, etc.). Prop. shaft. Crankshaft (reground). Clutch (complete).....

Boulogne type, front axle 3' 8", complete with hubs, brakes, clips, springs, plates and shockers.....

,, Back axle, unassembled but complete with springs, radius rods and hubs. Bevel box with four-speed shaft and reverse shaft with bearing housing.

,, Frame, complete with gear level and brake shafts. Boulogne type body, four wheels with tyres and tubes...

,, Fuel pump, electric, twin S.U. 12 v. (off Phantom III).....

Frazer-Nash-B.M.W. standard pattern steering wheel, good condition.....

Gearbox, M.G. Midget, 3-speed, with Derrington remote control .....

G.N. roller bearing o.h.v. engine, H.C. pistons .....

,, Bosch magneto .....

,, transmission complete, and back axle.....

,, parts, cylinder barrels, heads, con-rods, timing-case and cover. Gauge, 14" dial blower.....

,, twin cylinder o.h.v. push-rod engine .....

,, chassis, equipped with high compression Morris Cowley engine and specially tuned. Would sell separately .....

,, Gearbox, four-speed, off 1934 Wolseley Hornet...

,, Front axle, steering box, wheels, countershafts, radius rods and sprockets.....

,, Engine 90° V twin, 1,100 c.c. Two plugs per cylinder. Push-rod o.h.v., not quite complete .....

Hartford shock absorbers.....

J.A.P. engine and chain drive.....

Lea-Francis, 1929 12/40. Complete set of gears, two axle shafts, differential with crown and pinion, clutch plate, lined, steering box, complete with wheel and controls, front brake drums, road springs, front and rear.....

,, 1930. 12/40 engine, back axle assembly, and four wheels.....

SECONDHAND SPARE PARTS—continued

Lea-Francis 1930 hyper model (parts available), rebored cylinder block, pistons (30 thou.), new con-rods and big-ends, cylinder head and valves. Wheels. Differential, complete with pinion steering box and wheel. Front axle and assembly (brakes, etc.). Prop. shaft. Crankshaft (reground). Clutch (complete) .....
Lucas P100 headlamps, single reversed bulb type. Chromium and reflectors in good condition...
M.G. J.R. Racing, crankshaft (only used in one short race) crankshaft (used for two seasons), cylinder head complete with valve gear, etc. Three connecting rods, piston, front main bearing housing, one rear bed housing, dynamo, starter, flywheel, sump, valve cover, water pump (complete), distributor (complete), set of front timing gears, induction pipe, exhaust manifold, water manifold, B. R. 12 coil, set of clutch plates, oil filler body, and various oil pipes, all these parts can be sold separately.....
M.G. J2 1933. Four wheel caps (knock-on), one spare wheel carrier, one rear axle assembly (complete), two rear springs, one front spring, two front hubs, one gearbox (without remote control casting), one speedometer and rev. counter (without drive), one oil gauge, cut out and fuse box, one prop. shaft (complete), two bucket seats, one set (four) shock-absorbers, one N/S front mudguard (cycle-type) .....
M.G. J.2 brakes and cables, the set.....
,, Marles steering gear complete, spring wheel, needs two hemispheres.....
,, Set bottom timing wheels.....
,, Set (four) front hub bearings, new.....
,, Rear main flange S/H.....
,, Set Aerolite pistons +10 S/H.....
,, 3 only Aerolite pistons +20 S/H.....
,, (Two) con rods (floating gudgeons) S/H.....
,, P. flywheel (lightened) as new.....
M.G. K3 Racing Magnette, spare crown wheel and pinion, crown wheel 44 teeth, pinion 9, new.....
M.G. O.H.V. 8 h.p. 1929 "M" Type. Engine complete with 2 carburetters, dynamo, starter, etc. Clutch and 3-speed gearbox (engine just fitted new main bearings and new pistons. Linered) .....
,, Four wheels, all true .....
,, Steering column, complete with gearbox and spring wheel Front axle, complete with hubs, brakes and track rods.....
Magneto, Scintilla, for Ford V8.....
Morgan rear wheel, sprockets, two-speed bevel box, chains, propeller shaft.....
,, bevel shaft, specially made in high tensile steel, almost guaranteed not to bend. Fit model about 1927.....
Morris 11.9 engine, rebored, all new bearings new valves .....
Morris Minor front axle.....
Meadows single port heads.....
,, crankcase .....
,, sump .....
,, crankshaft with cone clutch.....
,, close ratio gearbox, complete with clutch casing .....
,, engine, complete 12 h.p. single carburetter (Solex), rebored and sleeved, Lucas magneto, dynamo starter in good condition. Small wear in bores, good oil pressure.....
,, 12 h.p. complete blower, with roller bearing crank (No. 8 Cozette blower).....
New Zenith horizontal carburetter for 12 h.p.....
Norton motor-cycle, 1928 model 18, one new racing Hoffmann big end assembly complete, two used racing cams, one pair used racing roller cam—followers.....
Pistons, two new H.C. alloy.....
Petrol gauge .....
Petrol tank from M.G. Midget.....
Radiator, Morris beehive.....
Rev. Counter, New 5" Rolls-Bentley with 15-jewel 8-day clock.....
Rotex 8 in. dia. headlamps, chrome rimmed and fitted with chromium plated stone guards. Both lamps fitted Solenoid dippers.....
Scintilla Vertex, four-cylinder.....
Saloon, Arrol Aster six-cylinder coachbuilt 1929, or parts .....
Salmson 3-speed gearbox.....
,, Solid back axle.....
,, Front axle .....
,, Transmission .....
,, Flywheel .....
,, Cylinder head.....
,, Wheels .....
,, Steering .....
,, Sump .....
,, Twin overhead camshaft.....
,, steering and universal, also reverse pinion...
Seat covers and cushions.....
Silencer, *Brooklands, large, suitable Bentley,* unused
Singer "Junior" tourer, good condition. No back axle. Chassis suitable for a "special" .....
Smith 5" rev. counter, new .....
,, ,, speedometer, 100 m.p.h. two.....
Speedometer, Smith's A type .....
Spotlight, new Stadium with mirror.....
Springs, special flattened rear, for Austin.....
Spring Steering Wheel, Ashby, as new, from 1934 Le Mans Aston-Martin.....
,, ,, Ashby, as new, from Railton 1934, Series II.....
Standard Big 9 1929 engine, clutch and gearbox, absolutely complete, but sump is damaged .....
Steering Gear, less wheel.....
Supercharger, Marshall new, complete with all fittings, suitable for Ford Eight or Ten .....
Centric supercharger and fittings for Ford Ten.....
,, Marshall, complete with fittings for Ford Eight or Ten. Only run 4,000 miles.....
,, Marshall, installation complete with gauge, etc., off N type M.G. Magnette. Original cost £40.....
,, Centric, from standard Austin Seven, complete with cylinder head bracket, makeshift induction pipe and self starting Solex carburetter, also 3 different diameters of blower pulleys, and one gallon oil tank for dashboard fitting.....
Tyre, new, for Renault (13×45).....
Tyres, competition, Invicta tread, used once on Lancia Lambda, 780×150.....
Valves, set of K.E. for s.v. Anzani and sundry parts
30/98 Vauxhall, o.h.v. model, parts available.....
,, ,, cylinder block.....
,, ,, ,, head .....
,, ,, sump.....
,, ,, crankshaft .....
,, ,, gearbox.....
,, ,, front axle (complete) ...
,, ,, con-rods .....
,, ,, starter motor, overhauled .....
,, ,, dynamo (1924 type) ...
,, ,, *magneto* .....
,, ,, water pump (overhauled) .....
,, ,, carburetter overhauled
,, ,, flywheel (teeth bad) ...
,, ,, wheels, 820/120 .....
,, ,, valves .....
,, ,, ,, springs, the set
,, ,, pistons .....
,, ,, Velox 4-seater body.....
,, ,, steering-box .....
Vernon-Derby chassis (late) solid back axle, front axle, steering gear with spring wheel, front axle with brake assembly. Prop. shaft and four wheels with good tyres.....
Wheels, racing, one set, 42 mm.....
,, 2 from M type M.G. 29-32 .....
Windscreen with triplex for M.G. Midget M. type.....
Wings, pair of cycle.....
Zeiss head lamps, new.....

WANTED

Aero-Screens, 10×6", safety glass, folding.....
Amilcar, 9 h.p. differential (one from the saloon model but not from the sports two-seater, except the six-cylinder) .....
Austin Spares: Starter .....
Batteries .....
Carburetters .....
Dynamos .....
Petrol Tanks .....
Fold Flat Windscreen .....
Front and Rear axles .....
Pair of doors (suit sports model).....
Bucket seats .....
Pair of new Cycle-type Mudguards...
Headlamps.....
Wheels .....
Austin, Ulster: Dropped front axle .....
Aero screen.....
Manifold .....
Remote control gear.....
Racing magneto.....
Downdraught carburetter .....
Ulster body, any condition .....
1928 gearbox, three-speed, extra large wheels for Austin Seven.....
Alvis "blower" front drive, chassis, engine and drive .....
Bentley Speed Six Induction manifold and twin carburetter assembly, also quick lift camshaft.....
Body, lightweight, suitable for 1932 M.G. Midget.....
Bugatti, modified Brescia. Cylinder block, valves in good condition, camshaft, with pulley drive for dynamo, oil pump, and 1 or 2 *con-rods* .....
Carburetters, two semi-downdraught, standard, for 1933, J4, Midget.....
Engine, Lagonda, 2-litre supercharged.....
Exhaust Pipes, external.....
Fold Flat windscreen. Width 2′ 10″, height 6½″ at centre, chromium plated.....
Frazer-Nash front axle, suitable for Boulogne model, chains and sprockets .....
,, Outside exhaust manifold and piping for fitting to Meadows engine (three port) .....
,, T.T. *replica body* rear petrol tank, or similar two-seater complete.....
,, Stub axles, hub and brake gear.....
Gearbox, light, for special chassis.....
,, 14 h.p. Armstrong Siddeley self-change (pre-selector).....
Headlamps. Fitted dipping reflectors, chromium plated, diam. of front 8″.....
Louvred Aluminium bonnet, 2′ 3″, rear 2′ 3″, front 18″ wide .....
Manifold and Sump for M type Midget.....
Valve Cover for J.2 type Midget.....
M.G. set of brakes.....
M.G. Midget, C type cylinder head complete with camshaft and vertical drive.....
Fold Flat windscreen for M.G. and Frazer-Nash.....
M.G. J.2 oil and radiator thermometer (dash-board type) and Tapley motor.....
Petrol Pump, 6 volt, windscreen wiper 6 volt electric
Seats, bucket type.....
M.G. J.2. brake handle with ratchet complete.....
Any J Type four-speed gearbox.....
Spring wheels.....
Type 37 1½-litre G.P. block (Bugatti).....
Gearbox, 4-speed, for a 1930 O.H.C. Morris Minor.....
Cylinder head, complete with valves and rockers for a blown Lea-Francis (roller-bearing crankshaft) .....
6-volt Battery, for motor cycle (Exide).....
,, for car (Exide).....
Boyd-Carpenter body, any condition.....
Brooklands Riley Engine .....
,, Series ,, with high lift cams and two carburetters .....
Lea-Francis hyper sports engine, fitted with needle bearing, connecting rods and No. 9 blower .....
Supercharger for Austin Seven.....
Sturmey-Archer gearbox for Dunelt 250 c.c.....
Instruction Book for M.G. Midget, 1930.....
,, for 3-litre Bentley.....
Particularly Required Rudge Spline hubs T47D.....
Two twin port Meadows, 12 h.p. heads.....
Four con-rods steel, suitable for Meadows engine, Crown wheel and pinion. 10×47.....
Wire Wheels, 16. 6.00 for Ford V8.....
Salmson. *One hub puller and one cable adapter* as used on the front end of the rear brake cables to attach to the levers on the foot brake camshaft. Suitable for a 1928 9.5 h.p. Salmson.....

THESE ARE GENUINE OFFERS. IF YOU ARE REQUIRING ONE OF THE ARTICLES MENTIONED ABOVE, WRITE AND ASK US. WE WILL COMPLETE THE TRANSACTION.

Apply to: Box M/S 20, c/o Motor Sport, 21, City Road, London, E.C.1

VOL. XIV. No. 3 MARCH, 1938 PRICE SIXPENCE

SUBSCRIPTION RATE 7/6 PER ANN. POST PAID

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HUSTLING TO THE COTSWOLDS

A FIAT BALILLA SALOON PROVES ITS WORTH ON A QUICK TRIP TO INSPECT THE PRESCOTT HILL-CLIMB SITE

A GLORIOUS March day coinciding with the pressing thought that so far we had not seen the much talked-of Prescott Hill-Climb site of the Bugatti Owners' Club, led to a Fiat Balilla pillarless saloon being headed westwards on what had, perforce, to be a distinctly hurried trip.

Under the circumstances we decided to log the average, and for the purpose used a stop-watch, known to be accurate, wherewith to check the mileage covered each half-hour.

Continental cars, even of utility type, invariably handle like *sportswagens*, and this Fiat was no exception, so that, although the driver was entirely strange to the car, in the first half-hour, starting from Hanger Hill, Western Avenue, we covered 21.8 miles (43.6 m.p.h.), in spite of being delayed on entering Uxbridge by narrow streets and slow-moving traffic and having to wait some 3 mins. at the police traffic signal by the one-way section over Uxbridge bridge, which is under repair. Thereafter the Fiat got into its stride very easily and cruised effortlessly at 70 on the speedometer (about 64 m.p.h.), going up to a maximum of 76 (probably 67 to 68 m.p.h.) on a down-hill stretch. The next half-hour saw us into the long built-up area of High Wycombe, which dropped the average to 20.8 miles (41.6 m.p.h.). We crested Denham Hill at 52 m.p.h. on the speedometer after a check for traffic just before the foot. The next half-hour disposed of 24 miles (48 m.p.h.) and thereafter the roads became winding and a local hunt afield called for care. We were now beyond Stow-on-the-Wold, having taken the Oxford Northern By-Pass, and we ran through Burford and down the winding Stanway Hill to approach Prescott, collecting another 23.5 miles (47.0 m.p.h.) during the final half-hour. The overall two-hour average was thus 45.05 m.p.h. This was by no means an entirely mad flat-out "dice," and all built-up areas were observed. N.B.—This average was checked not only by stop-watch but the mileage was checked by a mile-measurer and large scale map. Inaccuracies of speedometer mileage alone accounted for an error of 7.8 miles in 90 miles, giving an error of 48.9 m.p.h. against 45 for the speed. It is easy to see how inaccuracies occur, relying on dashboard clocks and milometers! We could only express profound respect for this £9 tax £198 saloon motor-car, which outwardly looks a big ultra-modern vehicle, yet which is pleasantly compact to handle. Eating a frugal sandwich in a Gloucestershire By-Lane we reflected on the car's qualities, as emphasised by our fast journey down.



The drop away bonnet on the Fiat Balilla Saloon.

Visibility is quite exceptional, owing to the drop-away bonnet, though the forward pillars, taking the full load of the doors, are a trifle wide and the near-side wing is just invisible. The separate front seats are very comfortable, perhaps a shade "baggy" for rapid cornering, but giving a most business-like driving position, to which the well-placed steering column contributes. The gear-lever, centrally mounted, is short, very rigid and easy to reach. The synchromesh for top and third must not be hurried, and the lever has an unexpectedly short travel and is stiff to move, but double-declutch changes go through excellently.

The indirect gears are not over-noisy. There seemed some play in the transmission and the rear axle juddered on the get-away

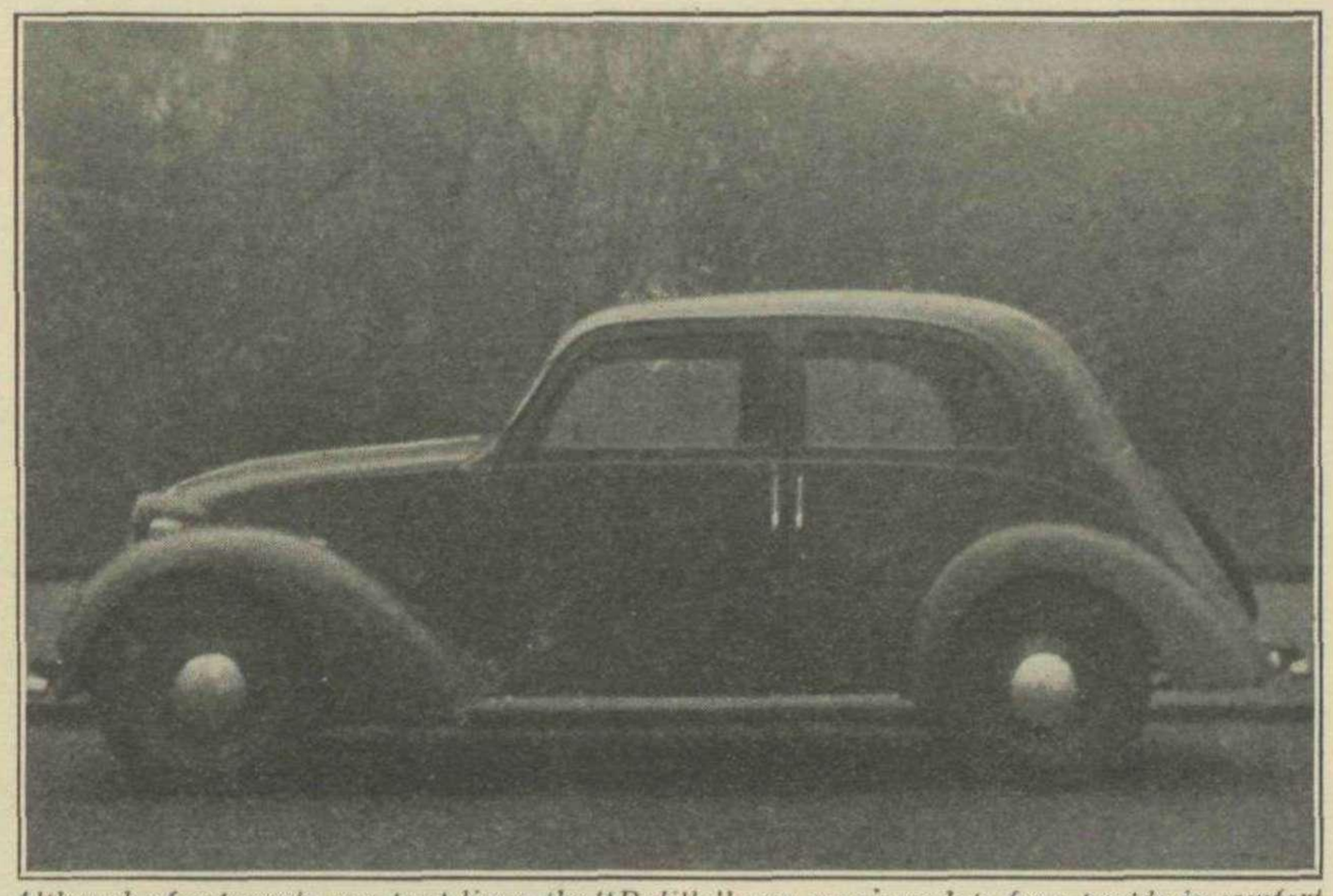
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FIAT BALILLA SALOON—continued

and when accelerating hard uphill on the low ratios. The clutch is very light, positive in take-up and fairly decisive, with some lost motion on the pedal. The pedal movement is not excessive. The right hand accelerator is light and well placed, away from the brake pedal. The hydraulic brakes are truly admirable and give complete confidence, needing a light, steady pressure, giving progressive braking and being quite silent in action. At first they seemed to pull a little to the near side, but later gave a very powerful all-square stop on a very loose downhill surface. The central hand-lever, rather masked for starting by the gear-lever, worked stiffly, but was nicely placed and had a fairly effective push-button ratchet. As adjusted it was quite ineffective for holding the car on a gradient.

We have come to expect admirable road-holding from Continentals, and at first the Balilla Fiat rather disappointed in this respect, for, while it was far ahead of the majority of utility vehicles, it rolled excessively at low speeds, allied to which the Airflex Perelli covers made themselves extremely audible. However, over a private road we later found that this tail-sliding could be adequately controlled at very high speeds, and if the tail movements occasionally gave over-correction, we forgave the Fiat this tendency, for it really steered admirably on ordinary road-motoring. Possibly shock-absorber or tyre-pressure adjustment would stiffen things up. The steering asked 3⅓ times, lock to lock, but felt



Although of extremely compact lines, the "Balilla" can accommodate four people in comfort



A very neat car. The lines of the Fiat can be gauged by this three-quarter rear view.

" quick," probably because it is light and smooth and had full and rapid castor action. It is very passably accurate, although the wheel movement cannot be " felt." There is no column movement, and only slight tremors reach the wheel over bad surfaces, while the lock is very good. Undoubtedly the big tyres make " feel " impossible, but we would recommend slightly higher gearing. Generally, the suspension is of a very high standard, particularly at speed. Pitching and road-shock are well damped and over bad surfaces the valve of independent front springing is very evident, but the softness of the springs allowed a fair amount of movement in the back of the car when travelling quickly on undulating main roads. Off the beaten track the springing gave an excellent combination of control and shock-absorption. The front of the car remains rigid and the front wheels stay put admirably during ultra-rapid cornering.

The engine runs comfortably up to speedometer speeds of 30 m.p.h. in second and 50 m.p.h. in third, when it appears to peak and emit a power-roar, though we pushed things up to 16 on first, 38 on second and 54 to 55 m.p.h. on third when really trying. The engine is very smooth, unobtrusive at cruising gaits of about 55 to 65 m.p.h. actual, and devoid of flat-spots, but it is inclined to stall after starting unless the throttle is " blipped," and it wobbles alarmingly on its flexible mounting when crawling in top or idling. The tick-over, as set, corresponded to about 6 to 7 m.p.h. in top, which would appear to be the minimum. Starting in second is normal and third is a most useful ratio for hill-storming (main road) or acceleration, as in top there is little performance from the small push-rod o.h.v. engine below 25 m.p.h. The body possesses some creaks and the passenger, retiring into the rear seat for purposes of photography, reported considerable panel-drumming. Ventilation is good, there being a big scuttle ventilator operated by a sorbo-handled grip, but the interior steams up with all windows shut.

Leaving a detailed study of minor points until later, we went to see Prescott hill. We must just digress to say how very beautiful Prescott House looked in the afternoon sunshine, the light-grey stone blending with the moss-grown gravel forecourt and deep green of the yew-hedges. The interior oak beams and panelling and the views over to the Malvern Hills from the long windows kept our picture-maker busy, nor did the sleek blue Balilla do anything but enhance the exterior views. The hill itself is truly intriguing. From the start one negotiates a slight left-hand sweep, hidden from view by the banks until the car is into it. Then comes a right-hand bend that appears very tricky but can actually be taken fast. A rise follows to a banked left hairpin that will need a lot of learning, and is rendered exciting as there is a sheer drop on the outside (probably safety fencing will be essential here). Then comes a considerable straight followed by a left bend that looks nasty but which could be taken " flat " in second in the Fiat at about

Continued on page 117

ALLARD-SPECIALS TRIUMPHANT

ONLY TWO CLEAN PERFORMANCES IN THE COLMORE TROPHY RACE

GUY WARBURTON, driving an eight-cylinder Allard-Special, won the Colmore Trophy in the annual event held on February 26th, in the Cotswold hills. Allard-Specials, the latest in trials machines, scored a striking success, for S. H. Allard himself, designer of the cars, was the only other competitor besides Warburton to lose no marks, and Allard-Specials figured prominently in winning both the team prizes.

The event was organised by the Sutton Coldfield and North Birmingham A.C., and if all trials were as well run, there would be no need for any popular clamour to reform this branch of the sport. A. H. Langley, the Clerk of the Course, deserves every congratulation. The double-circuit system was used, with a variation from that originated on the Inter-'Varsity Trial, for competitors started off in threes on alternate circuits. This enabled members of teams to start together, and run in company throughout the trial.

A drizzling rain fell at intervals during the day, and most of the hills, neither really wet nor dry, were in their most difficult condition. Competition tyres and solid axles were both allowed, but even so wheel grip was never easy. Two of the worst hills were on private land, and were used by permission of the owners. In spite of the large number of failures, there was never more than ten minutes delay at any point, and the trial finished exactly on schedule—a remarkable feat in an event of such severity.

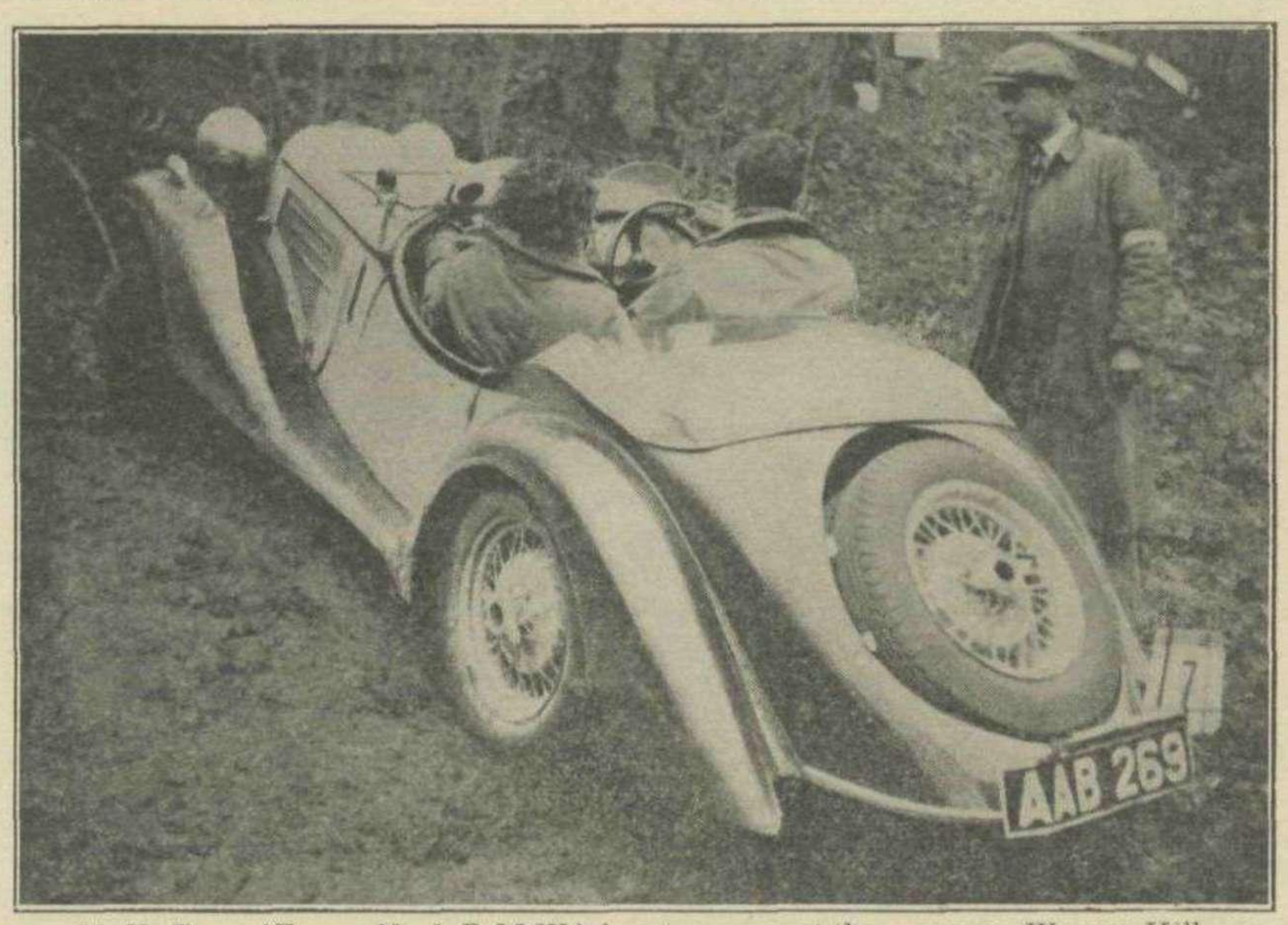
Warren Hill, which caused the greatest number of failures, was new to car events, though it has been used for some years in the motor cycle Colmore Cup trial. Competitors approached along a muddy track, which itself was difficult going, and was marked as a provisional observed section on the route card. In view of the extreme difficulties which followed, however, a free passage was allowed on the approach.

The hill itself had a sharp right-hand turn, on a slanting, muddy surface. If competitors came up too fast, their front wheels, refusing to answer to the steering, merely slid straight ahead, and they finish-up in the bank. If they turned the wheels early, they had to mount the steepest portion of the corner. The correct tactics were to approach quite slowly, and in the middle of the corner to lock over and give the engine full power, in order to swing the tail round.

The first section ended just round the corner, but only twelve competitors, out of eighty entries, reached this point. Curiously enough, six were successful in the morning, and a similar number in the afternoon. However, in the morning only one driver managed to keep going after the corner. This was T. H. Cole, driving a supercharged Austin Seven, a fine effort when so many other doughty drivers were beaten by wheelspin.

In the afternoon the first of the Allards to tackle the corner was K. N. Hutchison's twelve-cylinder Zephyr-engined machine. He got past the first section, turning on all the power, so that the trees for yards round were plastered with flying mud. Then, unexpectedly, wheelspin brought him to a stop. He restarted with slight assistance, and charged up the rest of the section in a most impressive manner.

It seemed possible that Hutchison's immensely powerful car had shifted so much mud that for a time it had made the corner easier, for Allard himself kept going in fine style, and cleared both sections. Then came Warburton, whose throttle control was beyond praise. He was the only driver who really made the difficult manœuvre look easy. The next car, L. G. Johnson's Frazer-Nash-B.M.W., also nearly succeeded on the second section, but at last he stopped, and there were no more successes for the whole hill throughout the day.



H. V. Terry (Fraser-Nash-B.M.W.) has to reverse at the corner on Warren Hill.

As regards the bottom section, however, several made valiant efforts, notably J. M. Toulmin with one of the new "Cracker" M.G.s, which have the 1½-litre engine in the T-series chassis. P. S. Flower with his M.G. also came near success for both sections, and a really determined corner by E. Lloyd-Jones with his old T.T.-type supercharged Lea-Francis just got him to the end of the first section.

G. H. Beetson took the corner skilfully, but found his Riley on the steep part on the inside, so that he failed. J. Terras, with a blown "PB" M.G., displayed much enterprise, and got well into the second section. H. I. Wilkes, having stopped on the corner, had to reverse to take the slip-road, and a stone was rammed up the exhaust. The obstruction was loosened with a screw-driver, and at last was shot out by the engine with great *eclat*.

Ten marks were lost by failure on the first section, but only five if a car cleared the corner and stopped higher up, an admirable arrangement. Those successful on the lower part were:—

T. H. Cole (Austin), G. Warburton and S. H. Allard (Allard Specials), **both sections**: K. N. Hutchison (Allard Special); C. D. Buckley, W. S. Sewell (Austins); J. A. Bastock, E. J. Haesendonck, P. S. Flower, J. M. Toulmin, J. Terras (M.G.s); L. G. Johnson (Frazer-Nash-B.M.W.).

Warren Hill was one of those on private land, and the owner had even gone so far as to remove one of his fences to make a way out for competitors. The other private hill was Leckhampton, but this was easier than usual, and about thirty cars were successful. Notably fast climbs were made by the other M.G. team, the Musketeers, comprising R. A. Macdermid, J. A. Bastock, and A. B. Langley. The system that fewer marks should be lost by a car that nearly reached the top, compared with one that failed in the mud at the bottom, was again used. In this way T. L. McDonald gained some reward for a good effort with his Singer, as he did not stop till within a few yards of the summit.

The next most difficult hill to Warren was Juniper, on the other circuit. Juniper is never to be despised, but it was not expected to cause so many failures. Only fourteen drivers made clean climbs, and whereas the Cracker M.G.s of J. M. Toulmin, H. K. Crawford, and J. E. S. Jones were successful, all three of the Musketeers stopped. A notable success was that of the Austin "Grasshopper" team, driven by W. H. Scriven, C. D. Buckley, and W. S. Sewell, thus repeating a good performance by this make on Juniper in the Gloucester trial. W. H. Depper's Austin also made the climb, but T. H. Cole, the hero of Warren, spoilt his clean sheet.

All three of the Allards were sucessful, though F. D. Gilson's "independent" Allard stopped, and Flower made another good climb with his M.G. The remaining

THE COLMORE TROPHY TRIAL—continued

successes at Juniper were made by M. S. Soames (Ford V8), W. J. Green (M.G.), and H. G. Symmons (L.M.B. Special). This left only seven who had climbed Juniper and the first section of Warren, and only two with a 100 per cent. performance (Warburton and Allard).

Nailsworth Ladder was another hill to cause an unexpected number of failures. It was in rough condition, and 60 per cent. of the entry came to grief, including, surprisingly enough, J. A. Bastock with his M.G. It will be remembered that Warburton, after a fine performance in the "Gloucester," unexpectedly stopped at Nailsworth, and he must have heaved a sigh of relief when he topped it successfully.

It was in the special test at Guiting, where competitors had to reverse at a cross-roads, and stop after crossing the finishing line, that Warburton nearly lost the Colmore Trophy. He forgot to stop, and went on much too far amid frantic shouts! No marks were lost here, but the times, added to those at the Lypiatt test, were to decide any ties. However, his only rival, S. H. Allard, made the opposite error through stopping much too soon, and having to restart to cross the line. By a strange coincidence, both these diverse tactics resulted in exactly the same time, 23 secs. At Lypiatt Warburton took 12⅕ secs., and Allard 12 secs., and the former therefore won the Trophy.

There were four special tests in all. At Lypiatt A. B. Langley, approaching the scene of operations, ran into the ditch, and his car had to be lifted out. Best times were those of J. A. Bastock (M.G.), 11⅗ secs., A. B. Langley (M.G.), 12 secs., and K. N. Hutchison and G. Warburton (Allard-Specials), 12⅕ secs.

At the Guiting test, D. E. Harris (M.G.) took 19⅕ secs., K. N. Hutchison (Allard), 19⅗ secs., and L. G. Johnson (Frazer-Nash-B.M.W.), 19⅘ secs.

At Gypsy Hill, on the reverse side of Gypsy Lane, H. K. Crawford and W. J. Green, both with M.G.s, tied with 5⅗ secs., and six other drivers took 5⅘ secs. Here a distance of about 30 yards, including a bend, had to be covered in a maximum of 7 secs.

On Stancombe there was a timed climb, and G. Warburton (Allard) excelled with 14⅗ secs. C. D. Buckley (Austin) took 15⅕ secs., and N. V. Terry (Frazer-Nash-B.M.W.) 15⅗ secs.

RESULTS

Colmore Trophy : G. Warburton (Allard Special).
Club Team Trophy : Ford Enthusiasts' Club. K. N. Hutchison, S. H. Allard (Allard Specials), M. S. Soames (Ford V8).
Committee Team Prize : Tail Waggers Club. K. N. Hutchison, S. H. Allard, G. Warburton (Allard Specials).
Sneli Cup : C. D. Buckley (Austin), 5 marks lost.
Rhode Cup : W. J. Green (M.G.), 10 marks lost.
Bernard Norris Cup : S. H. Allard (Allard Special).
Cream Crackers Award : H. G. Symmons (L.M.B.), 10 marks lost.
Trial to Trial Trophy : E. Lloyd-Jones (Lea-Francis), 16 marks lost.

Class Awards :

750 c.c. : W. H. Scriven (Austin), 10 marks lost.
1,100 c.c. : P. S. Flower (M.G.), 12 marks lost.
1,500 c.c. : E. Lloyd-Jones (Lea-Francis), 16 marks lost.
2,000 c.c. : J. M. Toulmin (M.G.), 5 marks lost.
Over 2,000 c.c. : K. N. Hutchison (Allard Special), 6 marks lost.
No first-class awards :
Second-class awards : M. S. Soames (Ford), T. H. Cole (Austin), H. K. Crawford (M.G.), J. E. S. Jones (M.G.), 10 marks lost.

Enthusiasm in America

Just over a year ago we published some notes and a photograph on an O.E. 30/98 Vauxhall owned by Robert Lissick Heller of New York, who had written for particulars of the Vintage S.C.C., which he subsequently joined. Now comes news of another O.E. 30/98 which has a home in the U.S.A. It is owned by Dean A. Fales of Cambridge, Mass., where he is Associate Professor of Automotive Engineering at the Massachusetts Institute of Technology. The car has run less than 10,000 miles, being kept in the best possible condition and used occasionally just for the love of handling a real motor car. The same enthusiast also owns a closed Renault "45," which he describes as "such a grand old car that I cannot let it be broken up for junk." We only wish more historic sports-cars were guarded by similar enthusiasm from a last journey to the breaker's yard.

An Ambitious Sports-Car Race

The Light Car Club has now revealed the nature of its race at Brooklands scheduled for July 16th. Following sprint races down the finishing straight during the morning, similar to those put on by the B.A.R.C. at an opening meeting some years ago when frost and floods closed the outer-circuit, there will be a 250 mile Sports-Car Race over the full Campbell Road Circuit—we believe the only long-distance race that will be run over this circuit this year. It has yet to be decided whether the race will be confined to 1½-litre cars or be open to all sizes of *sportswagens* But apparently it will be a scratch event, divided into capacity classes, like last year's 12-Hour Sports-Car Race at Donington, probably with an outright prize for the fastest car. Very strict steps will be taken to ensure that only standard production cars compete. If this does not scare away manufacturers a magnificently instructive event should result, and we imagine that M.G., Austin, H.R.G., and Delahaye would be amongst the "works" or "semi-works" entries, with a possibility of further Continental support. To the argument that no sane private owner would risk the consequence of driving his car through such a long race there is the answer that many did so in the 12-Hour Race at Donington last year which was put on experimentally at short notice. This race should fill a gap which has existed since the demise of the Essex M.C. and B.A.R.C. Six-Hours Races and the earlier J.C.C. sporting-car races, and by reason of the sterner circuit and greater insistence on standard cars, should be considerably more important.

The Brooke Special

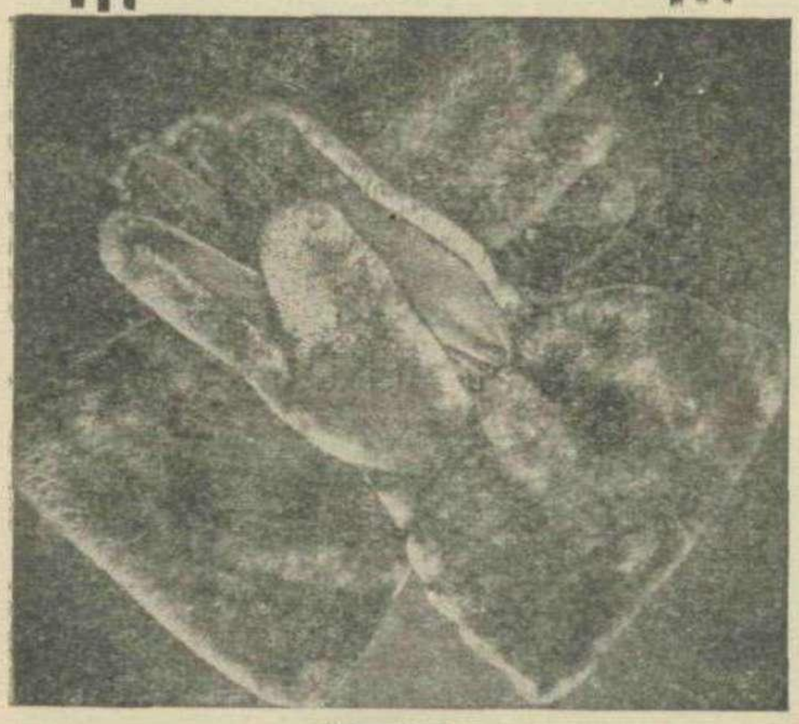
Last season H. L. Brooke, of Coventry, competed very regularly in the more important races without much success, with a rather crude-looking M.G. Riley. Apparently he regarded last season as an era of experimentation, and his car will appear in greatly improved form this year. A Daimler independent-suspension unit, liberally drilled to reduce weight, has been welded to the front of the frame. Weaker coil springs than those standardised have been fitted, and hydraulic dampers are mounted above the assembly, which now weighs little more than the original axle. The steering gear, rear axle and brakes and chassis generally are Riley Imp, with the strengthened rear fuel tank braced with Morris tie-rods disposed as stays. The engine is a new 1,087 c.c. M.G. unit with special water feed to the cylinder head and a Zoller compressor mounted on a "U" member welded to the front suspension cross member. The supercharge pressure is variable, enabling a high boost to be used for sprint work and a lower boost for long distance racing. A single carburetter is fitted at present. The crash-type gearbox has been replaced by an E.N.V. self-change box having the control lever beneath the steering-wheel.

Lockheed front brakes will probably be used. The engine is expected to peak at approximately 6,500 r.p.m., and the car to weigh not more than 13½ cwt., and with alterations to the bodywork 130-135 m.p.h. is expected. The exhaust ports emerge on the near side and the driver sits centrally behind a raked steering column. This is a very interesting car at a time when hybrid jobs constructed for serious racing are conspicuous by their rarity. It should run at Donington, Brooklands and the Crystal Palace this year.

Private Subsidy

The B.R.D.C., regarded in some circles as rather more a race-promoting than a race-drivers' club, has now announced a scheme which is highly praiseworthy, and one that should to some extent place it beyond the missiles of such critics. Race organisers have been persuaded by the B.R.D.C. to subscribe to a central pool to provide a subsidy for those entrants who continue to support racing without getting "into the money." A marking system is to be used, giving two points to starters per meeting, six points to finishers, plus 50 per cent. bonus marks for the second of any two *consecutive* meetings. Provisionally, the Coronation Trophy Race, Empire Trophy Race, B.A.R.C. Easter Meeting and International Trophy Race will rank towards this bonus, and it is hoped that six prizes will be possible at the end of the season, the first of which it is hoped will be £250—which will go a long way towards repairing those sump-ventilating apertures which have a habit of forming in racing-engine crankcases. Only British subjects are eligible. It would seem desirable to limit the marks to those who do not finish sufficiently high up in any race to gain a money prize and the 50 per cent. bonus may be found a little hard on a man who carries on racing in spite of a bad blow-up, but has on that account to miss one or more intermediate meetings. But the scheme is a very excellent one, and will no doubt be established on a thoroughly satisfactory basis after a season's trial.

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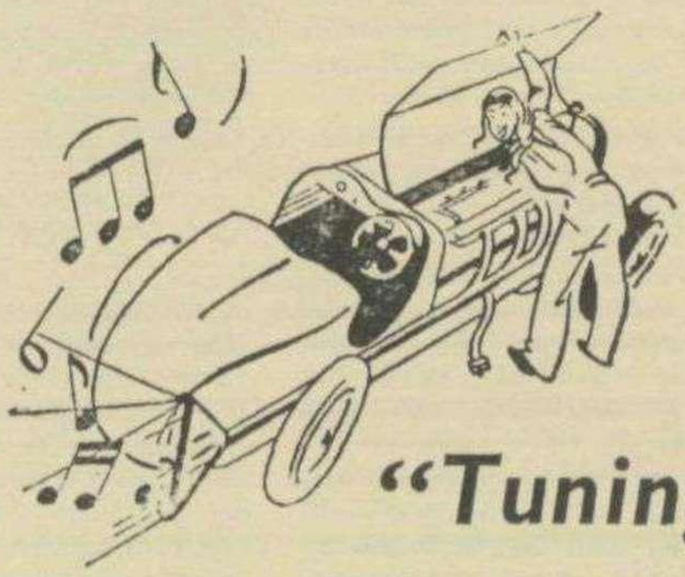
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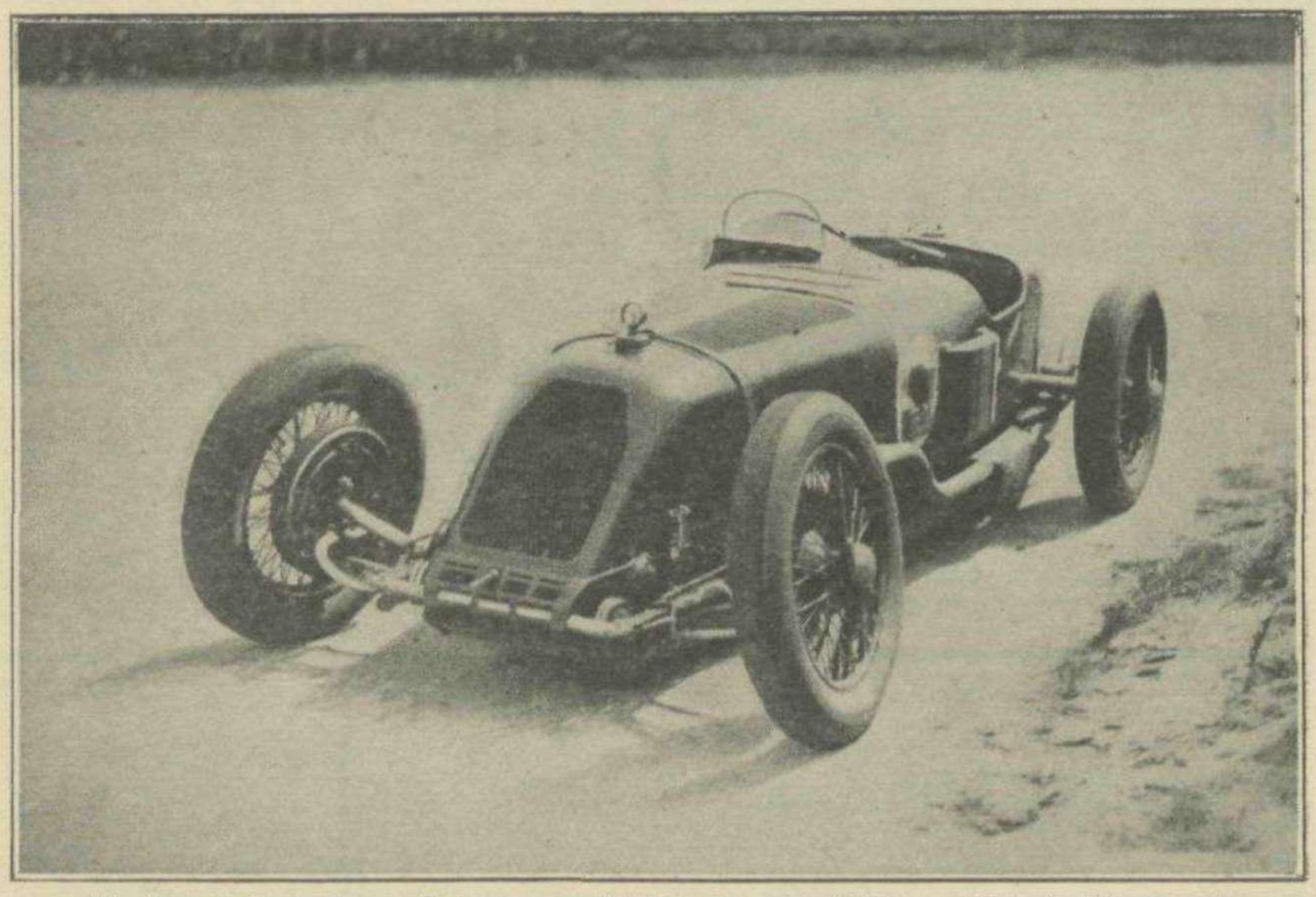
THE "FIFTEEN HUNDRED" FORMULA

THE first full description of the revived 1½-litre Talbot of A. Powys-Lybbe, published in this paper last month, focused attention on the 1½-litre G.P. Formula, and as the 1½-litre class will be in a very flourishing state this season, there is reason to enlarge on the palmy days of 1½-litre racing.

The 1½-litre Formula came into force in 1926, in conjunction with a stipulation that minimum weight should not be less than 700 kg. and the body width not less than 800 mm. This ruling was retained internationally for the 1927 season, after which the French G.P. went rather to fragments, becoming a sports-car race in 1928, although 1½-litre racing was by now firmly established and it has continued in a flourishing state, although the Formula has never been so constituted since. The limited capacity ruling was first applied in 1914, being set at 4½-litres and resulting in exultation for Mercédès. In 1921 the Formula specified a maximum of 3-litres with a minimum weight of 800 kg., in 1922 the 2-litre maximum was in force, with a minimum weight of 650 kg. and for 1923, when Sunbeam won at Tours, the same held good. Likewise, this Formula was used throughout 1924, when Alfa-Romeo had found full efficiency under this ruling, and again for 1925, when Delage proved superior. The four-year plan necessitated a change for 1926 and, probably on account of the extremely potent outputs realised from tiny engines by reason of supercharging, small cylinders and high rates of crankshaft rotation, the famous 1½-litre capacity limit was introduced for 1926. The minimum weight allowed for the cars, mostly two-seaters to begin with, of 650 kg., compares with the permissible minimum of 560 kg. for blown 1½-litre cars under the existing Formula.

The changed Formula was not altogether popular, but the leading race-supporting manufacturers got busy building, designing or circulating rumours of new 1½-litre cars. Bugatti had introduced his type 37 the year previous, and was at work on a straight-eight job, as were Delage and Talbot. Sima-Violet was expected to be in the field, and Fiat engineers had started to evolve a 1½-litre opposed-piston twelve-cylinder two-stroke racing-engine to run up to 11,000 r.p.m. O.M. was said to be building 1½-litre straight-eights, while Itala favoured twelve-cylinders and front drive, and told of cars "on the stocks," which, of course, is vastly removed from "on the road."

Yet all these beautiful plans failed to produce more than three Bugattis for the premier fixture of 1926—the A.C.F. French Grand Prix. This Molsheim procession was dispatched on the 312½ mile race round Miramas track, and Vizcaya and Constantini were soon in trouble owing to unsuitable fuel, so that Jules Goux was flagged the winner, when Constantini was still in action, which awarded him a second place both easy and difficult of attainment. Goux's average was 68 m.p h. The next Formula race counting towards the "Championship of the World" was the European G.P. run over the Lasarte circuit near San Sebastian. The heat was appalling, as the Delage and Bugatti teams drew up for the start—the only starters out of a promising entry. The Delage cars were the new straight-eights, very low-built, and soon their drivers discovered that the cockpits were warmed not only by the sun in heaven but by the exhaust pipes running alongside the body. Senechal took over for a time from Bourlier, and incurred the displeasure of the officials for so doing. Goux brought his Bugatti home in first place and eventually the wrath of the organisers subsided and Bourlier, with Senechal, was given second place with Constantini's Bugatti third. Goux did the 484 miles at 70½ m.p.h.



The first G.P. in Great Britain was held in August, 1926. Here is Moriceau's Talbot which broke its front axle at the commencement of the race.

In August the R.A.C. organised the first Grand Prix on British soil—or rather, concrete, for the race was run over a circuit at Brooklands embracing artificial corners. The new straight-eight Talbots and the Delage team competed against Sir Malcolm Campbell's blown straight-eight Bugatti, Capt. Eyston's Aston-Martin and the Halford-Special. The last-named was the child of Major F. B. Halford, who now presides over the very fine D.H. drawing office as designer of the Gypsy aero-motors. The Halford had a six-cylinder engine of advanced design, with wet cylinder liners, three o.h. valves per cylinder and a Roots blower, the design of Halford, in an old Aston-Martin chassis. Right at the start Moriceau's front axle collapsed and one Talbot was out. The Talbots left the Delage cars on acceleration, but their brakes were weaker. The trouble of overheating returned, Divo's car almost catching fire, and Wagner needing to bathe his feet. Eventually Wagner won at 71.61 m.p.h., Sir Malcolm Campbell's Bugatti was second and Benoist and Dubonnet third with another Delage.

In MOTOR SPORT of September 1926 appear some very excellent photographs which exactly recapture the Brooklands atmosphere on that hot and historic afternoon. The Halford-Special retired after running well, with a broken universal joint, and the A.M. went out with cylinder head and water-pump trouble.

In September the last of the Formula races was contested—the Italian G.P. at Monza. Once more the field was mediocre, consisting as it did of three Bugattis, two Maseratis, and a Chiribiri. "Sabipa" came home the victor, his Bugatti averaging 85.87 m.p.h. for the 372 miles. Constantini on a Bugatti was second.

Bugatti thus looked back on three firsts and three second places in the Championship classics, easily winning the title. He used the straight-eight, roller-bearing car with Roots blower beside the engine and single o.h. camshaft operating three vertical valves per cylinder.

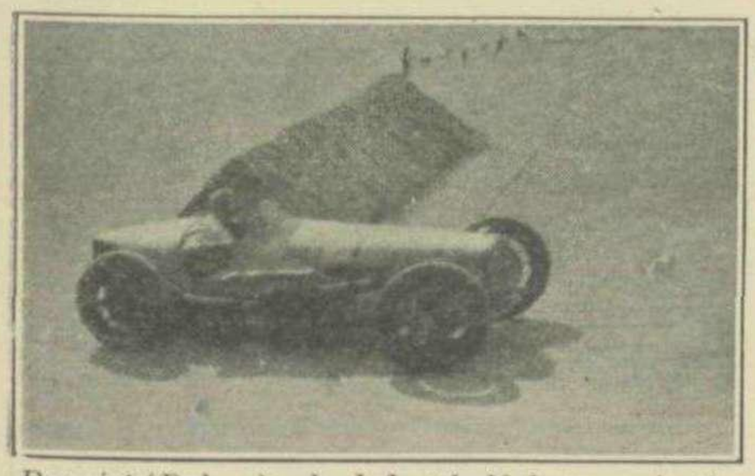
1½-litre cars were prominent in some of the less important 1926 races. For example, Segrave won at Miramas in the G.P. de Province, driving a non-Formula four-cylinder sixteen-valve blown Darracq, leader of the 1½-litre class up to that year. Segrave covered 115.8 miles at 81.8 m.p.h. and beat Moriceau on a sister car. Emphasis was placed on the minimum weight rule at Boulogne, when Eyston and Douglas finished first and second respectively in the 1½-litre race, only to discover that Douglas's exhaust pipe had discarded itself and put the Bugatti 6 lb. under the limit. Eyston drove his Bugatti. In the G.P. du Salon at Montlhèry the new Talbots dominated the 1½-litre race, Divo, Segrave and Moriceau leading throughout to finish in that order, Divo at 62.6 m.p.h. And, of course, the J.C.C. again put on the "200" at Brooklands, always a "fifteen hundred" race, wherein

THE "FIFTEEN HUNDRED" FORMULA—continued

the new Talbots really got down to things, Segrave winning at 75.56 m.p.h., with Divo second, followed by Purdy's Bugatti and the very fast 1,100 c.c. Amilcars, which had previously shown up well amongst the larger *voiturettes* abroad.

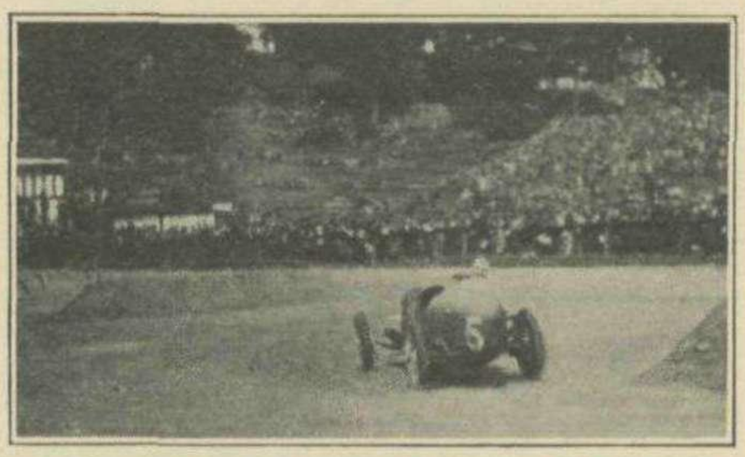
The same Formula held force for the 1927 season, but hopes of obtaining worth-while entries were at low ebb, probably on account of the great cost of building sufficiently potent small G.P. cars, which were—and still are—very delicate and expensive productions. In the article on Powys-Lybbe's Talbot published last month the original cost of a car of this class was estimated at about £5,000. The O.M. 1½-litre Formula cars had not appeared, neither had the f.w.d. Itala, while the two-stroke Fiats had been tested at Monza by Bordino but not entered for any races, and it was said that entirely new engines were in hand. Other rumours were flying around and about at the opening of the 1927 season, notably that Diatto and Isotta-Fraschini were producing 1½-litre racing-cars. But hardened followers could not hope for more than a continuance of the Talbot-Delage duel, with some old Bugattis and possibly the two-stroke Sima-Violets that ran at Boulogne in 1926 as supporters. Maserati, Guyot and Alvis with the eight-cylinder f.w.d. cars they had in the last "200" were other looked-for and looked-forward-to entries and America was expected to take some part in European races, following an agreement between the A.A.A. and A.I.A.C.R., central steering being permissible henceforth in Formula races, though in the States they had no love for the minimum body-width ruling.

The history of the year 1927 is a story of a Delage triumph. In the French G.P. at Montlhèry Benoist won at 77.24 m.p.h. for the 373 miles, followed home by his team mates Bourlier and Morel. The Spanish G.P. saw the master, Benoist, again victorious, at 80.5 m.p.h. for 430 miles, though Conelli's Bugatti was second with Bourlier's Delage third. Benoist then won the European G.P. at Monza from O.M., covering 250 miles at just over 90 m.p.h. In the Milan G.P. the sensational twelve-cylinder Fiat came out in care of Bordino, to win from an Alfa-Romeo and a Bugatti to the



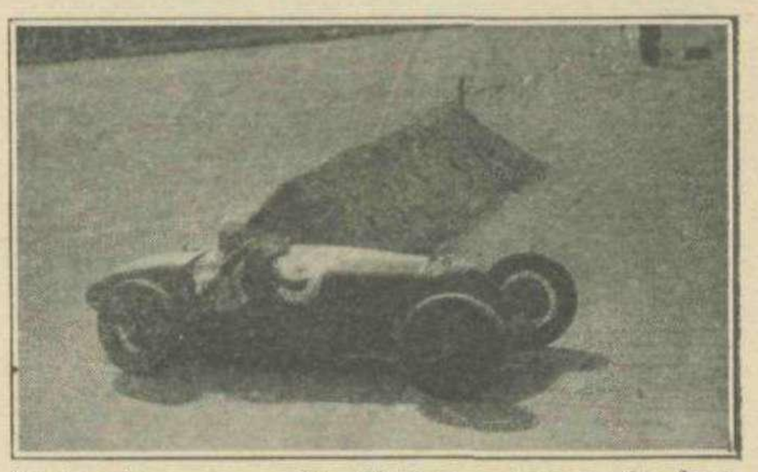
Benoist (Delage) who led at half distance in the 1926 G.P. at 80.41 m.p.h.

tune of 94½ m.p.h. for the 31⅓ mile final race. At Boulogne the Molsheim cars came home first, second, third in the 1,500 c.c. category, Campbell's Bugatti averaging 67.2 m.p.h. for the 278½ miles. But in the second British G.P. at Weybridge, Benoist, Bourlier, and Divo set the seal to a Delage year, Benoist leading home at 85.59 m.p.h. for the 325 miles. So, very conclusively, M. Louis Delage and his engineers showed that there was very little they did not know about "fifteen-hundred" Formula motors. Undoubtedly the previous full year's experience with the same design and the earlier experiments with the blown and unblown V12 2-litre cars assisted towards winning the last "Championship of the World." In our own 200 Mile Race Sir Malcolm Campbell's Bugatti won at 76.62 m.p.h., with Purdy on the eight-cylinder Thomas-Special second and an Alvis third. Again, the 1,100 c.c. Amilcar Sixes proved almost as potent as the 1½-litres, which sets one pondering on what would have happened had the 1928 Formula been a limited capacity one with 1,100 c.c. the sky-line. The O.M.s, now out of date, had run at Monza and beaten the American cars but not the Delage, and the Fiat ran in another race besides winning at Milan, and Maserati was too small a star to shine brightly in the Formula firmament. Thereafter the 1½-litre limit was abandoned as the international factor, just in time it would seem, for support would have



The Halford Special rolls on a corner.

been sadly lacking. Thereafter we survived a series of sports and class contests and the position strengthened with four years of the *Formule Libre* ruling. Now we look forward to the new Formula, whereby 1½-litre cars may again dominate the international Grands Prix, or at all events be in the picture over certain circuits, as seems more probable, experts having agreed that 3-litres of force-inducted motor will win all the races under the 1938-40 ruling. But, although from 1928 onwards racing engines grew steadily bigger, the 1½-litre classes continued and, indeed, grew in popularity. Maserati did particularly well in this sphere of activity and we have seen late examples of both the four and six-cylinder cars in action in this country. Then, in 1934, Humphrey Cook and Raymond Mays drew back a very significant curtain, and the E.R.A. soon focused the attention of the world on Britain's power in 1½-litre racing, until, with the present cars, the E.R.A. stable has the satisfaction of knowing that its cars are the most potent 1½-litres in existence, by universal recognition after their numerous successes. There is great satisfaction in remembering that they were developed from the sports Riley, more inexpensively than the G.P. class cars they have had to compete against. So we come to the beginning of another season, with the inevitable rumours very much in the air. One thing is certain and that is that the 1½-litre cars, both in Formula races and their own contests, will be very well worth following—E.R.A., Maserati, and



Major Segrave on his Talbot entering the last bend in the 1926 R.A.C. Grand Prix.

Alfa-Corse should definitely be in the field. The 1½-litre class is especially interesting as representing a very high degree of engine efficiency as applied to racing-car development. Small engines lend themselves to burning as much fuel as possible in a given time, by reason of high rates of operation being permissible on account of light moving parts, and also to the efficient burning of the fuel by reason of compact combustion chambers. The 1½-litre E.R.A. must now develop well over 130 b.h.p. per litre. And it weighs less than the 1927 Formula cars. Possible future developments may be indicated by the fact that the six-cylinder twelve-piston 1½-litre Zoller two-stroke aero-motor is said to give 133 b.h.p. per litre at 5,500 r.p.m. and that the four-cylinder eight-piston 58.5×69×2 mm. Fiat aero motor, also a supercharged two-stroke, is claimed to give 113 b.h.p. per litre at 6,000 r.p.m.

I propose to conclude this article by giving a few details of the leading 1½-litre cars of 1926-7.

The Delage was a 55.8×76 mm. 1,486 c.c. straight-eight, with inclined o.h. valves actuated by twin camshafts driven by spur-pinions. The pistons were aluminium; the con-rods I-section. The one-piece crankshaft had circular webs and was case-hardened and heat-treated. It ran in nine roller main bearings, and the big-ends were also roller bearings. A single plug per cylinder was fired by an engine-speed Bosch magneto on the right of the block. The lubrication system was dry-sump with triple pumps. Twin blowers were used for 1926 but in 1927 a single Roots blower was utilised, the carburetter mounted directly on the casing. The engine was off-set to the near side and it peaked at about 7,500 r.p.m. The dry, multi-disc clutch and five-speed gearbox were in unit with the engine. An open-shaft transmitted the drive to a bevel final drive and differential. The chassis was conventional, with mechanical servo four-wheel brakes, with driver adjustment. The wheelbase was 8 ft. 2 in., the track 4 ft. 3 in., and weight, empty, 14 cwt. 85 lb. Maximum height 35 ins. Seaman's car was still highly potent in 1936, but has not been so since "Bira" has had it further modified. Lord Howe reintroduced the 1927 Delage to Continental racing.

THE "FIFTEEN HUNDRED" FORMULA—continued

The Talbots were of very similar design. Steel cylinders were set in two pairs of four, and had welded water-jackets. There were two oil-pumps and twin magnetos. The gearbox gave four speeds. Bugatti used his eight-cylinder twenty-four valve car, with Roots blower and very light engine internals, if his strict and conservative rev. limits may be taken as a guide. Alvis had straight-eight f.w.d. cars with twin o.h. camshafts, Roots blower and four oil pumps with sump oil storage. E. A. D. Eldridge built two 1½-litre cars, the engines developed from Anzani designs, and the Halford-Special has been mentioned. The twelve-cylinder Fiat had two blocks of six-cylinders set side by side, with two crankshafts, geared together. Most of the Talbots vanished quite quickly, but Powys-Lybbe has saved one of them, as detailed in MOTOR SPORT last month. This car, possibly with the "Bira" Delage, and the air-cooled C. E. C. Martin-Special should enliven our 1½-litre races this season. Parry Thomas built two 1½-litre straight-eight blown Thomas-Specials for G.P. type races in 1926, but his death in 1927 disrupted the work and the cars only ran in track events.

Since the demise of the 1½-litre Formula the I.O.M. Light Car Race and the Nuffield Trophy Race at Donington have been our most important 1½-litre races. The speeds at which these and the important Continental 1½-litre races have been won make instructive comparison with the earlier 1½-litre races quoted, in the hey-day of the "fifteen-hundred." Last year, E.R.A. won the I.O.M. race at 70.69 m.p.h., the Nuffield Trophy Race at 65.89 m.p.h., the Picardy G.P. at 91.3 m.p.h., the Berne G.P. at 87.5 m.p.h., the 200 Mile Race at 69.67 m.p.h., and the Phœnix Park Race 100 Mile Scratch Race at 102.9 m.p.h. Distances were considerably shorter than in 1926-7, while naturally a knowledge of the nature of the circuits is necessary in making intelligent comparison. Certainly the 1½-litre cars go very potently indeed and the new Formula should have its beneficial effect on their future, even if cars of double the capacity beat them easily—as we are told to expect—in open combat.

VETERAN TYPES

AN extremely fine pre-war Mercédès has come to light at the Corsica Coachbuilding Shops at Cricklewood. It is owned by Capt. A. S. Belleville and is one of the legendary "Ninety" Mercs., of 1913 vintage, the official h.p. designation being 37/90, and R.A.C. rating 41.9 h.p. "Baladeur" wrote up one of these cars in his "Veteran Types" articles in MOTOR SPORT of December 1932, this being the car then owned and regularly used by B. A. Blyth, who later had to go to New Zealand as an air-line pilot. We believe this car is now owned by John Morris. Capt. Belleville's car has been thoroughly reconditioned and will be used, apparently, on the road. It differs only in detail from the car previously described. The big engine has four cylinders of 130×180 mm. (9,491 c.c.) in pairs of two, with three push-rod operated o.h. valves per cylinder. A Zenith carburetter on the offside feeds via a heated manifold. On the near side a central drive from the camshaft drives the water-pump and a Bosch Z4 magneto in tandem, the latter firing two plugs per cylinder. Four plated exhaust pipes emerge from the bonnet on this side and feed into twin silencers incorporating a cut-out. There is a big cooling-fan. The chassis number is: Daimler Motoren Gesellschaft 17671. Final drive is by side-chains enclosed in metal chain-cases. There are big brakes on each side of the differential assembly. The radiator and bonnet line have been lowered slightly and a new Corsica two-door four-seater sports body fitted, complete with hood, folding screen with Lucas wiper and new instrument board containing an oil-gauge, rev.-counter reading to 2,000 r.p.m., lighting panel and 100 m.p.h. speedometer. There is also a Wasser-saule pressure-gauge on the floor. There are *four* control pedals, the brake and gear levers are external and the steering wheel is cord bound. The wood wheels have metal discs to match the flaired wings and short running-boards, and they carry new Dunlop herring-bone tread 895×135 covers. The headlamps are Zeiss, and the dynamo is driven by whittle-belt from the carden-shaft. From the rear this exciting motor-car resembles a touring Rolls-Royce of 1925-7 vintage. Actually, it was last registered in London in 1919. It is probably the only one of these extremely famous and rapid cars in running order in this country, and we hope to hear more of it.

John Morris has had the wretched luck to crack a cylinder of the Big Benz, after spending years mending the gearbox, but he hopes to get new pots cast, and we hope to see this car running in the veteran class at Vintage S.C.C. and other meetings this year. Chambers has disposed of his baby Peugeot and Mills is working hard on the 1907 Renault, imbibing more speed. R. G. J. Nash has new pistons for the Lorraine and Forrest Lycett is so pleased with his Alphonso Hispano, as overhauled and de-cobwebbed by McKenzie, who has fitted one of the original carburetters, that he has been doing quite a bit of touring with it. The veteran class at Shelsley-Walsh seems a probability. In another sphere, Nash is rebuilding a Gordon Bennett Bleriot aeroplane at Brooklands.

BROOKLANDS—MARCH 12th

Spring must be here, for Brooklands opens again on March 12th. The combined motor-cycle and car meeting starts at 2 p.m. and the usual admission charges apply. The car entries are as follows:—Short outer-circuit handicaps:—H. J. Aldington (Frazer-Nash-B.M.W.), F. Y. Andrews (Balilla Fiat), G. L. Baker (Graham Paige), E. A. Bradley (Thomas Special), E. G. Brettell (Austin Seven), C. T. Baker-Carr (Bentley-Jackson), D. Courtney (Amilcar Six), Charles Follett (Alvis), St. John Horsfell (Aston-Martin), R. J. T. Marston (Bugatti) and G. A. Wooding (Talbot).

Campbell Circuit handicap:—G. E. Abecassis (Alta), Hon. P. Aitken (Maserati), Hon. P. Aitken (Frazer-Nash), H. J. Aldington (Frazer-Nash-B.M.W.), F. Y. Andrews (Fiat), J. H. Bartlett (E.R.A.), J. H. Bartlett (Alfa-Romeo), E. G. Brettell (Austin Seven), "B. Bira" (Maserati), "B. Bira" (E.R.A.), P. C. T. Clark (H.R.G.), Billy Cotton (M.G.), Billy Cotton (E.R.A.), R. M. Cowell (Austin Seven), J. Dugdale (M.G.), K. D. Evans (M.G.), A. F. P. Fane (Frazer-Nash-B.M.W.), E. C. Fernihough (Riley), Mrs. Corbett Fisher (M.G.), K. Gammon (Riley), St. John Horsfell (Aston-Martin), A. Leitch (Bugatti), A. Powys-Lybbe (Talbot), P. K. Monkhouse (M.G.), I. H. Nichols (M.G.), G. P. H. Noble (M.G.), J. H. T. Smith (M.G.), Mrs. E. M. Thomas (Alfa-Romeo) and Miss D. Stanley-Turner (M.G.). These names speak for themselves.

VINTAGE S.C.C.

The Club has managed to change certain "difficult" dates, and its fixtures are now as follows:—March 13th, Chiltern Trial; April 23rd, Donington meeting; April 30th, Surrey Trial in conjunction with Mid-Surrey A.C.; May 21st Donington meeting with U.H. & U.L.M.C.; July 9th, Lewes Speed Trials; August 27th, Prescott Speed Hill Climb; November 27th, Gloucestershire Trial.

The Northern Trial on January 23rd was won by F. King (Lancia Lambda) in the large class and D. D. Clapham (Alvis) in the under 1½-litre category. A list of members will shortly be issued, also the balance sheets for 1937. There are some 290 members on the books, and the newcomers to the fold include eight associates and owners of the following cars:—one Bugatti, one Frazer-Nash, one 6½-litre Bentley, one 3-litre Sunbeam, two 3-litre Bentleys, one G.N., one Targa Florio Itala, one Mathis, one Special, one Delage, one Lea-Francis and yet another 30/98 Vauxhall. The current Bulletin contains a report of the Northern Trial and Sam Clutton's impressions of a 1914 G.P. Mercédès, which is still a match for any 30/98.

There will be pre-war classes at Lewes and the scratch pre-war class at Shelsley in May is largely due to Clutton's persuasive powers. Many members have been meeting at the "Phœnix." New members with the right motors and/or the right ideas will be very welcome.

Hon. Secretary: Tim Carson, "The Phœnix," Hartley Wintney, Hants. (Hartley Wintney 84).

COURTESY

The N.W. London M.C. is postponing its Easter Team Trial until later in the year, as it feels that priority should be given to the more important S.U.N.B.A.C. Team Trial scheduled for April 23rd.

Continental Notes and News

By AUSLANDER

The Racing Car of To-day . . . .

Chief topic of conversation lately has been the Berlin Motor Show and the marvels of automobile engineering contained therein. Everyone who visited the Kaiserdamm Exhibition Halls seemed to agree that technically it has been the most interesting motor show seen in Europe for many a long day.

This year more than ever one could detect the influence of racing on the design of ordinary cars, an influence that has received impetus from the prolonged high speeds attainable by private cars on the *Reichsautobahnen*. The new 7-litre "Grosser" Mercédès-Benz bore a close resemblance in many points to the racing-cars of the same make, particularly as to its chassis and suspension layout. Judging by the way the featherweight racing-cars hold the road on none-too-smooth surfaces at 180 m.p.h., this new "Grosser" Merc. ought to be about the safest thing on wheels ever made, even though it can do its 103 m.p.h. in full saloon form.

But it is not so much in actual details as in general handling that German cars reflect the lessons of racing, although I dare say a keener and more discerning eye than mine would be able to point out features of design accounting for this, however slight. Take the little D.K.W., for example. This car is regarded purely as a utility model in Germany, and yet it steers and road-holds in the manner of a thoroughbred sports-car. The point is, of course, that it *is* a thoroughbred, emanating from the Auto-Union stable.

One can best appreciate the behaviour of the D.K.W.—and other German family cars—by coming to them fresh from a typical British saloon of a similar *genre*. Now before those of you who are dyed-in-the-wool patriots reach for your pens and dip them in vitriol, let me say at once that I am a staunch admirer of the British mass-produced small saloon. I have owned several of them, and have driven them in a variety of circumstances, including thousands of miles on the Continent, and in many respects they are admirable. I like their smoothness, their power, their comfort, their gearboxes, their brakes and their general finish. But I hate their steering, their cornering, and their lack of road-holding (as distinct from comfortable riding).

Why is it that British cars, almost without exception, do not steer as well as their Continental counterparts? I don't think it can be the fault of the steering-gear, because after all the steering mechanism is very much the same on all cars. I am not a technical expert, but surely it must boil down to the right and wrong way of putting the bits together and locating them properly in relation to other parts, such as wheels, springs, and axles?

Correct me if I'm wrong.

Making Unorthodoxy Pay

The second feature that was bound to impress the British visitor to the Berlin Show was the refreshing courage displayed by German manufacturers in including unorthodox features of design in their products.

I know what the British manufacturer replies to this: he says that he is perfectly willing to depart from the unorthodox, but the Great British Public would not follow his lead.

Well, here is a true story of a discussion I once had on this very problem with one of our biggest manufacturers, who was contemplating the production of a cheap and economical "baby" car. He himself was very keen to use a two-cylinder two-stroke engine with front-wheel drive, so as to leave as much room as possible for body space. His trouble was that he had mentioned the idea to his main distributors, who had condemned it as one man. They said that the public would never buy such a car. "Take our word for it, we know what the public wants."

The manufacturer told me that he had tried to compromise by offering to use a normal four-cylinder engine, while retaining front-wheel drive. Still the distributors were adamant. "The public will think that it's an experimental job, and won't buy it for at least a year." The manufacturer reflected that, in order to get down to the desired price, he would have to lay down at least 10,000 units, and decided that in fairness to his shareholders he would have to scrap his own idea of what a cheap, economical car should be like and bow to the superior wisdom of his retailers.

In Germany there are 232,000 two-stroke two-cylinder D.K.W.s in use; every car and every model save one has independent front-springing; tubular backbone chassis are common; Mercédès-Benz are successfully marketing a Diesel private car; and Adler and others find many motorists willing to buy ultra-streamlined saloons.

What can Britain offer in comparison? Yes, I know the answer, which is that engineering progress does not matter two hoots so long as our existing cars are good enough to sell by the hundred thousand, and balance sheets are annually passed with enthusiastic unanimity by Philistine shareholders.

With the Racers

After this melancholy dissertation, let us turn to the brighter theme of Grand Prix racing. There is not much news to report. The Germans are living up to their reputation for thoroughness by taking their time in perfecting their new season's cars, and refusing to enter them for races until they are really ready. This means that the Pau Grand Prix curtain raiser will probably be left to the French and Italians, and the first clash of all the makes will not occur until the Tripoli Grand Prix on May 15th.

All of which goes to show the immense amount of work and time required to bring a new racing-car into being, even when you have the unlimited resources of a concern like Mercédès-Benz behind you.

I am glad to hear that Seaman has renewed his contract with Mercédès-Benz. When he first joined the team I remember saying that it would take him a whole season to settle down properly, and that he would not show his paces until the following year. Since then he has had a variety of experiences, incidents and accidents, some of them not his own fault, and he should have benefited greatly thereby. Anyway, I repeat my prophecy, and say that I think that this year will see Dick Seaman come into his own as the great racing driver that he undoubtedly is.

Caracciola, Lang and Von Brauchitsch will complete the team of first-string drivers, with Hartmann, Baumer and Brendel as *cadets* training for next season. Kautz, the brilliant young Swiss driver, who finished third in the Monaco Grand Prix last year, has not yet renewed his contract.

It is good news that the Mercédès-Benz will not differ greatly in external appearance from the previous cars, which in my opinion were the most graceful and æsthetically pleasing racing-cars ever produced. The smaller engine capacity will permit the use of a low bonnet, similar to that of the 1936 cars. In weight they will also be similar, and their maximum speed should be in the region of 170 m.p.h.

Franco-Italian Accord

No, this is a not a new political "axis," but just my little way of saying that the Italian and French racing camps are in agreement that Grand Prix racing is going to be a much more open business this year, and that the Germans are not going to have it all their own way by a long chalk. (Can anyone tell me exactly what that phrase refers to: is it darts, billiards or shove-ha'penny?)

In fact the French go so far as to say that the French Grand Prix is as good as won already; the only doubt being as to whether Talbot-Darracq, Delahaye or Bugatti will be the winner for France. The Italians are not quite so positive in their optimism, but they think they have a good chance.

I wonder whether we shall ever get to the state when motor-racing teams issue pre-race statements on their chances in the manner of heavy-weight boxers? Imagine Herr Neubauer saying: "Our cars will lap the Talbots and Delahayes so quickly that it will seem as though there are dozens of Mercédès in the race!" To which M. Lago would counter: "We admire the courage of the Germans in entering for our French Grand Prix, but courage alone will not prevent their cars from being flagged off the course for getting in the way of our *bolides magnifiques*!"

Personally, I still think that the blown cars will prove the masters of the unblown, and I prophesy (this is becoming a habit with me) that the Grand Prix sport will

CONTINENTAL NOTES AND NEWS—continued

resolve itself into a battle between Mercédès-Benz, Auto-Union and Alfa-Romeo, with Maserati and Bugatti as potent outsiders.

Alfas, by the way, are wisely concentrating on the eight-cylinder engine, a type with which they have had much experience. The sixteen-cylinder unit has been put aside for the moment, but may be completed in the event of the "eight" being unequal to its German rivals.

The French teams are well ahead with their preparations, and are going to try out their new Grand Prix engines in touring chassis in the Mille Miglia. There's nothing like a spot of actual racing to show up any weaknesses. Dreyfus has been snooping round the long circuit in an effort to memorise some of it, and the Delahaye team will be strengthened in the race by the inclusion of Piero Taruffi, who may also drive in Grand Prix races later.

Personally, of all the French racing manufacturers, I fancy Bugatti to put up the best opposition to the Germans and Italians under the new formula, provided he can devote enough time to getting his blown 3-litre into good shape. I have the greatest admiration for Wimille as a driver, and would rate him on a level with Lang and Von Brauchitsch, with the making in him of a Caraccola or a Nuvolari.

A Million for the Kitty

There was welcome news for Delahaye, Talbot and Bugatti recently in the announcement that the French Government had donated another million francs to the National Fund for Motor Racing. It has not yet been decided how this will be allocated.

Previous gifts from the fund have been 400,000 francs to Bugatti for Wimille's road-circuit performance at Montlhèry, a million francs to Delahaye for Dreyfus's ditto, and 15,000 francs to a M. Claveau for a treatise on racing-cars read to the Concours de Projets.

I wonder how a National Fund would go in Britain, with collections at every race-meeting, and an occasional gift from Dr. Burgin . . .

Fastest on Earth

Rumours continue to circulate that Germany is building a car to attack the World's Land Speed Record. It is true that the matter has been given careful consideration, but I can say that nothing will be done this year. The death of Rosemeyer, even though it was caused by weather rather than road-conditions, has resulted in a general feeling that higher speeds should be postponed until the fifteen-mile stretch of 90 ft. road is finished in Prussia, which will be some time in 1939.

There is little likelihood of the Germans going to Bonneville Flats, as, national considerations apart, they believe that such conditions are so abnormal as to be valueless from the technical point of view.

Atoning for Monte Carlo

The dismal failure of British cars in the Monte Carlo Rally was to a certain extent atoned for by the success of British women-drivers in the Paris-St. Raphael Rally.

Best performance of all in this all-women rally was that of Miss Betty Haig, who finished first in the Class A (Expert) general classification and won the 1,100 c.c. category with her M.G. Miss Haig has competed in the Paris-St. Raphael for several years, generally on a Singer, and her success this year is a fitting reward for her perseverance.

Other British cars to do well were Countess Moy's Riley, which was second in the 1,500 c.c. class, Miss Riddell's M.G., the winner of the 1,800 c.c. class, and Miss D. Stanley-Turner's M.G., fifth in the general Class A placings. Both Miss Riddell and Countess Moy are annual competitors in the Rally.

In addition, two other British drivers, Mrs. Lace and Miss Amy Johnson, the aviatrix, finished second and sixth respectively in the Class A general classification on their Talbot-Darracqs.

At St. Raphael a Concours d'Elegance resulted in first prize being taken by Miss Amy Johnson, with Miss Stanley-Turner second. Miss Haig won her class. Miss Amy Johnson, incidentally, was fêted by enthusiastic officials and spectators throughout the Rally.

The route was from Paris to Vichy, Lyons, Geneva (where a halt was made for a day), and thence to Grenoble, Orange, Marseilles, Toulon, Draguignan and St. Raphael. Scattered over the route were a 500-metres standing start speed trial, a flying kilometre, a parking test, and a difficult hill-climb at St. Raphael.

Altogether a good show, and worthy of continued support from our capable British ladies.

Idea for Holiday

Talking of rallies, anyone who wants to combine motoring with a flavour of sport should consider the Liége-Rome-Liége affair in August. This represents 2,700 kilometres of varied route to be covered at 32 m.p.h., starting from Spa, and taking in Monte Cenis and a return through the Dolomites and over the Stelvio.

Ought to be good fun.

Flashes

Forty-three cars are already entered for Le Mans, leaving seventeen vacancies before the total limit of sixty is reached. (Good at arithmetic, that boy.) Clifford and Snow, the Australian, are to drive the ex-"Bira" Delahaye, likewise in the Belgian 24-Hours Race. Morgan to appear at Le Mans for the first time, driven by Miss Fawcett and G. White.

* * *

Protest by Le Bégue and Mahé over disqualification in Monte Carlo Rally has been disallowed by A.I.A.C.R. The observer on the spot insisted that the Talbot's wheels *did not* cross the line. Le Bégue produced a cine-film to show that he *did*. The authorities decided to stick to the theory that the referee's decision is final, and rightly so. Officially, their argument was that the only appeal they could consider was one challenging the interpretation of the rules, which was not Le Bégue's complaint. What he complained of was a fact.

* * *

If you want to know all about the Pau Grand Prix, regulations can be obtained from the A.C. Basco-Béarnais, Place Royale, Pau.

* * *

If you want to know all about the Tunis Grand Prix, I can tell you. It has been cancelled.

* * *

Can't think of any more at the moment.

INTERNATIONAL TROPHY RACE—BROOKLANDS

INTERESTING FEATURES IN REGULATIONS

There is something new in the way of prizes for the J.C.C.'s International Trophy Race at Brooklands on May 7th.

In races of this character it sometimes happens that certain of the cars entered are at a disadvantage on the score of age and, realising this, the Club is offering a special award of £50 for which the entrants of cars raced prior to January 1st, 1937, will be eligible to compete.

The award in question will be made to the entrant of the car which, complying with the condition referred to, is placed highest in the general classification of results and which does not finish in the first three.

The principal awards are: 1st—£250 cash; the Wakefield Trophy (value £100); the S.M.M. & T. Challenge Trophy (with replica in miniature). 2nd—£100 cash. 3rd.—£50 cash. 4th—Trophy presented by Charles Follett Ltd.

There is a cash prize of £100 presented by Joseph Lucas, Ltd., for the first British car, and handsome trophies for individual group winners are given by Clement Talbot Ltd., "The Autocar" and the B.A.R.C., together with additional cash prizes presented by S. Smith and Sons (M.A.) Ltd.

A perusal of the Regulations for the International Trophy Race reveals the interesting fact that the engine capacity limits for the three groups have been modified as follows:

Group 1—For cars with supercharged engines up to 1,100 c.c.

For cars with unsupercharged engines up to 1,750 c.c.

Group 2—For cars with supercharged engines over 1,100 c.c., but under 1,750 c.c.

For cars with unsupercharged engines over 1,750 c.c.

Group 3—For cars with supercharged engines over 1,750 c.c.

Entries at single fees (£20 per car) close on March 31st. Copies of the Regulations and Entry Forms are available from the General Secretary, Junior Car Club, Empire House, Brompton Road, London, S.W.7.

THE TREND OF DESIGN

(PART 2)

An article dealing with the progress that has been made in the design and production of racing cars during the past twelve months.

II. RACING-CARS

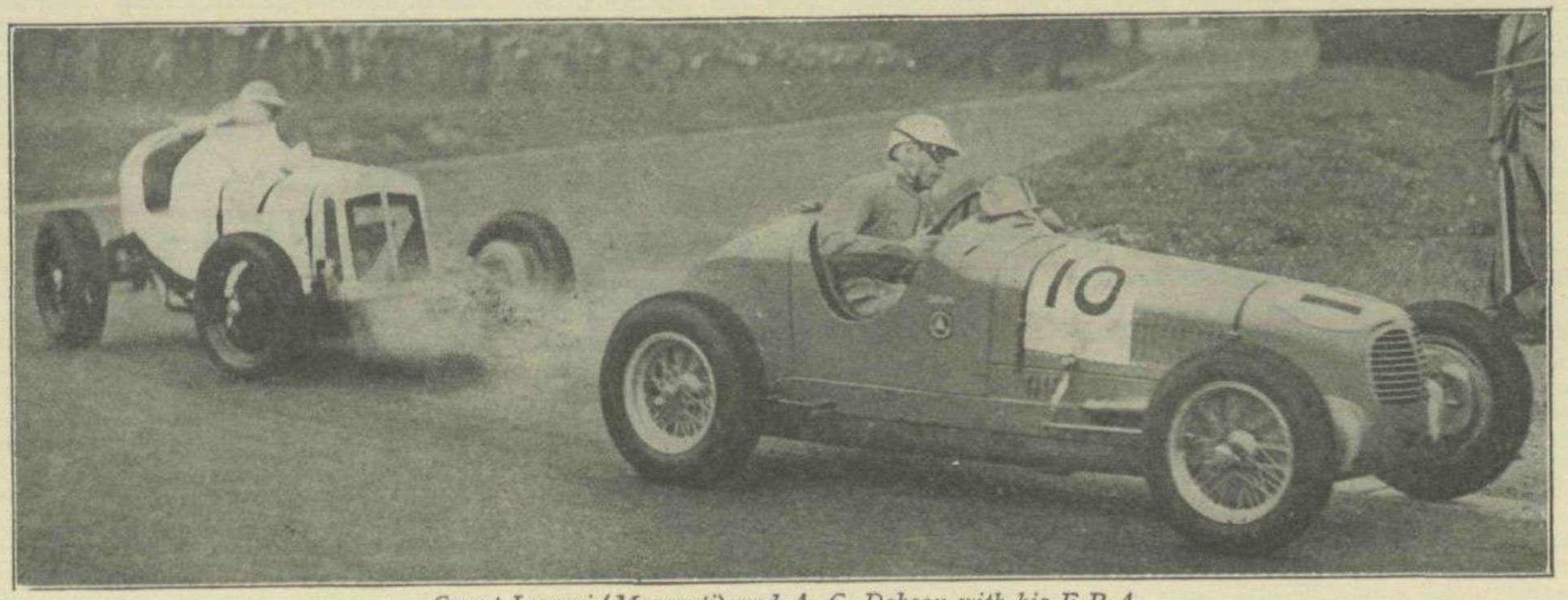
THERE is not a great deal to be written about racing-car design tendencies, because the subject was rather thoroughly dealt with exactly a year ago in MOTOR SPORT and as 1937 was the last year under the maximum weight formula, and as very few races will be eligible to old-formula cars from now on, development in the Grand Prix field has not unnaturally eased up. There still remains the very satisfactory knowledge that modern road-racing calls for the highest scientific technique and extremely skilful driving-tactics. It is a most thrilling and absorbing spectacle, as was brought home to the majority of enthusiasts in this country for the first time on the occasion of the Auto-Union and Mercédès-Benz visitation to Donington last October. Nevertheless, that such racing is a first-rate spectacle is entirely incidental ; indeed, the Formula in use up to last season actually aimed, unsuccessfully it is true, at making the cars slower than formerly. The very opposite rules in cinder-track racing and our opposition to this kind of racing lies in the futility of endangering life in what is a pure circus. Staged solely to amuse a certain public, doodle-dicing can be an excellent institution, provided it does not have to endanger drivers' lives to attain its ends. But that it can ever hope to attain the status of, and ultimately oust, road-racing as it has been practised ever since motor racing began, we just cannot accept, in spite of Mr. Cecil Kimber's view. We are, as a matter of fact, by no means certain that the future prospects of doodle-dicing, within its own limitations, are as bright as the fans imagine.

Turning to the happier subject of proper racing, whatever may be said about its having become too specialised to hand down any lessons of value to the utility car designer, certainly valuable publicity still results for entry in classic events, as Messrs. Auto-Union Sales Ltd. and Mercédès-Benz Ltd. would testify. All credit is therefore due to Lord Austin and Victor Riley for their continued interest in racing and, of course, to E.R.A. Ltd., the last-named in particular, on their entry into unlimited Formula racing this coming season.

Multi-cylinders rule supreme. Mercédès-Benz have used an "eight" of 5,660 c.c.—cylinders in line, Auto-Union their 75×85 mm. 6,006 c.c. 45° V16, while Alfa-Romeo produced another V12 of 5-litres, and the rumoured 3-litre E.R.A. is to be a V12. Moreover, most of the new G.P. cars will have multi-cylinder engines, 24 cylinder units being in the wind, and the Delahaye, of course, is a 4½-litre V12. Mercédès-Benz actually contrived to get the 8-cylinder 5.6-litre car within the 750 kg. maximum, in spite of using a new lengthened chassis to improve road-holding, though their 12-cylinder record breaking car of this capacity was outside the limit. And Auto-Union rose from 5.8 to just over 6-litres under the Formula, though employing a shorter wheelbase. Maserati has produced both four and six-cylinder 1½-litre cars, the latter with cylinders cast in pairs. Modern G.P. engines are of short stroke and give around 90 b.h.p. per litre, consuming roughly 0.7 lb. of alcohol fuel per b.h.p. per hour, or about 5 m.p.g. at racing speed. The complete cars weigh about 3½ to 4 lb. per h.p. with driver aboard. Fully inclined o.h. valves operated by twin o.h. camshafts are general, exceptions being E.R.A.'s push-rod actuation from high-level camshafts each side of the block and the single camshaft of the Auto-Union, which operates the inlet vales via rockers and the exhaust valves via push-rods and bell-cranks. Mercédès-Benz use an oil-cooler and Auto-Union a large separate oil reservoir before the driver and an oil-radiator. Light alloy construction is popular, on a variety of different systems. Auto-Union use R.R. alloy, and Mercédès-Benz steel liners in an alloy block, while the 1938 E.R.A.s will have many castings of elektron, as have the 1½-litre Maseratis. Supercharging is universal, the blower pressures being around 5 to 6 lb. per square inch on G.P. cars. The racing Austin Sevens are blown at 16 to 18 lb. and the Murray-Jamieson blowers on the 1½-litre E.R.A.'s deliver at 22 to 25 lb. "Bira's" old 3-litre Maserati and 1½-litre Delage have about 12 lb. boost and the six-cylinder 1,493 c.c. Maseratis are blown at 15 lb. The record-breaking 1,100 c.c. M.G. of Major Gardner's is believed to be blown at around 40 lb. per square inch.

The Roots supercharger is the most popular for racing work, but E.R.A. have this year been using large Zoller vane compressors set behind the power-unit, sucking from twin S.U. carburetters. An experimental layout using an Arnott vane compressor has been applied to Connell's 1½-litre E.R.A. by the Monaco Eng. Co., employing an increased boost. E. W. W. Pacey also experimented with a vane compressor on a Bentley engine linered down to 3-litres, for track work, but reverted to the unblown 4½-litre unit for the 500 Kilometre Race. Mercédès-Benz abandoned their through-the-carburetter system, used ever since they introduced supercharging for touring cars just after the War, adopting the conventional layout for the German Grand Prix. Alfa-Romeo apparently retain their familiar double Roots blowers on the new V12.

Concerning power outputs, naturally figures are difficult to come by and cannot be guaranteed accurate, but G.P. cars seem to give around 90 b.h.p. per litre in 4-6-litre form and about 75 b.h.p. per litre in 3-litre size, if one disregards the opinions ruling in certain quarters as to the optimism of Italian and German bench-testers. The 1½-litre six-cylinder Maseratis give approximately 120 b.h.p. per litre at 6,680 r.p.m. and "Bira's"



Count Lurani (Maserati) and A. C. Dobson with his E.R.A.

THE TREND OF DESIGN—continued

old 3-litre Maserati 100 b.h.p. per litre at just below 6,000 r.p.m. The older 1½-litre E.R.A. is believed to develop about 125 b.h.p. per litre and the racing twin cam Austin Sevens about 160 b.h.p. per litre. 200 b.h.p. per litre from small units is in sight, especially for sprint runs, and is probably attained now by some engines—such as the record-breaking M.G. Magnette and Zoller-blown 1,100 c.c. E.R.A. By the use of 80 per cent. alcohol content in the fuel, very large fuel lines and float chambers, piston crowns as thick as 10 mm., and the use of mineral lubricating oils, together with great attention to design details, compression pressures and crankshaft speeds continue to rise. It is usual to increase supercharge boost before raising the mechanical compression ratio, which remains at around 6 to 1—10 to 1 in consequence. A future step would seem to be elimination of the exhaust valve heat zone, by adoption of rotary or sleeve-valves; the Guyot racing-cars of 1925 had Burt McCallum single-sleeve valves, and sleeve-valves have been used by Panhard and Voisin, while H.R.G. installed a Cross rotary valve engine in one of their cars for a few events last year. Alcohol fuels are virtually knock-proof, but detonation occurs if pre-ignition takes place, and the cooling of exhaust valves by big guide-areas, salt-filled stems (used by E.R.A.), and water flow round the seatings, is nearing the limit. It is interesting that commercial brand oil is frequently used in modern racing engines, while Capt. Eyston used commercial B.P. for his world's 12-hour record with the Rolls-Royce engined "Speed of the Wind."

Suspension has undergone considerable change. Mercédès-Benz use independent coil suspension at the front, like that on their standard chassis, including the famous Type 540K. At the rear they use torsional bars, but we believe that a light beam now ties the wheels, so that an independent action is not obtained. Apparently the object is to obviate any tendency to roll when cornering, and using a light cross-axle and a gearbox mounted with the final drive on the frame still results in low unsprung weight and consequent improved wheel adhesion. The scrubbing action inherent with a rigid axle is of little moment, as acceleration and braking calls for frequent tyre changes. Separate steering arms are used.

Auto-Union modified their front axle and brake layout last season. They use torsional suspension front and back, said to be fully independent all round, though it is probable that the tied rear wheel method has recently been used, as with Mercédès.

E.R.A. adopted front independent suspension at the beginning of the 1937 season, with marked success. The front wheels swing on two arms held in bearings on the frame, these arms extending rearwards parallel to each other. They are controlled by torsion bars engaging each lower arm, the upper arms engaging friction shock-absorbers, and to accommodate the torsion members the wheelbase actually varies slightly each side. This suspension is rumoured to have been designed for E.R.A. by Dr. Porsche, the Auto-Union designer, and it was applied to two works 1½-litre cars and to the 1,100 c.c. and the 2-litre. Earl Howe's E.R.A. was fitted with De Ram shock-absorbers, retaining the normal half-elliptic springing, these wonderful shock-absorbers having been described exclusively in MOTOR SPORT when M. Bugatti adopted them for his 3.3-litre G.P. cars. Geoffrey Taylor evolved a system of all-round independent suspension for the racing Altas, using vertical guides and coil springs, and we believe that two cars have been built with this suspension and it has been applied at the front only to a third Alta by Bellevue Garage (Racing) Ltd. "Bira's" 1½-litre Delage was fitted with front independent suspension employing a transverse leaf spring and transverse swinging links above the stub axles, designed by Delahaye but built in this country, and the Conan-Doyle's 2-litre Delage was given a somewhat similar system, incorporating a divided tubular axle, but neither car was extensively raced. Riley have not developed their coil independent system, but E.R.A. are experimenting with independent *rear* springing for their Formula cars. Maserati used quarter-elliptic rear springing on one of the new four-cylinder 1½-litre cars, getting better road-holding than on the six-cylinder cars with half-elliptic rear springs. Maserati front independent suspension is by wishbone links and torsion arms beside the frame. Independent suspension seems universally to be appreciated, both as an aid to faster corner work and more comfortable riding. It was used for the first time for ultra-high speed work on "Thunderbolt," on all three axles.

Mercédès-Benz and Auto-Union have tubular frames. The new V12 Alfa-Romeo has a very low frame and independent suspension that does not appear to be of the Dubonnet layout formerly used by this marque. Merc. have the gearbox as virtually part of the rear axle, mounted on the frame, and Auto-Union drive the wheels direct from the gearbox engine rear-mounted power-unit. The Auto-Union has a short right hand gear-lever. Hydraulic brake actuation is almost universal, with provision for varying the braking effect and balance from the cockpit. E.R.A. have adopted Lockheed application working Girling plungers, the ribbed drums well exposed to the air stream, and at first experienced teething troubles. Bodies seem to have settled down to a fairly standard form, and Alfa-Romeo used a Mercédès shape body for the new V12. Driving vision is more important than absolute minimum head resistance, though Mercédès-Benz used offset transmission to obtain low seating on the record-breaking twelve-cylinder car. For record work almost enclosed cockpits have been used by Auto-Union and Mercédès, with enclosed wheels. For racing at Avus slots in the cockpit sides were used to provide a view of the tyres. Short distance standing start records are now taken at such high speeds that streamlining is now necessary in this field of activity and offsets the weight of the fairing. George Eyston's "Thunderbolt" had an "enclosing-everything" body when it achieved nearly 320 m.p.h., as had the Sunbeam that first exceeded 200 m.p.h., after isolated radiators, pencil leading-edges and cooling tanks between the wheels, snub-noses and surface radiators, and ice-cooling to permit of snub-noses, have all been used for this ultra-high speed work. We shall have to publish an article on the streamline question when space permits. Auto-Union and Mercédès-Benz use wind-tunnels to determine body forms, as did Sunbeam when building the V12 4-litre car for Segrave to attack the flying mile and kilo records in 1926—though they only evolved a slightly advanced edition of the road-racing body of that period. That racing carries research a stage further than theory was convincingly demonstrated during the German Record Week, when Mercédès-Benz were unable to participate effectively on account of their body design causing the front wheels to lift at about 248 m.p.h. This, however, lends strength to the rumour that they have previously used bodies for record work that made use of upward wind-pressure to reduce the load carried by the tyres. Our last year's contention, that parasitic and interference drag is now not much greater than that of skin-friction is borne out by the varnished exterior of the bodywork of the Mercédès that tried for records during the Record Week. Mercédès-Benz, on their road-racing cars, shamelessly use circular intakes in the leading cowling to admit air to the carburetter and oil-cooler. In sports-car races advanced streamlining has been evident, from the tank-like 3.3 Bugatti to the Delahaye, Talbot and Riley cars having wings with faired "boxes" behind the wheels and faired tails. Wings are ever an evil factor in racing and Delahaye have used inspection slots through which cool air can reach the front tyres. It is interesting that the completely closed cockpit makes no headway, though cockpits are given very large windscreens and streamlined head rests, and the sides are well enclosed. Even Eyston used an open top on his 320 m.p.h. runs. It would seem that on short distance flying start record work an enclosed cockpit would be beneficial, as the large screens now necessary to deflect pressure from the driver's head add considerably to the parasitic drag. For this work Mercédès-Benz and Auto-Union use slots in the nose to admit air to the radiator, and as cowlings are considerably distorted by wind pressure difficult problems arise. For standing start records Auto-Union used a more normal nose-cowl. Mercédès carry out preliminary wind-tunnel tests on 1 : 2.5 scale wood models at the Stuttgart technical school, with wool flaps to show up eddy points. Auto-Union do wind-tunnel experiments with half full-size wood models at the Friedrichschafen aeroplane works, though formerly they used the big tunnel at Berlin airport. Complete enclosure pays and Major Gardner estimates that his M.G. Magnette would reach 170 m.p.h. with enclosed wheels, etc. Modern streamlining is a compromise between the two old schools of thought—razor blade narrowness or "flat-iron" low build. For Brooklands work variations of the original simple radiator cowling are popular, as on the Pacey-Hassan, Barnato

THE TREND OF DESIGN—continued

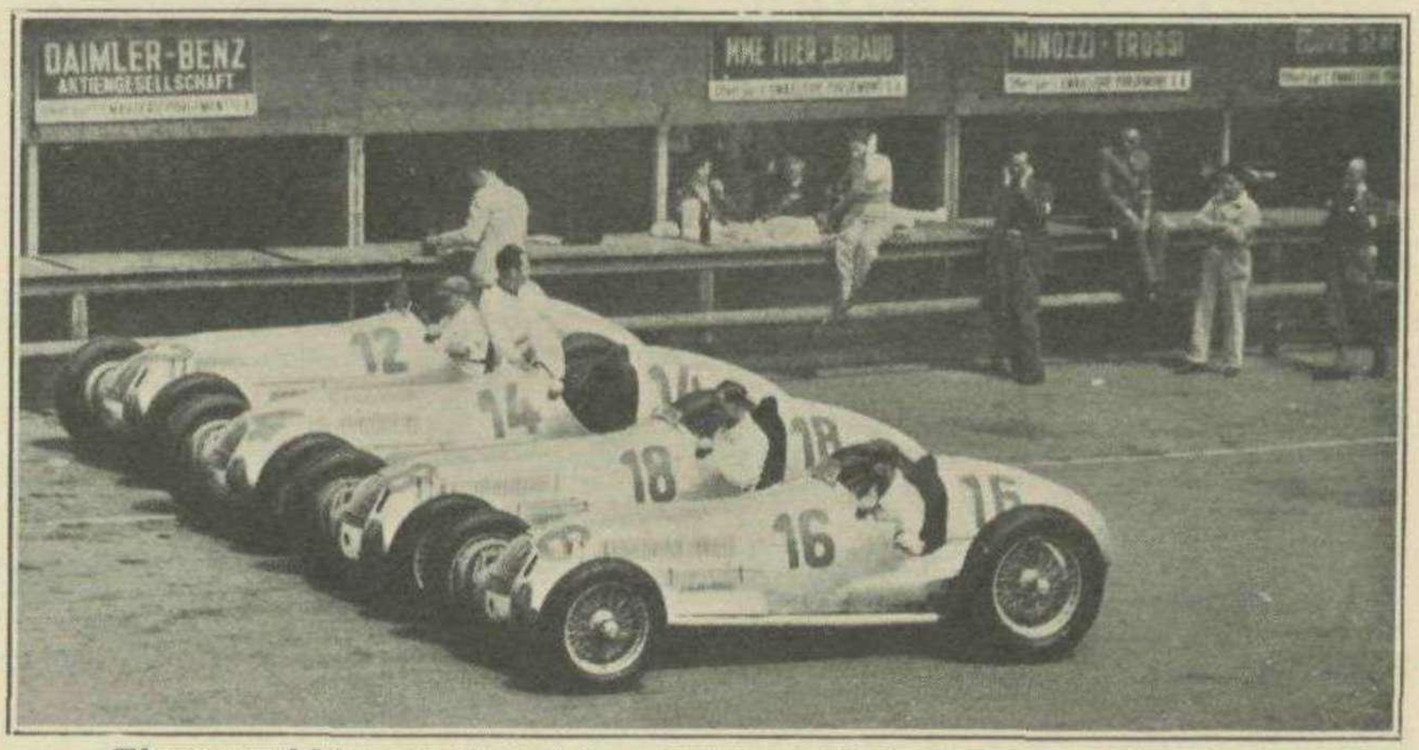
Hassan, Dunham's Alvis, and Bowler-Hofman, etc.

In 1936 E.R.A. were handicapped by having to stop to refuel their 1½-litre cars in the 200-Mile Race, but have since used larger tanks. The problem is not so much a matter of increased weight, for often the tank constitutes part of the tail, but centres round loss of performance in the early stages of a race owing to weight of fuel and the difficulty of rendering large light tanks reliable under racing conditions. Modern G.P. cars give about 5 m.p.g. and smaller-engined racing-cars rather less. Modern classic races are usually contested over a distance of slightly more than 200 miles, so that over 40 gallons of fuel will be required to ensure a non-stop run. This represents about 15 per cent. of the total weight of a Formula car, and about 20 to 25 per cent. of the total weight of cars under 1½-litres Another aspect is the effect on road-holding as weight diminishes towards the end of a race and here Auto-Union contrive to use a centrally-located tank, thanks to their rear-engined construction. Even so, they appear to start with these 50 gallon tanks less than half full. Stops are in any case necessitated for change of tyres every 100 to 150 miles at racing speed on courses such as Nurburg and Donington, and refuelling need cause no additional delay with modern pressure apparatus. E.R.A. have evolved a very high-speed system for 1938. With smaller cars the problem is a considerable one, as tyres will last through a 200-mile road race. If there is any prospect of the car needing to stop, such as for brake adjustment, or topping up of oil or water, it may pay to start with 20 instead of 40 gallons of fuel, using smaller tanks and saving some 3 cwt. Tyres progress fully in keeping with conditions, and our own Dunlops compare very favourably with foreign makes. Germany has tried synthetic rubber, in accordance with her Four Year Plan, but did not do so at Donington. Record runs at over 300 m.p.h. would be impossible but for research undertaken at Fort Dunlop.

Interest still centres around the 1½-litre class, though such cars can compete reasonably in Formula races in future. Very large rear covers were popular at Avus. E.R.A. are generally accepted to be leaders in this class, being victorious last season in the South African G.P., Rand G.P., British Empire Trophy, Coronation Trophy, Avusrennen, R.A.C. I.O.M. Light Car Race, Nuffield Trophy, Picardy G.P., Albi G.P., London G.P., J.C.C. International Trophy, Berne G.P., 200-Mile Race, Phœnix Park Scratch Race and Imperial Trophy Race. It seems probable that the 1937 1½-litre cars were heavier than the original 1½-litres, which weighed about 13 cwt., as larger blowers were subsequently used. Lockhart's Miller still holds the flying mile 1½-litre record at 164.01 m.p.h., but E.R.A. may attack it this year. Major Gardner's one-way run with the 1,100 c.c. M.G. at 150 m.p.h. was a distinct high-light of last season, likewise Auto-Union's 254½ m.p.h. with a 6-litre engine.

Sprint records are becoming fantastic, Auto-Union taking the standing start mile at 138 m.p.h. Wheelspin is a real problem, as wind-pressure cannot be employed to assist adhesion at the start, when it is most needed, and with enclosed wheels and almost enclosed cockpits a driver finds it difficult to judge his throttle movements—we foresee long mirrors lining the side of the road by the starting line at Frankfurt next year!

Eyston used twin aero motors for his 320 m.p.h. run and it is significant that an open cockpit and rear-wheel drive were once again employed for this class of work though the eight-wheel chassis was revolutionary enough. Four-wheel drive must come and is likely to figure in the Napier-engined Reid Railton-designed car which Cobb is taking to Utah next September. Prodigious as is the cost of attacking over 300 m.p.h. records, the use of aero-motors in monster



The team of Mercedes-Benz before the Berne G.P. last year. Judging by the spectators, the engines of the cars have just been started!

frames is undoubtedly cheaper and more certain than developing smaller cars, as F. W. Dixon has in view and as Dr. Porsche is rumoured to have completed, on his drawing board. There is likely to be renewed activity in this sphere of endeavour very soon, as Eyston is modifying his car and America is said to be interested. Eyston used a positive clutch-engagement, an idea suggested in correspondence on the subject of Land Speed Record cars by the present writer over ten years ago. The difference between 250 and 320 m.p.h. is apt to be underestimated.

Wheelspin is now a serious factor in G.P. racing, offset to some extent by the use of automatically locking differentials. It will be interesting to see whether four-wheel drive will be exploited with increased weight allowances under the new Formula, though this seems unlikely. Engines will probably run faster and be more highly boosted than formerly, with 3-litre units perhaps peaking at nearer 7,000 than 6,000 r.p.m. and giving upwards of 350 h.p.

In view of the interest occasioned by E.R.A. successes, it is significant to note that use was made of Wilson pre-selector gearboxes, Aero piston rings, Hartford shock-absorbers, Ashby steering wheels, Bosch plugs, Burman gears, Ferodo clutch and brake linings, Latex upholstery, Girling and Lockheed braking, Scintilla magnetos, Shell-Mex and B.P. fuel, Smith instruments, Specialloid pistons, Tecalemit lubricators, alloys by High Duty Alloys Ltd., Dunlop tyres, and constructional work by Thompson & Taylor Ltd., Vauxhall Motors Ltd., and Riley (Coventry) Ltd. Premises were opened at Brooklands and the chief works are at Bourne. The 1½-litre class will not be hampered by the new formula, as few cars are yet down to the imposed weight minima. E.R.A.s will continue active therein and Maserati will modify the existing 1½-litre sixes.

Briefly surveying things in general, Rileys have done very well with unblown racing engines, Maclure's Crystal Palace achievements being outstanding, the engine's cylinder capacity having been very materially increased throughout the season. Capt. Eyston has taken world's long-distance records with his Rolls-Royce aero-engined front-drive "Speed-of-the-Wind" which was remarkably free from teething troubles from the commencement.

At Brooklands the usual miscellaneous entry has broken all records. In spite of the pessimists, outer-circuit work has not been entirely neglected, Major Gardner's M.G., the Duesenberg, Richard Marker's Bentley (with new chassis), Cobb's Sunbeam, the Pacey-Hassan, Napier-Railton and Graham-Paige reappearing, while the Barnato-Hassan also reappeared to win a short handicap at over 128 m.p.h. and the Bentley engined Bowler-Hofman is a newcomer amongst track cars. Harvey-Noble concentrated exclusively on outer-circuit work and broke the Class H lap record at 122.4 m.p.h. with a specially streamlined single-seater M.G. The B.A.R.C. will continue to hold track races next season and there is scope for new cars built for the job, with low-speed engines, cockpits faired in more than is desirable for road-racing, and long-wheelbase chassis to secure good track-holding qualities. The valve of the aero-motor in this field was again demonstrated by the Napier-Railton.

Continued on page 97

NATIONAL INFLUENCES ON AMERICAN CAR DESIGN

ON February 1st, Maurice Olley, late of Messrs. Rolls-Royce, Ltd., and now with Messrs. Vauxhall Motors, Ltd., read his paper " National Influences on American Passenger-Car Design " before the I.A.E. It was a refreshing paper, digestible in the main by non-technical mortals, and an interesting sequel to Maurice Platt's paper on British design influences, reported in our December issue. The series will later be completed by Brian Robbins's paper, " Some Impressions of Germany, its Roads and Cars." We herewith report Mr. Olley's paper in condensed form, editorial comment appearing within brackets.

The author first traced the history of transportation in the U.S.A., from the time of the original American citizens who started life in the midst of a whole mass of emergencies, clinging to the edge of a wilderness several sizes too big for them, desperately short of money, and lacking in arts and crafts. From such triumphs as the river steamer, the cotton gin and the McCormick reaper they learnt they could develop a mechanism to meet every need. The first fifty years is a history of water transport. The railroads then moved in from the Atlantic sea board. The farming community spread outwards fanwise, refusing to confine themselves alongside the railroad. The problem of feeding the railroad was met in Great Britain by extravagant, full-gauge branch lines, in France by metre-gauge light railways, in the States by horse and buggy. The automobile became the " horseless buggy." From the start of the Oldsmobile by R. E. Olds in 1900, American automobile leaders with vision have had the common-sense idea of supplying a lot of people with a lot of transportation at the lowest possible price. Henry Ford was not the first, but he achieved the most successful vehicle for replacing the horse-buggy, the model T-Ford, which really " motorized the earth." The Oldsmobile of 1901 sold for 650 dollars and 4,000, all alike, were built in 1903. From 1903-5 Cadillac built 16,000 one-cylinder cars and from 1905 onwards 67,000 four-cylinder cars of one model. Ford built 15,000,000 model T-Fords from 1908 to 1927. These figures represent a fine achievement—to provide real and universal transportation first to a nation, then to the world at large. The author quoted them a little regretfully as representing something far removed from the present situation with its constant changes in tinware, a yearly succession of new and more startling " noses " and a constant fiddling with instrument boards. The American industrialist likes to develop a market rather than just to supply a demand. He makes enormous profits or enormous losses ; but he doesn't care very much because he is in the game for the fun of it. [Truth is ever stranger than fiction !]

The motor industry started, very fortunately, before there were any roads. It went through an interim period when all American cars were arboreal in their habits, adapted rather for climbing trees than for ordinary use. [Our small sports-cars seem to be in such an era to-day.] About fifteen years ago road programmes began to catch up and design changed rapidly to meet improved road conditions. These roads were expressly built for running motor-cars, not for playgrounds, bicycle tracks or car-parks. They were not designed merely to give delightful vistas for landscape artists or amateur photographers. The greater part of the road mileage varies between a complete absence of anything to look at and the extreme of depressing ugliness. The driver is not tempted to loiter. He attends to his business, goes where he is going, and if he stops for any reason he jolly well gets off the road. [Perhaps we should be thankful for thousands of miles of roads entertaining to drive over. Modern highways are either very dull, or, like the Kingston By-Pass, modern in name only. The late Sir Henry Segrave warned us of the drabness of straight arterial highways and universal traffic control over ten years ago. See " The Lure of Speed."] No American motorist is going to drive aimlessly about for the doubtful pleasure of looking at a lot of waste land and billboards. Since there is nothing to distract his attention he expects to be comfortable. He also expects the interior finish to be easy on the eye. And, since he is human, if some of the passengers are easy on the eye also, this serves to distract his attention—sometimes disastrously. [Which seems to contradict the earlier statement that the American motorist attends to his business and goes where he is going without loitering, though it may explain why if he stops he, as Mr. Olley has it, jolly well gets off the road.] The outside air is generally uncomfortable, hence the universal adoption of closed cars and absence of sunshine roofs. Motor-cycles are left to the police. The American car is distinguished by its uniformity in engine-size, weight, wheelbase and passenger and luggage accommodation—essential where a day's journey between major cities is 300 to 500 miles. Many children have never travelled by train. They drive themselves or " thumb their way " from coast to coast. The average American pays £100 to £240 for a new car. The average comes out at 1/- per lb. out of which the maker gets about 8d. per lb. New cars are coming out at the end of the lines at an average rate of about twenty-five per minute. They resemble bright new pennies because they all look alike, so that it is difficult to decide whose production line is being watched. But there is no difficulty in recognising that they are 1938 cars, or '36 or '37 as the case may be. The wise man who buys a 1938 car shall not be confounded for the poor misguided chump who bought a vehicle of say 1936 or 1937, when, naturally, the industry being in its infancy, the product was very defective. [British manufacturers who have shown a tendency to ape U.S.A. in the matter of " fashions " should shudder under Mr. Olley's sarcasm.] If the speedometer last year resembled a slide rule, this year it must be made to look like a grandfather clock, or vice versa. Car " noses " are developing along lines of increasing frightfulness. This may well continue until children wake shrieking at night from dreams of daddy's new automobile [if indeed, the children are not case-hardened by looking at the photographs in the American illustrated papers.]

Every American car is the product not only of its own engineers alone, but also of eight or ten engineering departments maintained at the expense of suppliers. Without this, the constant and rapid progress and succession of yearly model changes would be impossible. This factor also explains to some extent the family resemblance of all makes of American car of any one year's production. If last year's " nose " was aquiline and this year's " nose " is retroussé, there is the ever-present danger that the owner of last year's car, having inured himself to its appearance, may refuse to consider a retroussé " nose." If so, the chief engineer is to blame. On the other hand, if he goes on turning out aquiline noses, he is obviously beginning to stagnate. At 8d. per lb. for the finished product, no chief engineer's life is a happy one. Also, he has to live in four years at once. The assistant engineers at Detroit to-day have forgotten 1938. They will get rid of 1939 by the end of March, and their present real interest is 1940. But the chief has 1938 teething troubles in his lap, has to see 1939 out by March, must prevent the boys going hog-wild in 1940, and is getting started on 1941.

Speaking of design, the author said that running boards are gradually disappearing, leaving traces of the grin of the Cheshire cat in " Alice in Wonderland " ; the gear-lever has risen from the floor to temporary resting-places here and there about the steering column ; engines have become monolithic lumps of cast iron ; carburetters have been turned upside down and fastened to the roof ; sparking plug gaps are now measured with a foot rule instead of a feeler ; wheel diameters have shrunk from 25" to 16" ; tracks have passed the 5 ft. mark and are still growing ; and rear passengers now ride on the car instead of behind it. Most American cars at three passenger load now put nearly equal weight on all four wheels. A driver pays the engine the supreme compliment of ignoring its existence. The author had ridden with chief engineers of factories producing " sixes " and " eights " who could not say which they were driving at the moment. [Good for somebody's " six " or bad for somebody's " eight."] Most engines develop 100 h.p. or a bit more. The loaded car weighs 2 tons. Maximum speed is 80 to 90 m.p.h. actual. Cruising speeds are 45 to 65 m.p.h. for hour after hour, at over 3,000 r.p.m., with air temperature in excess of 100°F. Carburation must be fully automatic, meeting a range of at least 130°F. and up to 10,000 feet altitude. American cars must rank as high performance vehicles without being in any sense " sports-cars." They must be completely silenced and have roomy closed bodies built high enough for good road vision. Their low-speed traffic performance must be effortless in high gear. [In defence of the designation " sports-car " we commend to Mr. Olley the 4½-litre sports Bentley.]

NATIONAL INFLUENCES ON AMERICAN CAR DESIGN—continued

Mr. Olley concludes a sensational paper by very valuable technical references to road-holding and suspension, grouped under the headings of Riding, Rolling, Handling and Motions of the Unsprung Masses. While a new model was announced to the public the poor engineers were wondering if it would stay on the road. Aircraft engineers got busy from the very start to find out how their vehicles actually operated but the automobile industry went on for thirty-five years with no real conception of the complete vehicle. Blind, sharp corners are quite rare in the States. The sensation of trying to cheat a little and then having to tumble over a roof-ridge of a high crown road in a hurry, to squeeze past an approaching truck, is not one of the normal American's driving experiences.

There is as much prejudice in the States against a car which rolls too little as there is here against too much roll. "Softer" cars give audible warning before skidding. The author finally concludes by saying that his picture may be a little exaggerated in some spots and a little vague in others [a fair and brave admission]. He says nothing about future tendencies for fear of prosecution under the Betting and Gambling Act, but does mention possibility of chassis frame elimination and says the average output of over 3,000,000 American vehicles annually will pay for considerable development work.

THE TREND OF DESIGN—continued from page 95

Home brewed racing cycle-cars have rather surprisingly shown their ability to hold their own with multi-cylinder jobs in sprint events, notably J. V. Bolster's twin J.A.P. engined "Mary" and J. G. Fry's V-twin Blackburn-engined Freikaiserwagen, with Morgan independent front springing. Development of such cars ceased about 1924 as G.P. cars took the field, and they were thereafter purchased cheaply by youthful enthusiasts and regarded mainly as a joke. More recently much good money has been spent on them, with very beneficial results.

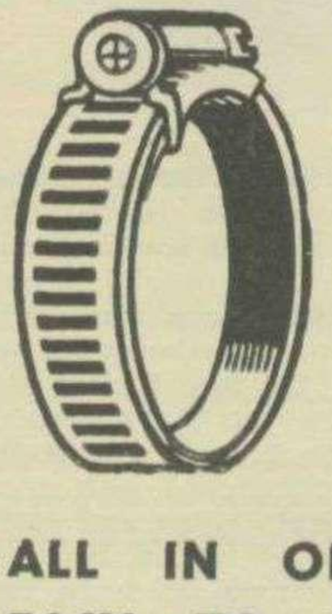
Diesel records are recognised in a general diesel category, but much good should result from the institution of diesel class records, to encourage development of the smaller units, the Perkins engine used by R. J. Munday in 1936 for record work being "hotted" to give increased output just as is a petrol engine, as outlined in an interesting booklet issued by the makers.

Perhaps the R.A.C. will make a deputation to the A.I.A.C.R.? In the 750 c.c. class the o.h.v. Austin Sevens were outstanding in sprint, track and road-circuit contests, and Gordon Brettell's very light Cozette blown Austin Seven, supercharged at about 9 lb. and built largely of R.R. 66 alloy, was well to the fore. It was constructed by the Monaco Motor and Eng. Co. of Watford. Bellevue Garage (Racing) Ltd. developed a K3 M.G. Magnette to lap at 124 m.p.h. Special cars have been built in considerable numbers for sprint work, notably Semmence's A.C.-engined job. The Appleton-Special, Eccles-Special and Brooke's M.G.-Riley have run in important racing events. Frazer-Nash-B.M.W. have competed successfully at Brooklands with fully-equipped Type 328 Frazer-Nash-B.M.W. sports two-seaters and a team of T-type M.G. Midgets won the Donington 12-Hour Sports-Car Race, modified in respect of larger Luvax shock-absorbers, Duplex Hartfords on the front axles, 7.25 to 1 compression ratios flexible external oil-pipes, and aluminium bonnet panels.

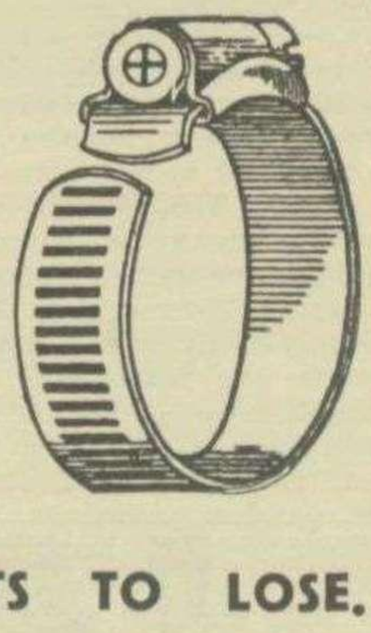
On the whole, therefore, the past racing season has not been a slack one and much of value has been contributed to the world's automobile engineering knowledge. The majority of us probably prefer to follow racing in general, with particular interest attaching to the fortunes of certain individual marques or drivers, but, even so, a once-yearly survey of the purely technical outlook does not, we hope, come amiss. Those readers who are particularly interested in this aspect of motor sport are advised to study the foregoing information in conjunction with the article on the same subject which we published in January 1937. Next January it will be extremely interesting to look back on the developments resulting from the first season's activity under the new Formula, possible trends of which have already been discussed in MOTOR SPORT.

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Club News

U.H. & U.L.M.C.

The annual Cotswold Trial, which has earned a high place as one of the better trials embracing sensible hills and attracting a varied entry, was run off on February 6th. There were thirty-one entries, including A. F. Scroggs (touring Trojan), I. K. Nixon (Austin Seven), J. H. Plevy (Gwynne), G. N. Mansell and C. A. N. May (M.G.s), N. V. Terry (Frazer-Nash-B.M.W.), J. F. Alexander (12/50 Alvis), P. A. L. Meyratt (1,066 c.c. Ford saloon), A. D. C. Gordon (Ford V8), H. W. Inderwick (Batten-Special), C. L. W. Barker (Jensen), F. D. Gilson (Allard-Special), G. Crowther (Triumph), P. R. Southall (sports 1,608 c.c. Standard), B. D. Goodman (M.G.), W. Boddy (Ford Eight saloon), two Morris Minors, and a 570 c.c. Fiat. On the first hill, Stanscombe, there was a re-start test, in which best car time was made by G. A. Ruddock's T-type M.G. Nixon (Austin), Gordon (M.G.), Gordon (Ford), Fellows (Wolseley Hornet), Barker (Jensen), Rawlings (Singer), Crowther (Triumph), Boddy (Ford), and Sarginson (Morris) were failures. Next came Bismore, an untimed observed climb which failed Nixon (Austin), and Sarginson (Morris), while the Gwynne retired. It was followed by Mackhouse, where 5 secs. were allowed to cross a line from rest, a test which failed Nixon, Alexander (Alvis), and Gordon (Ford V8). So to the redoubtable Nailsworth, where all the motor-cycle entries, bar Cheshire's Ariel, climbed clean, followed by C. A. N. May (M.G.), Terry (B.M.W.), Meyratt (Ford), Milburn (M.G.), Inderwick (Batten), Gilson (Allard Special), and Russell (Morris). Ham Mill was the next hill, where a timed test was held on the lower reaches, in which best car time was established by May (M.G.). Some rousing ascents were seen, notably Boddy's effort with the Ford saloon, after a baulk on his first run. The failures were :—Nixon, Ruddock, Alexander, Gordon, Rawlings (Singer), Crowther, Southall, Sarginson, and Lester (Morris). Station Lane was in two sections and everyone failed to negotiate the final bank, save Polden (Triumph motor-cycle) and Head (Enfield motor-cycle). The first section failed Nixon, Boileau (M.G.), Ruddock, Alexander, Gordon, Rawlings, Crowther, and Sarginson. The last named had the silencer of his baby Fiat damaged on Ham Mill, and the engine now sounded unhealthy, while Boddy came up fast and left the road for a small forest at a left-hand bend, but continued to the final rise non-stop. The Jensen had retired with engine trouble and Gilson had blown a gasket on the Allard. Finally, Old Hollow stopped Scroggs, Nixon, Boileau, Gordon, Ruddock, Alexander, A. Gordon, Inderwick, Fellows, Gilson, who eased up as boiling water smote him, Rawlings, Crowther, Southall, Burton (M.G.), Boddy, Sarginson, and Lester. In the timed test best car time was made by May's M.G. So a fast run back to the "Cotswold Gateway" completed a very sporting trial with the right sort of hills in a route of 98½ miles. Most of the competitors used ordinary tyres and thereby gained five bonus marks. First-class awards were won by C. A. N. May (M.G.), N. V. Terry (B.M.W.), and A. Milburn (M.G.). Second-class awards : P. Head (Enfield motor-cycle), P. Meyratt (Ford saloon), E. Lloyd-Jones (Ford V8) and W. Russell (Morris). Third-class awards : J. P. Boileau (M.G.), H. Inderwick (Batten), F. Gilson (Allard-Special) and G. H. Burton (M.G.). The Hospitals Cup for best performance : J. Polden (Triumph motor-cycle).

The next event will be one of the excellent club Donington meetings on May 21st.

Hon. Secretary : R. C. Hogarth, 42, Torrington Square, London, W.C.1.

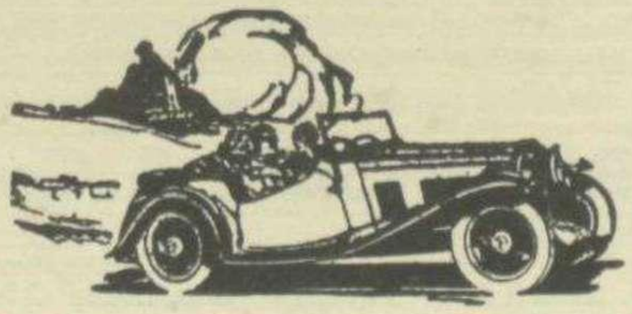
FORD ENTHUSIASTS' CLUB

A driving-test meeting was held at Knatt's Valley, near Farningham, on February 13th, nineteen competitors being present in spite of arctic weather. Results were based on the average of each competitor's best run in a parking-bay test, figure eight test and the old Monte Carlo test. The class for Fords up to 10 h.p. was won by P. A. L. Meyratt (1,066 c.c. saloon). That for Ford V8s went to Soames, driving a V8 two-seater, and the class for other makes to T. L. Allard, driving a special Ford Nine.

On March 13th a very ambitious Croydon Rally will be held at the Autodromes School of Driving, South Croydon, commencing at 12 noon. Various tests, similar to those staged by the J.C.C. at their Brooklands Rally, will be run through, designed to provide an excellent test of cars as well as drivers, and including a 300 yards acceleration test. The event will be divided into classes for Fords and other makes and run under Closed Invitation Permit. Spectators will be admitted for a small charge.

Button-hole badges are now available at 1/6 each and distinctive car-badges at 7/6 each. Membership is steadily increasing and all Ford admirers are invited to apply for details. Subscriptions are 10/- for Social Members or £1 for full Members per annum ; entry fee 2/6.

Hon. Secretary : S. H. Allard, 15, Millbrooke Court, Putney, S.W.15.



BUGATTI OWNERS' CLUB

The annual dinner and dance at Claridges went off extremely well. Jean Bugatti addressed the assembly and promised that Wimille should bring the latest G.P. Bugatti over for the first Prescott hill-climb. Eric Giles then shot into view, in full racing attire, on one of the model electric Bugattis, and distributed the 1937 prizes. The Club's "Blue Book" of fixtures has now been issued, and extremely interesting data and an identification table of the various Bugatti models are included—Ettore has certainly built a variety of models. The January "Bugantics" contains an article on the Night Trial by A. F. Walsham, who drove a Type 43 ; the marks for the Victor Ludorum Trophy, won easily by C. W. P. Hampton, with a Type 55 ; article XIV of the "Bugatti Cars I Have Owned" series, describing R. A. Cookson's cars ; a humorous article by Eric Giles ; and an article on 100 m.p.h. sports-car claims by W. Boddy. Another issue is due this month. The Opening Rally on April 10th will comprise an assembly at Cheltenham for lunch, followed by a run to Prescott and possibly timed runs up the hill, followed by tea at the Prescott club-house. Prescott will be ready for the first official meeting on Sunday, May 15th. 3.3-litre Type 57S cars have been ordered by Col. G. M. Giles, C. W. P. Hampton, R. B. Pope, Pearce-Jones and two other members, and Earl Howe is using the Show 57S coupé. Col. Giles's body will be a Corsica open two-seater, and a closed body for one of the other 57S cars is being built at the Corsica works. Lemon-Burton and Arthur Baron will race 3.3 G.P. Bugattis this season.

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

E.R.A. CLUB

A film-show was held at the St. Stephen's Tavern, Westminster, on January 31st, after the annual general meeting, which was a great success. George Monkhouse, of Kodak Ltd., showed us some of the Mercédès-Benz film, together with some intimate shots of the late Berndt Rosemeyer which were due for dispatch to Germany the very next day. Anyone who is in the least intrigued with modern G.P. cars and the thorough and enthusiastic organisation of Grand Prix races on the Continent cannot fail to be vastly impressed by this film, much of which is in colour. There are some very instructive shots of Caracciola and other aces cornering and the particular film shown to the E.R.A. Club demonstrated the amazing nervous vitality of Rosemeyer very clearly. Monkhouse, who drives a fine open 4½-litre Bentley, gives a quite inimitable and intensely enjoyable commentary.

Hon. Secretary : S. H. Green, 391, London Road, Thornton Heath, Surrey.

Tush, Mr. Mercury, you did give me a start!



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CLUB NEWS—continued

VETERAN CAR CLUB

A nicely produced magazine is now issued quarterly. It deals rather more with the "museum" side of veteran car ownership than with the practical and adventurous aspect beloved by vintagents. We hope future issues will describe members' cars in some detail, with particular reference to their place in the scheme of things at the time when they were new cars and notes on any troubles and running characteristics now experienced that correspond with those remembered by the pioneers. The first issue, published in January, contains much interesting, historical material. The Editor is St. John C. Nixon. The Club will hold its Opening Rally and Tilburstow Hill-climb on April 9th; a Rally and Trial (really a *reliability* Trial!) on June 18th; the Ramsgate Rally and Speed Trial on July 8th-9th; a Rally and Social on August 13th; a Rally and Trial on September 17th and the London-Brighton Run under the R.A.C. on November 20th. The rallies are excellent as a means of showing the excellent condition of these old cars, while providing unlimited adventure for those who crave it.

Hon. Secretary: Capt. J. H. Wylie, 38, West Cromwell Road, Earl's Court, S.W.5.

INVICTA C.C.

The annual general meeting was held on January 26th, and twenty members attended, including Alexander, Baxter, Baxter Junr., Blomfield, Boddy, Broadbent, Durston, Dyer, Evans, O'Gormly, Landon, Monro, Price, Rotherham, E. G. Whale and J. G. Whale, and the ladies—Mesdames Dyer, Landon and Monro.

The entry fee was raised to 10/6, making the annual subscription 21/-. Monro has presented the Monro Inter-Challenge Cup and O'Gormly and Broadbent a Victor Ludorum Cup. After the business was completed an excellent film show was given, mostly of Invicta and Bugatti Club meetings. The officers elected were as follows:—Hon. Sec.: E. A. R. Landon; Hon. Treasurer: H. J. R. Broadbent; Hon. Press Sec.: Donald Monro; Hon. Competitions Sec.: K. E. O'Gormly; Hon. Equipment Sec.: T. Rotherham. Committee: Messrs. Dyer, Durston, English, Whale Junr., Blomfield and Jaques. There are now fifty-six members, the latest being M. B. Howard-Williams, who owns one of the earliest low-chassis Invictas on record—chassis S20.

The February "Gauntlet," in two parts, contained a report of the general meeting, an account of a winter run from London to Barnsley in a 4½-litre A-type saloon, a long poem, and an article on the Sabie Game Reserve by D. W. Bishopp. The March issue will contain an account of the Welsh Rally, more Invicta topics and some comments on the Club by W. Boddy. The Welsh Rally seems to have been an interesting and stiff event but it suffered sadly from lack of support. There were seven entries:—Cann (Aston-Martin), Landon (1¾-litre blown Alfa-Romeo), Campbell (Invicta), Price (Invicta), Monro (Invicta), Dryden (Ford V8), and Kay (Rapier). Landon retired with electrical trouble, Cann for reasons unknown, Campbell ran late and retired, and Monro gave up after having steering and tyre trouble and hitting some sheep. Dryden and Kay were non-starters. The only award, a Premier, went to Price's Invicta. The Club retains its Inter-Challenge Cup.

Hon. Secretary: E. A. R. Landon, 90, Gloucester Court, Kew, Surrey. Tel.: Richmond 0565.

MARGATE AND DISTRICT M.C.

The classic Wye Cup Trial on February 20th attracted an entry of fifty-one, and J. B. Thompson's Ford Ten was the only non-starter.

Excellent ascents of Vine Hill, a path up a steeply inclined field, were made by Hutchison (V12 Allard Special), Goodwin (M.G.), Soames (doorless Ford V8 coupé), L. G. Johnson (Frazer-Nash-B.M.W.), Rushbrook (M.G.), Zwick (Rapier), Montgomery (M.G.), Mount (M.G.), Symmons (L.M.B.), Hawkes (Batten), Baker (Ford Special), Lawson (Singer), Turnill (M.G.), Chard (Ford V8), Mrs. Wood (Singer), Parker (Lambda Lancia), Lanes (blown T-M.G.), Imhof (M.G.), Smith (Austin) and Shackel (Ford V8). A surprise failure was that of Allard, whose Allard Special failed low down with spin.

At Upinturn, an even steeper pathway up a field, the climbs succeeded a vigorous snowballing party. J. O. H. Siddall's T M.G. went early into bottom gear, picked a good path and got up. Then K. N. Hutchison made one of the most spectacular ascents of any trials hill we have ever seen, in his V12 Lincoln-Allard-Special. Johnson's B.M.W. was very neat, mostly in second gear, and Soames in his V8 Ford was very clean and polished, in driving ability if not in motor. Ken Farley got his H.R.G. high up and returned to lend a comp. tyre to Peter Clark who had burst one of his. This H.R.G. failed, high up, likewise Curtis's. The V8 L.M.B., the Batten, Wood's 328 B.M.W. and Baker's Ford made it, Hemmings's blown Vauxhall Ten saloon was immense, Burroughs (Ford) excellent and K. G. Moss's M.G. failed high up. Allard just failed to reach the summit. E. G. Smith, surely the John Bolster of trials drivers, changed to a lower ratio of his double gearbox high up and his tiny Austin Seven, which he drives holding the bodyside with one hand and steering with the other, just failed. Imhof carried spare tyres on the *front* of his 1½-litre special M.G. on some hills to aid steering adhesion and 5 cwt. of ballast in the back. Only Soames, Johnson and Hutchison gained first class awards and the "Tailwaggers" team—Hutchison, Allard and Soames—won the Team Prize. Soames was talking of racing a Bugatti at Brooklands and of a hush-hush special and Peter Clark favours a Lancia-f.w.d. Alvis rear-engined job for Shelsley.

The Club held their Broadley Cup Trial on Sunday, January 30th, over a new area, starting at Wingham.

In order to make a little variation from the usual proceedings a new method of starting was put into operation at the beginning of each observed section. Two lines were laid down 15 ft. apart, between which the cars were parked. On receiving the starting signal the drivers were required to leave the starting area in less than 6 secs. This innovation produced some surprising results, but the majority of drivers succeeded in complying with the regulations and times as low as 3 secs. were recorded.

The first hill, Park Wood Hill, a short grassy track on private land, proved very easy, and no failures were recorded. The climbs were all very certain and effortless whilst the V8 Fords seemed very slow and impressive.

The route continued to South Alkham where the muddy surface and the sharp right hand bend defeated all but three of the competitors, namely J. F. Montgomery, M.G., C. O. Jackson, M.G., and D. R. Mount, also driving an M.G.

The Special Test in the morning consisted of a Brake Test carried out downhill on a fairly bad surface. Here the fastest times were recorded by J. B. Thompson, Ford Ten, in 11.4 secs., and Mrs. D. I. Broadley, Singer Nine, in 11.8 secs.

Mount Ararat was the last hill in the morning, causing the downfall of five competitors, and the retirement of D. R. Mount, M.G. suffering from engine trouble.

After the Lunch Stop at Kernsey, the route continued through Dover to Great Farthingloe Hill which was divided into two parts and treated as two separate hills. The lower half caused no failures although the surface became badly cut up for the last few cars. The top half of the hill proved much more difficult, only six cars managed to reach the top, and two of these failed to leave the starting area in the required time. M. C. Bateman, M.G., had the misfortune to damage his sump which caused his immediate retirement, whilst L. T. Hollingsworth's Ford V8 came to rest with a rear tyre badly in need of repair.

The next two hills, Combe Hill and Wick Hill, each took toll of the competitors and it would have been difficult to forecast the winner at that point.

The remaining Brake Test, which was a little more complicated than the previous one, again produced some very good times, the fastest being C. O. Jackson, M.G., in 29.2 secs., and S. R. Seelly, Ford V8, in 30.4 secs.

The whole run concluded at Elham, where only one competitor lost marks for failing to arrive on time.

PROVISIONAL RESULTS

The Broadley Cup: Mrs. D. I. Broadley (Singer Nine).
Miniature Cup: C. O. Jackson (M.G.).
Silver Medal: J. F. Montgomery (M.G.).
Bronze Medal: J. B. Thompson (Ford Ten).

B.A.R.C.

The Opening Meeting, due to be run off on March 12th, was composed of a long and a short outer-circuit handicap, and a series of 3-lap Campbell Circuit handicaps. There is to be only one Mountain circuit race this season; the scratch Mountain Championship in October. We

CLUB NEWS—continued

shall rather miss these Mountain races, which were easy to watch from the Paddock in respect of starts and finishes and which called for very good acceleration and braking. But naturally the Campbell course is more interesting to both drivers and on-lookers. The Track will be extremely busy this year, with the Light Car Club's 250 Mile Campbell Circuit Sports-Car Race, foreshadowed exclusively in this paper, being added to the J.C.C. "200" and International Trophy Races, and B.R.D.C. "500." The 1938 badges display an Auto-Union trend.

The Vickers Bridge turn on the road-circuit, where Lord Howe crashed last year, is being modified. A tea-lawn has been cultivated behind the Club house, steps have been taken to avoid congestion in the Members' bar, and the Members' car park will be enlarged. £1 season tickets, covering admission to the Public Enclosure for all five B.A.R.C. meetings, are now available. Our oldest motor-course always manages to keep abreast of the times. Cars can be taken on the Track on most non-race days for a fee of 10/-.

Clerk of the Course: A. Percy Bradley, A.M.I.Mech.E., M.I.A.E., Brooklands Motor Course, Weybridge, Surrey.

HARROW C.C.

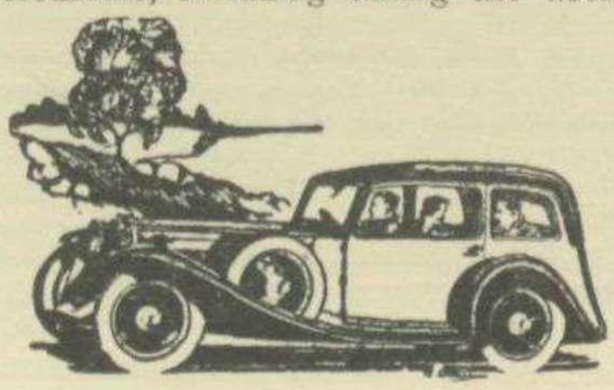
The Harrow C.C. staged a very ambitious Film Show at the British Legion Hall, South Harrow, on February 17th. After a film of the Bavarian Alps and another of the German Autobahnen, which showed these wonderful roads to be more winding and undulating than many descriptions suggest, though still ultra-fast, we had the "Rhapsody in Steel," that extremely clever and attractive film showing self assembly of a Ford under the supervision of the V8 fairy. An out-of-date Pathe Super Gazette, in which five unfortunate men in a crashed American bomber were described as heroes who had died while serving their country, and S. C. H. Davis introduced Capt. G. E. T. Eyston. Basil Eyston's film of record-breaking on the Salt Flats at Utah was then shown. This is an extremely fine picture, in colour, of a very high technical excellence. The whole story is shown, from arrival of the cars, test runs, the record runs, and the homeward journey embracing Hollywood. The shots from a Lockheed monoplane, and particularly that of a sunset from the air, reach a higher standard than anything we have seen previously on the screen. Eyston provided a personal commentary, in the course of which he omitted all reference to himself, but gave full praise to Denly, who seemed more at home at engine assembly than in the duck-shooting, in which the party partook for relaxation. Castrol "R" oil was used in the Rolls-Royce engine of the "Thunderbolt" and Dunlop Mac. had about eighty tyres to tend. After this Lord Howe, back from his South African victory, introduced George Monkhouse, whom he saw at Monaco clad in very short shorts and a bath towel, having a simply terrific argument with some gendarmes. Clad in more suitable attire Monkhouse gave a truly excellent commentary on his G.P. slides and the magnificent colour-film by Kodak, "Motoring with Mercédès." Some of his "stable information" is quoted elsewhere, but he also said that Lang is the fastest driver to-day, modelling himself on Caracciola, and in two years should be in the front rank. Caracciola starts with a visor on top of his helmet and somehow contrives to keep it there, Photographed looking at his rear tyres at 170 m.p.h. at Donington, Brauchitsch said "Yes, that's the only place where the car was straight!" Rosemeyer used his mirror at 140 m.p.h. and Monkhouse wished British road-users would use theirs. He also hoped he could photograph a pukka *British* Grand Prix team in future. A splendid evening.

Hon. Secretary: Paul Fowler, "The Three Horseshoes," Northolt Road, South Harrow.

GENERAL NOTES

The recent dismal winter weather has been enlivened by a Saturday on the road and at the always fascinating Track with the Leyland Eight, a run magnificent and memorable in a way that only a really big and fast car can render a short day's motoring something of more than passing interest. That quick journey in doubtful winter sunshine lost nothing by our having to leave the old Leyland in the care of T & Ts to have its gear-selectors sorted out, apparently as a result of over-exuberant changing to humour the stop-watch, but curious because the trouble was unheralded by noise or other signs of bother. A six-cylinder Railton saloon was reluctantly vacated by Weybridge Station, after it had demonstrated its extremely good suspension very convincingly along the aerodrome road, a trip infinitely preferable to that out along the Track to render aid to the Leyland, when T & T's hack Austin Twelve seemed likely to shake its radiator from the frame and to toss its bonnet over the roof, though, sadly, it did neither of these things. So we slept comfortably enough in a Southern Electric and de-trained at Waterloo to mingle with the mixed Saturday afternoon London crowds, feeling just a little superior to those around us, for only a few hours previously had we not been speeding round Brooklands in the keen air, in a car about which some extremely interesting information had been gleaned?

Then there was a run to the South Coast in a little D.K.W. saloon, all on one's own to pay an unexpected call on another enthusiast, a run enjoyable as an unplanned trip with a definite objective. In spite of heavy rain and half a gale that car was driven hard the whole way in a manner that was most satisfactory and Lewes was reached in 72 mins. from the time of passing Croydon Aerodrome, including taking the wrong



fork and having to hastily retrace our tracks. Thereafter the twisting road from Lewes to Seaford was taken in great fashion, slides controlled with gusto on the bends. Leaving in a gale which made steering really tricky we got to Brighton by 6 p.m. and were at Croydon again by 7.15 p.m., stopping to make a phone call *en route* and being treated to one of Crawley's prolonged hold-ups at its main-road level-crossing. That afternoon's motoring resulted in a very warm admiration for this little 6 h.p. car, which never exceeded about 55 m.p.h. yet put up these quite respectable averages, on account of excellent road-holding and handling qualities. Amid all this discussion about the badness of our roads, the writer is led to wonder whether there is really so much to worry about when a purely utility car, of very low horse-power and strange to the driver, is able to leave South London and get to the South Coast in less than 1¼ hours, repeating the process in the rain and darkness coming home. On an *Autobahn* we should probably have averaged 50 m.p.h., have used more fuel, and have wondered why on earth we had wasted time sitting in a car.

But until British cheap cars cling to the road like the modern Continentals there cannot, I suppose, be universal enjoyment of our winding English highways. Incidentally, it is interesting to reflect on how slow drivers annoy one on a trip of this kind, although they probably think they are motoring quite unoffensively; actually you are infinitely safer in spite of your hustle, because you are alert every mile of the journey. I recall that an old gentleman in a Vauxhall saloon sent me into a frenzy because he crawled through a one-way traffic lane and I nearly wept real tears when a Ford Ten stalled in my path at some traffic-lamps and when another Ford Ten maintained a steady 20 m.p.h. in the middle of a main road where 30 m.p.h. was both permissible and safe. It was interesting, too, to see the numbers of cars one passed by pushing the willing little D.K.W. up to 55 m.p.h. on the straights and 60 downhill, although the other cars had engines at least twice the size. It was gratifying, also, that I had such fun in complete comfort and for the expenditure of so little fuel.

Next, a very dilapidated but serviceable Austin Seven two-seater was coaxed to life early one Sunday morning and served to convey the passenger and driver to a garage at which a very fierce V8 Allard-Special awaited us. A hurried change on the driver's part into the correct driving-kit and we settled down to a fast run to Oxford, somewhat abashed at seeing the near-side front hub-centre sail away ahead of us in Shepherd's Bush Road, and rather flurried when we got completely lost between the Great West Road and Uxbridge, having been so intrigued by the masterful 70 m.p.h. bursts along the former narrow but sparsely populated highway, punctuated by vivid acceleration from the Belisha-lamps, the rev-counter swinging rapidly up to 3,500 and over with hardly a trace of effort beneath the bonnet, that we turned off far too late. On the familiar

CLUB NEWS—continued

Uxbridge Road at last, we ran warily through fog, developing a warm admiration for this short compact Allard-Special, which required no special skill to drive normally, the ignition control being automatic, the gear-shift remote controlled and synchromesh and the water thermometer steady at just below 160°F. Yet, as the mist lifted and the Oxford Road opened out before us, the Allard went up to between 70 and 80 m.p.h. quite naturally, without any suggestion of being forced. We ran slowly through High Wycombe's seemingly endless built-up area and found a Ford V8 coupé on our tail. It held us as we opened out up the long narrow rise thereafter and was still present at 80 m.p.h., but eventually we gained on it round corners and on acceleration, although not really trying, as we had not become entirely used to the car, which we had only driven a few miles many months previously. Really fast cars should be treated reasonably until you are thoroughly at home with them and it says much for the Allard that in spite of our unfamiliarity with it we could not believe our eyes when we saw the clocks in Oxford, for, including our initial deviations and the stop to retrieve the wheel centre, the average run was in the neighbourhood of 50 m.p.h. from East Putney. After this the remaining twenty miles to our destination at Burford seemed a mere nothing, so a visit was paid to relations, enthusiastic cyclists, who nevertheless displayed great interest in our trim and tidy and very imposing motor-car. On once more, holding 80 for mile after mile, to hand the car over to its rightful owner, after a trip which had very thoroughly blown away all the cobwebs, particularly the passenger's! Here we stalked about the "Cotswold Gateway" exuding keenness for the Allard, the silent purposeful acceleration of which is typically V8 and most enthralling, although Allard has removed all roll from the suspension, so that the car corners beautifully, the only suggestion of its light weight coming when the accelerator foot is suddenly lifted at speed. Allard says that the steering is a trifle vague with the big-section front tyres, but as modern steering goes we thought it quite in order. The fascinating aspect is, particularly, the way in which one can roll unobtrusively through towns in top gear without a sound and no trace of pinking, the smart modern appearance sending the police all smiles, quite belying the fierce motoring of which the car is capable out in the open.

We were at last persuaded to examine the Ford Eight saloon which was to be driven in the U.H. & U.L.M.C. Cotswolds Trial and then back to London. Oil, water and petrol were in order, so we contented ourselves with getting standard time on the now quite famous alarum-clock and tightening the wheel-nuts. Eventually, Hogarth sent us away, in a car which we had never driven before. However it displayed quite reasonable life, cruised at 50 or so on the clock, had a very rigid willing gear-change and was warm to ride in. Moreover, one became gradually accustomed to the changed visibility. After some familiar going we reached Stanscombe and waited carefully before the check, restrained by the alarum in the cubby-hole, refusing to be misled by others who turned down to the hill. As it happened a considerable delay was in progress and when our turn did come in the restart test I did everything very much all wrong, being unused to the clutch and unaware that the handbrake wouldn't hold. Enthusiasm rather abated, for I imagined we must fail on every hill after this most learner-like bit of malhandling. However, we got up the rest of the hill and, conscious that we were last, hurried on hopefully, after generously offering a worried fellow-competitor in a Morris-Eight a valve cap from any of our wheels only to be informed that they were each quite naked, though not leaking like his own.

Bismore caused our utility carriage no pother and by keeping the gas-pedal fully depressed throughout we thoroughly scared a marshal and ourselves at the first right-hand corner of Mackhouse, the Ford entering into the spirit of the thing by bouncing furiously, which just got us over the upper reaches. So to the illustrious Nailsworth Ladder, where we were respectfully reminded that our little saloon was merely an Eight of less than a litre capacity, with highish gear-ratios. Lunch we dallied over and then lost ourselves thereafter, so that much rushing about Rodborough and Mickle-hampton Commons followed, together with a drive up a hill barred by a railway level-crossing that seemed unlikely to open again that day. But at last we came to that very interesting acclivity, Ham Hill, up which, finding no marshals present, we made a rousing ascent, sliding nicely on the stony bends, only to find Marshal Marcus Chambers leisurely removing from the pathway a 570 c.c. Fiat. So down we went again, this time to be timed away, and to complete another successful ascent, not so fast as the previous one, but still, I am told, sensational to behold. Next came Station Lane, where we rushed upways with the engine screaming round, probably far beyond peak revs., to leave the road at a left-hand corner, motor with some velocity into a wood and, when we had re-discovered the throttle-pedal, out again and up onto a ghastly steep bank of churned mud, where the Ford decided to recline, in spite of the driver using its clutch pedal like a pump handle. Thereafter a long run in the failing light of a rather undecided winter afternoon brought us to Old Hollow, approached down a lane running ominously with water. Here we failed on the steep section near the summit and were propelled the remainder of the way by much man-power, and such mechanical horses as we could command, and transmit through normal rear covers. There remained only the 40 mile run back to Burford at a 28 m.p.h. average, which we did rapidly enough, lamps alight, tired but very well satisfied, rolling phenomenally on the reduced pressure in the back tyres, until a wayside garage inflated them to an immense pressure, as wayside garages invariably do.

The run home was quite uneventful, save that the writer was so tired that he imagined that the engine was falling to pieces, when, in fact, it was producing 55 m.p.h. very happily, which state of mind finally resulted in our getting completely and almost inextricably lost in familiar London thoroughfares. Definitely this Hospitals Cotswolds Trial is one of the saner trials, and as a result vastly enjoyable in old or ordinary cars. As another competitor remarked, there are no tree-bordered lanes to scratch the bodywork . . . For our part we appreciated the absence of slime and feel that, with the exclusion of the final rise at Station Lane (there is an excellent way round) and possibly the exclusion of the Ladder, this is an ideal course for a sane-minded enthusiast in a normal car. The Ford Eight, too, deserves its meed of praise, scorned though it may be by fast drivers. It is quite refreshingly lively, runs up to 55 m.p.h., has quite decisive steering, and is very economical, though we used cheap oil and fuel. Moreover, the clutch and transmission took heavy punishment but have shown no weaknesses since.

* * *

With trials in their present precarious position there is some reason to discuss the attraction of the Rally type of contest, so that the experiences of E. A. R. Landon in the Invicta C.C. Welsh Rally are informative as well as interesting. Landon drove a 1¾-litre blown Alfa-Romeo, and had had little previous experience of this class of event. Starting from Broadway a few minutes late under a brilliant moon on a cold clear night with half a gale blowing from the west, they drove straight through to Conway, arriving 2 hrs. 13 mins. early over a section with a 28 m.p.h. average. A long, cold wait followed before it was time to check in, when the Alfa refused to re-start and had to be pushed to the check, where it arrived 3 mins. late. The average was easily maintained to Festiniog and the drive to Bala was very pleasant, in spite of slightly icy roads over the mountains, a lot of sheep and a very cold wind. There was sufficient time in hand to take photographs of Lake Bala in the moonlight and to partake of hot coffee from a flask. Thereafter the route became very difficult to follow on account of an astonishing lack of signposts on many of the secondary roads. However, in company with a competing Aston-Martin, Lake Vyrnwy was reached and there was ample time in hand at the Cemmæs Road check. A free choice of route via Llanegan to Aberystwyth was permitted and Landon used the main route. He describes this run as one of the most enjoyable he has ever had, over good-surfaced, if bumpy, narrow, and rather sinuous roads in the growing light of dawn. Over the last 55½ miles not a single living thing was encountered and the driver established a personal average-speed record. Alas, fifty miles from Aberystwyth on the return route a burnt-out coil and faulty distributor resulted in retirement and a car had to be hired for the return to London, the Alfa being collected on the following Wednesday.

A JOINT EVENT

COMBINED TRIAL OF GREAT WEST AND KENTISH BORDER CLUBS IN SURREY AND HANTS

WHATEVER the outcome of the reform of reliability trials, now being deliberated by the clubs and by the R.A.C., it seems likely that the forthcoming season will see a number of "combined" events. These are different from the familiar "closed invitation" events, in which one club invites five others to compete in a trial, run entirely by the club issuing the invitations. In a "combined" event, two or more clubs agree to run an event on the same day over the same course, using the same marshals and the same general scheme, but not necessarily under the same regulations, or with awards in common.

The object is to have one substantial event, instead of a number of small trials on different days. Such trials have been run before the present era, but one of the first to be run as part of a concerted scheme to set trials in order was the event in the Petersfield area in which the Great West and Kentish Border clubs took part. These two clubs have in other years run separate events, for the Haward Tankard and the Stafford Clark Cup respectively, and the two were now combined. Identical regulations were in this case used, and the conditions for awards were also similar.

However, whereas the Haward Tankard was up for competition among Great West members, and was won by M. S. Soames, driving a Ford V8, the Kentish Border's Stafford Clark Cup had been allocated to another event. Actually this event provided an excellent example of the value of a "combined" trial, for almost without exception the entrants were members of both clubs, and could take their choice of the colours under which they preferred to run.

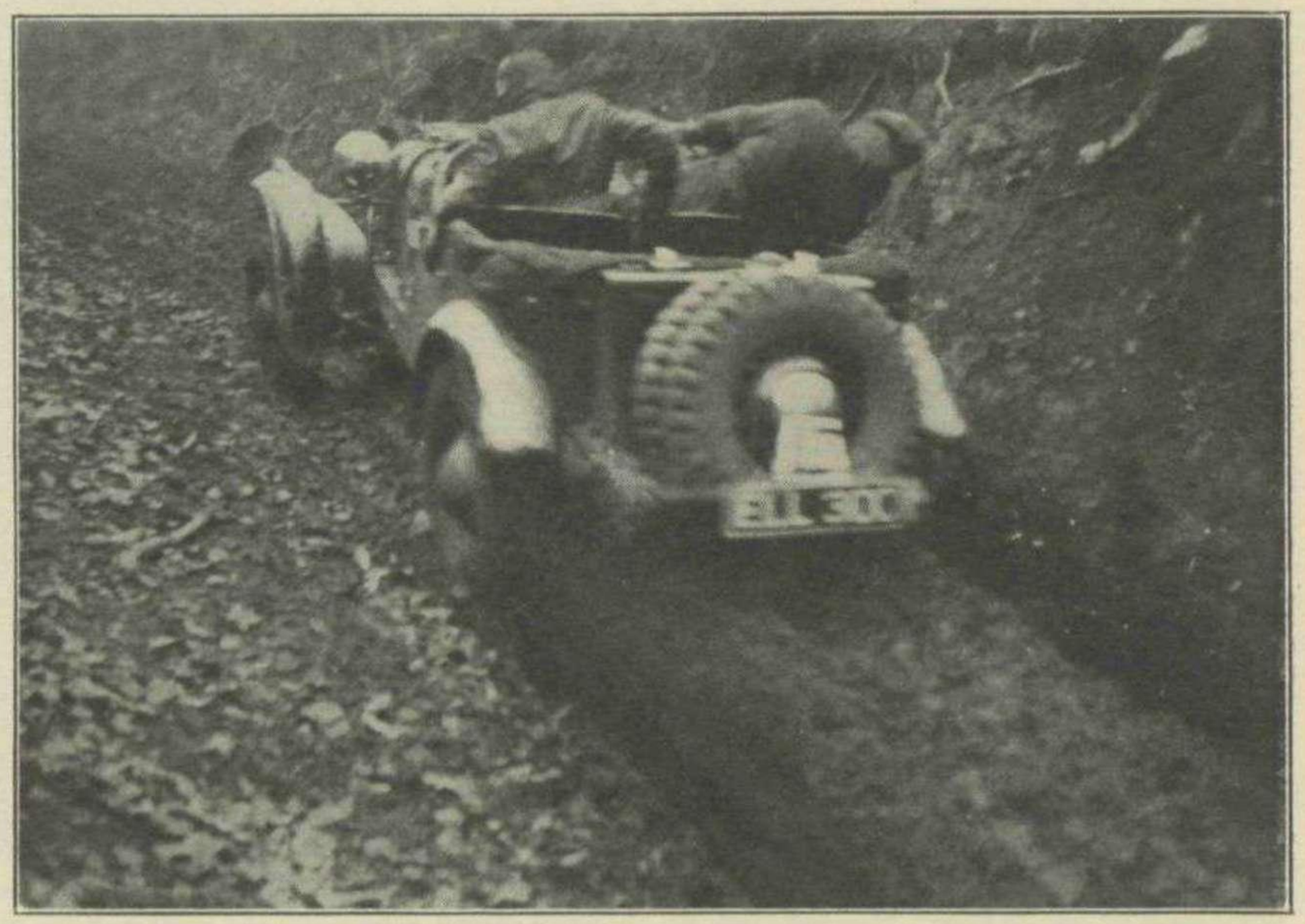
The old evil of clashing events again made itself felt, however, for, largely owing to the concurrence of another trial on the same day, the disappointing total of twenty-three entries had been received.

A notable feature was the entry of K. N. Hutchison with the very latest in "trials specials," the twelve-cylinder Zephyr-engined Allard Special. Hutchison had only taken delivery of this very fierce machine a few days before the event, and it was barely run in. It has an articulated front axle, giving independent front suspension, and his lady passenger expressed satisfaction that at last "Hutch" had got a comfortable trials car!

Competition tyres were allowed on all cars except those fitted with solid axles as standard. Non-standard solid axles were not permitted at all. Most of the hills were fairly dry, and Wick, near the start at Selborne, caused only two failures, whereas last year it provided great difficulty, having a grassy slope on which cars had to restart.

An acceleration test was held on Oakshott, where the peculiar surface, with a kind of paving of slippery cobble-stones, caused some unexpected results. Fastest time (12 secs.) was made by E. K. Farley with his H.R.G., and next came E. G. S. Cook's M.G. and M. S. Soames's Ford, with 12⅕ secs. The redoubtable Allard Specials—S. H. Allard himself was driving the older eight-cylinder car—displayed so much power that after terrific wheel-spin Allard took 15 secs. and Hutchison 15⅘ secs. Eight competitors lost marks on time.

Wheatham (sometimes called Unterturkheim) can in certain weather conditions be extremely difficult, but upon this occasion all cars sailed up it easily except for the unlucky C. E. Bushford's Morris Minor, which, with standard tyres, failed on all the hills, so that a merciful veil may be drawn.



Vigorous work by S. H. Allard (Allard Special) and his passenger in climbing Rake Hangar.

At Steep Hill, divided as usual into two sections, competitors had to restart right in the middle of the chalky gradient at the foot, but even with this added difficulty few were unable to get away. The top section, however, was notable for causing the failure of H. B. Shaw's Ford and W. L. Bennett's M.G., and spoiling their otherwise clean performances in the event. For the top section, too, cars were restarted in a difficult place, close to the S-bend.

The final hill was Rake Hangar, near Liphook, and here at last difficulty was met, and large gangs of pushers became exhausted. Hutchison made a splendid climb with the new Allard Special, and Allard himself went up at speed, churning mud behind him, though wheelspin caused him an anxious moment near the top. Farley, who had done so well with his H.R.G., burst a tyre, and pulled the valve out. In consequence, the wheel would merely revolve inside the tyre cover, and no engine power was available to help the pushers, who had a long task.

G. L. Burroughs, with a Ford-engined Special of his own design, made one of the best climbs of all, and Fotheringham Parker was also good with his Ford. No small cars succeeded in climbing the hill, and R. M. Andrews broke the crown and bevel on his M.G., and had to retire at the foot. This was bad luck, as he had had no previous failures, and had equalled Farley's 12 secs. on Oakshott.

The event finished at the Royal Huts Hotel, Hindhead, where the combined organisers excelled themselves in not only completing the event but issuing the full results before darkness fell. Soames, Hutchison and Allard were the only drivers to get through clean, but awards were made on a percentage basis from the two clubs.

Great West Motor Club

M. S. Soames (Ford), Haward Tankard and 1st Class. S. H. Allard (Allard Special), 1st Class. K. Hutchison (Allard Special), 2nd Class. E. L. Fry (Riley), Eldred Cup and 2nd Class.

Kentish Border Car Club

E. K. Farley (H.R.G.), 1st Class. R. M. Henning (Vauxhall), 1st Class. H. B. Shaw (Ford), 2nd Class. P. F. Parker (Ford), 2nd Class.

Team Award: S. H. Allard and K. Hutchison (Allard Specials).

The Yorkshire S.C.C. has issued neatly printed Regulations appertaining to its Closed Trials, supplementary regulations governing each individual trial being sent out just beforehand. This is an idea which should interest other clubs, as a means of considerably reducing printing expenditure.

ROAD CIRCUITS—NATURAL AND ARTIFICIAL

IN WHICH OUR CONTRIBUTOR WEIGHS UP THE PROS AND CONS OF ROAD-RACING CIRCUITS

A MOTORING writer who has attended more motor-races on the Continent than most people, remarked to me recently: "I don't know why it is, but specially built road-circuits never appeal to me as much as the good old circuits on public roads."

Now I myself have not had the years of experience of the aforesaid individual, who attended many Targa Florios in the days when those words meant something, but even with my limited knowledge of Continental circuits I was bound to agree with him—up to a point.

Perhaps it is unfair to quote the Targa Florio, for that was a race of races, unlike any other, held over a long and mountainous circuit in Sicily. The road was made of flint and gravel, with a not-so-smooth surface, and passing was a touch-and-go business amid clouds of dust—when it wasn't raining, which turned it to mud.

It is a matter of regret to me that I never saw a Targa Florio. Certainly that race had a flavour which could never be possessed or acquired by one on an artificial road-circuit.

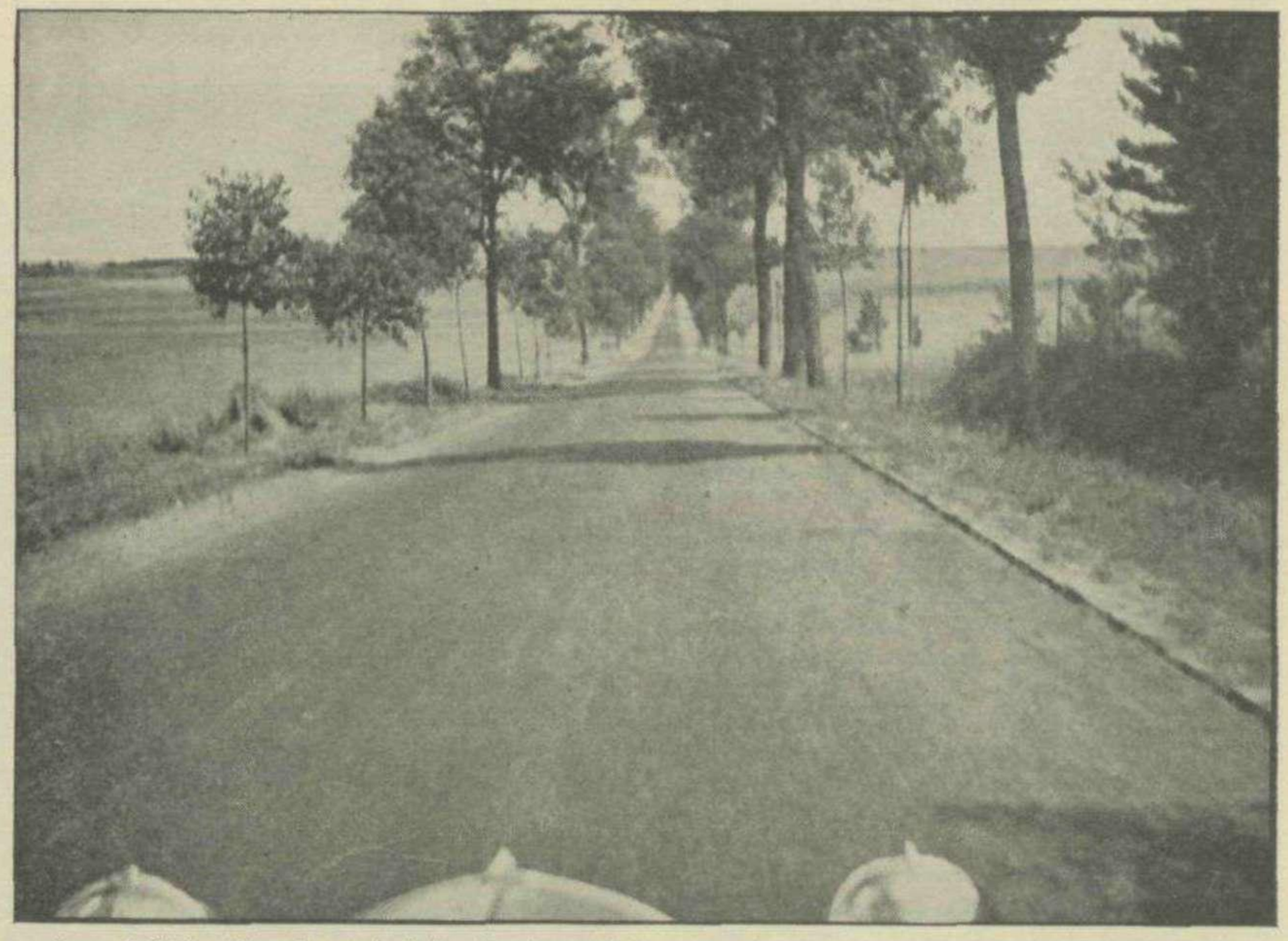
But to come nearer home, and to circuits that I and many other motor-racing enthusiasts have actually seen. Compare, for example, the artificial road-circuit at Montlhèry with that grand course on the ordinary roads at Reims. I have enjoyed watching races at Montlhèry, but not nearly so much as I have at Reims. To begin with, the *circuit-routier* near Paris does not look like a public road, any more than the Melbourne extension at Donington does. And it is not only the road itself that gives this impression, but the surrounding fences, safety banks, and other necessary adjuncts.

It is a thrilling sight at Montlhèry to see the cars wheeling round the banking and then tearing past the stands into the beginning of the "road." But can it compare with the spectacle of the Grand Prix "bolides" hurtling down the tree-fringed straight-leg at Reims, between fields of yellowing corn?

One can have a drink at Montlhèry while the race is on, but it is not the same thing as sitting in a village café at Gueux, with the cars passing a few feet away, or in the café at Spa alongside the hairpin bend before the stands.

That brings us to Spa, another "natural" circuit which has more atmosphere than many artificial circuits rolled into one. If you are lucky, you can stand behind a hedge (and some straw bales) at Spa and watch the art of high-speed cornering on a perfectly normal country road. And don't think that ordinary road circuits are slower than the artificial ones. Both Spa and Reims have been lapped at around the 100 m.p.h. mark. Perhaps the best sight at Spa, however, is that of the silver, red and blue cars streaking up the long hill soon after the start. They can be followed with the eye for a long distance, cutting out momentarily for the natural *chicanes* of the climb.

Nearer home still there is—or was—Dieppe. Many readers will no doubt remember what a magnificent sight was the start of the last race held there, seen from the cornfields along the straight. Blue, red and green projectiles leapt forward at the fall of the starter's flag, and hurtled up the long rise with a roar of open exhausts. Somehow the colours always seem brighter on a natural circuit, with the multi-coloured cars, the flags decorating the *tribunes*, the cornfields, green hedges, and blue sky. Telegraph poles, too, play their part in completing the realism of the scene.



A real G.P. Circuit. A driver's view of the "straight leg" at Reims. No artificial road circuit looks quite the same. This area was a battlefield during the War—hence the different sizes of trees.

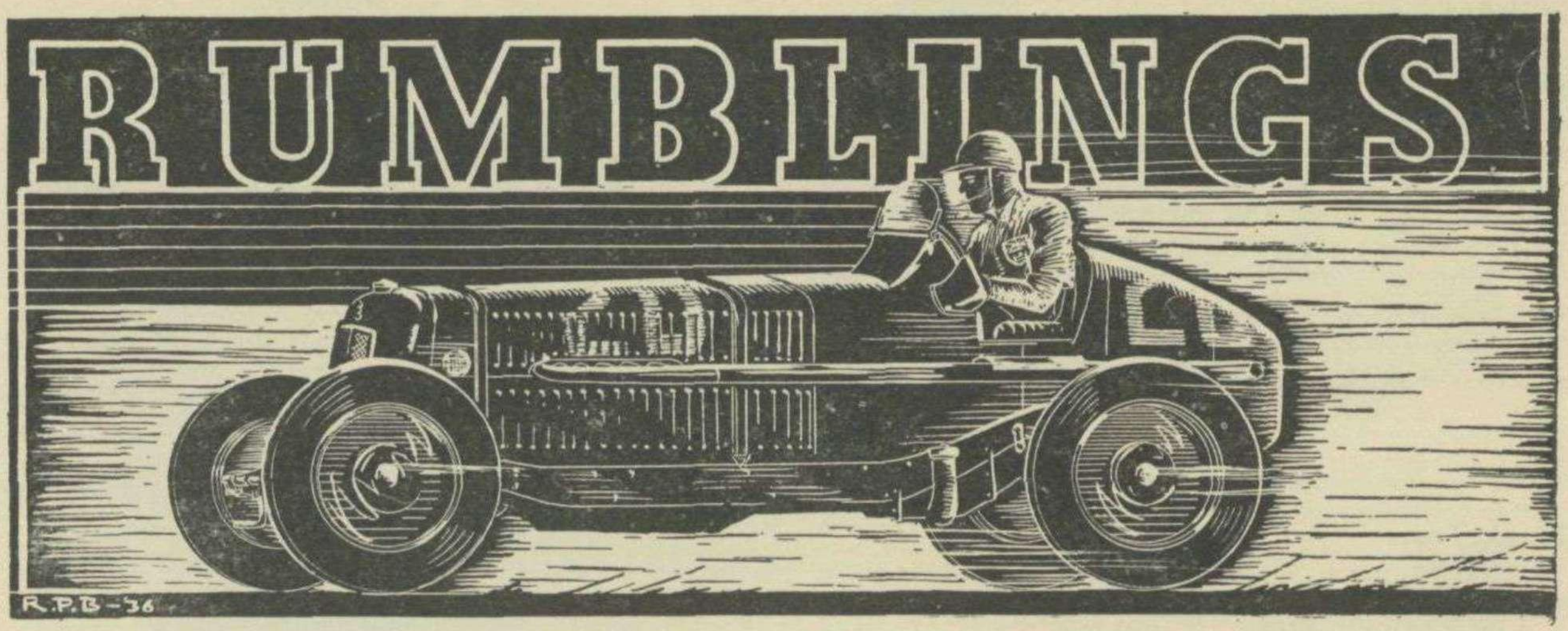
And what of Nurburg Ring? Well, personally, I would not call this an entirely artificial circuit, although in actual fact it was, of course, built expressly for motor-racing. It is something of a hybrid. The Startplatz, the North Curve, and the run behind the pits are all track, pure and simple, but after that the circuit does become extremely like a real road. What is more, the spectators watch from behind hedges as well as fences, and this gives the road a matured look. Occasionally one strikes another artificial patch—to say nothing of the weird Karusselkurve—but in the main Nurburg can almost rank with the real natural circuits on public roads. Perhaps the road-signs warning drivers of exceptionally severe corners have something to do with it.

Le Mans still retains much of the old-time atmosphere. Those parts that have been improved, however, wear an artificial appearance that has no appeal for lovers of the natural road-circuit, and this brings us to the advisability of too much alteration in road-circuits, for example, at Donington.

Donington, of course, is another mixture. Much of it looks like it was originally, the drive-ways of a country estate. The beginning of the Starkey Straight, just after Coppice Corner, is probably the stretch most like an ordinary road, while the new extension, the start, and Red Gate all look artificial. In order to make the course more suitable for high speeds, a good deal of widening is to be carried out. It would be pleasant if this could be done without making the place look too much like an artificial track.

After all this, I would like to say that I fully realise that, logically speaking, it should not matter the slightest whether a course is artificial or natural, so long as it permits good motor-racing to be held on it. Those in favour of artificial circuits have many advantages on their side. Particularly can they argue from the point of view of the safety of the spectators—although I seem to remember that the record number of spectators ever killed by one car stands to the credit or otherwise of Monza, an artificial circuit.

I have said that it should not matter the least whether a course is artificial or not. But on second thoughts I am not so sure. The French people will not hold their Grand Prix at Montlhèry; they prefer Reims. The Italians have given up Monza as a bad job, and now hold their Grand Prix on the public roads at Leghorn. The reason they do so is pounds, shillings and pence—or francs and lire.



A Bentley Specialist

I HAD the pleasure of paying another visit to McKenzie's premises behind Victoria Station last month. Just at present he is putting in a deal of work on Mr. Lycett's famous 8-litre Bentley, which is being prepared for more speed work, one special item being the fitting of light ribbed brake drums of R.R. alloy. An 8-litre open four-seater Bentley is being prepared for a client on lines which we described in Motor Sport just over a year ago, writing of another car. The engine is magnificently finished and the Corsica body has beautiful lines and a very ingenious disappearing hood. An interesting car at the works which Mr. McKenzie forgot to show me, until I made a bee-line for it, was a 3½-litre Bentley with an Arnott supercharger system, the compressor being very rigidly mounted, belt-driven, and drawing from an Arnott carburetter. Asked whether the result was satisfactory, McKenzie replied: "The speed has gone up from 93 m.p.h. to 106 m.p.h., the acceleration is naturally much improved, and a head tester from Bentleys was unaware that a supercharger was fitted when I demonstrated the car to him." Knowing what modern Bentley acceleration is like I would like to drive this motor. Another interesting car which McKenzie didn't even pause to enthuse over, but which interested me very much indeed, was an old-school Bentley, outwardly a 3-litre, in which he has installed a 3½-litre Bentley six-cylinder engine. At the Corsica works I saw a 3½-litre chassis which had been involved in a very bad crash indeed, and which McKenzie was rebuilding and rebodying. I was rather intrigued by the very compact, well balanced build of what seems a very big car in complete form. I was told that the mechanical servo brake gear is so beautifully made that it wears indefinitely, even if neglected, and only gives trouble if a hose is carelessly or innocently played over it, when the action becomes snatchy until the linings dry. Another little matter that McKenzie almost overlooked was that he has supplied quite a few "Phantom III" Rolls-Royce cars to clients. This Scottish engineer, you gather, is a very modest man!

The First 1938 Road Race

Our first road race for 1938 will be the Coronation Trophy at the Crystal Palace Circuit on April 2nd. We have remarked many times in this paper that Harry Edwards should have a successful season if he is able to continue to put up good prize money, and he is to be congratulated on offering some £500 for this meeting, with the three big prizes as last year, a fourth prize added, and a greater chance of gaining small prizes for completing given lappery which almost constitutes starting money. The race is now an International Fixture, the distance has been reduced to 20 miles per heat and 32 miles for the final, and a handicap evens things up between small and large cars. The winner gets the Coronation Trophy and £150. Late fee entries close on March 16th and practice is scheduled for March 31st, between 10 a.m. and 1 p.m.

Another highly praiseworthy effort is that of the Cork Grand Prix of April 23rd, details of which we published in the January issue. The Regulations, printed in both English and French, came to hand in the middle of February. Late fee entries close on April 4th at 1 p.m. The winner gets £1,000 and the Millfield Trophy and replica, and for this race alone there is £1,800 in prize money. This compares with a first prize of £250 and a total of £820 in Fred Craner's great Donington G.P. last year. Will the Continent please note that Britain is at last waking up!

* * *

Suspended

Reginald Parnell has been suspended permanently from racing by the R.A.C., following his accident at Brooklands last year with the M.G. Magnette, during practice for the B.R.D.C. "500." Mrs. Petre, who was involved while using the track at the same time in the Austin Seven, is now happily recovered. We are informed by the R.A.C. that the Press is not being given any information about their findings in this matter and that representatives of the Press were not

RUMBLINGS—continued

present at the meeting or at that during which Parnell's appeal was heard. Daily paper stories suggest that a photograph showing Parnell's car skidding as it was about to overtake Mrs. Petre's car on the Byfleet Banking in the rain formed the primary evidence, and that Mrs. Petre was not present. One story says that when a reporter phoned Mrs. Petre's home he was told she was away—had he read the current motor papers he would have learned that Mrs. Petre was abroad completing her recovery in a quite unmysterious manner . . .

* * *

Final Tests

As we have so frequently emphasised in MOTOR SPORT the futility of the special tests that are used to decide long distance road rallies, we are pleased to see that a number of authoritative persons are now emphasising that displeasure is being felt over the Monte Carlo conditions, in which, in spite of the organisers' recent efforts, the final brief "dice" decides the issue rather than the 2,000 mile mid-winter drive to the finish. We hope this dissatisfaction will result in changed conditions next year. If a special hill-climb is impossible or unfavourable a series of varied tests, replacing the rather freak manœuvring test, would very likely put this particular house in order. For several years the J.C.C. has managed at its Brooklands Rally to put on a series of tests embracing easy starting, good visibility, good steering, braking and initial pick-up, speed, and hill-climbing requirements. Now, amongst smaller clubs, the Ford Enthusiasts' Club proposes to do something of the same sort at the Autodromes School of Driving at South Croydon on March 13th. If the great Monte Carlo Rally cannot pick a winner by reason of its severe road sections alone, something of a like nature at the finish seems essential to its future success and value to the Industry.

* * *

Present-Day High Performance

Many modern motorists crave really high performance and true fast car characteristics with a minimum of maintenance and driving worries. A striking answer is provided by the Allard-Specials which are unbeatable slime-storming motors, yet very pleasant road-cars into the bargain, even when 50 m.p.h. averages are the order of the day. Synchro-mesh gear-change, automatic ignition control and a minimum of dials to watch renders them enjoyable even to quite inexperienced drivers, yet in the hands of a good pilot they possess acceleration that is a match for anything on the road and handle like a pukka fast car should. They are really fast, for the writer lapped Brooklands with a V8 last year at 85.57 m.p.h. before the car was fully run in, yet these Jekyll and Hyde motors run all day in top gear, display no trace of pinking, and spares are obtainable universally at Ford prices. Allard hopes to increase the output very shortly, and he delivered K. A. Hutchison's V12 Lincoln-engined car in two weeks from receiving the order. A brief run reveals the V12 job to be a most imposing car, and we hope to quote comprehensive performance figures when it is fully run in. Allard's own V8 has had the plugs cleaned occasionally since the beginning of the year, as the only servicing needed, in spite of its weekly appearance in trials. In the "Ford Times" for February it is stated that the Batten and L.M.B. Ford cars are in commercial production. If this is true of these makes it is equally true of the Allard-Special. It is probable that Warburton, Allard, Gilson and Hutchison will be seen at Donington meetings and speed trials this year at the wheels of their Allard-Specials.

* * *

Winter Speed

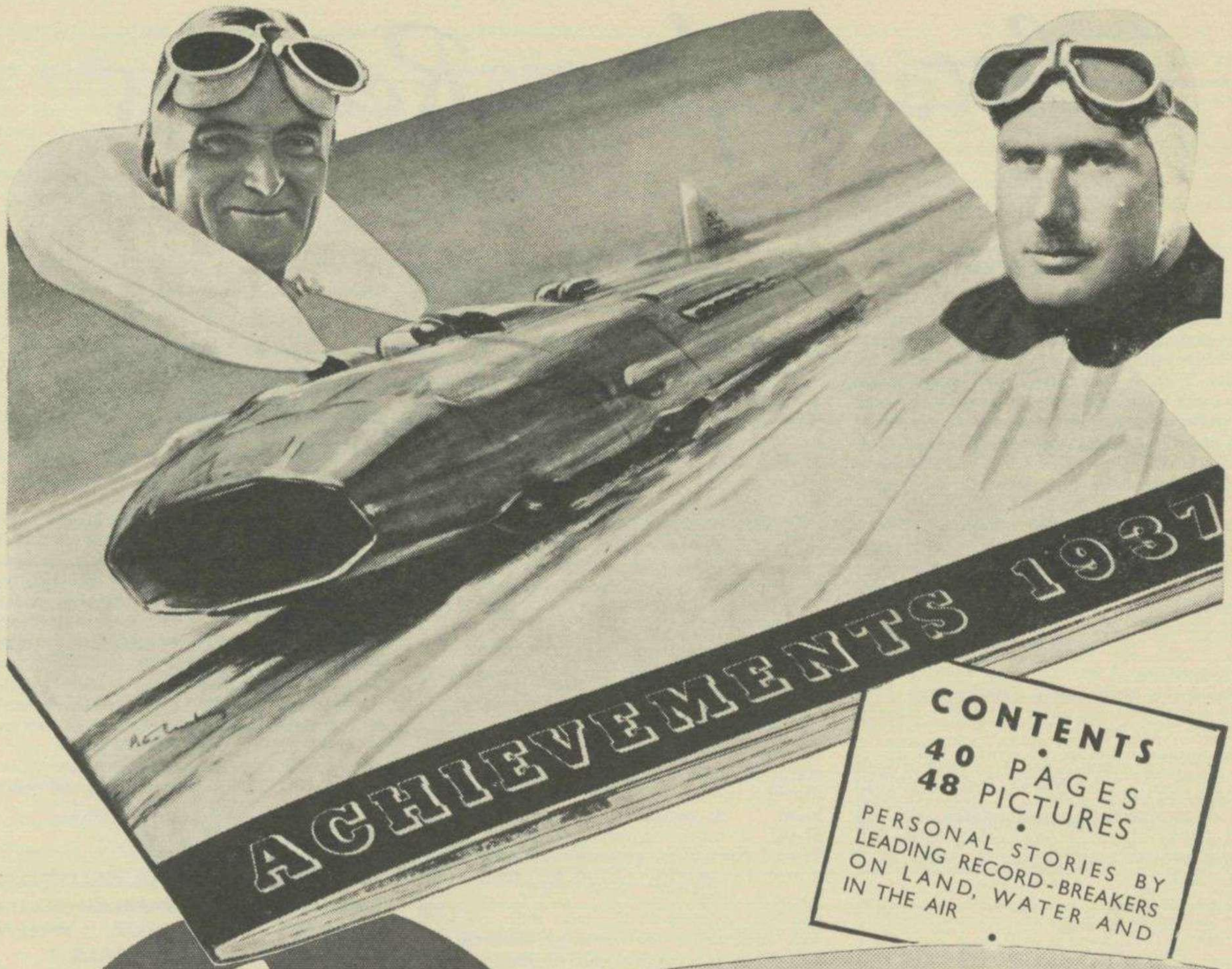
Racing men should be able to cope with the conditions appertaining on the Cresta Run as thoroughly as anyone. So it is hardly surprising that famous drivers figure prominently thereon. For instance, Count Felice Trossi, Varzi, Pintacuda and Taruffi constitute the Italian Bob-sleigh team, and the captain of the British Bob-sleigh team is none other than the Australian, Freddie McEvoy, who, in warmer climes, pilots a quite rapid Maserati. Capt. "Archie" Frazer-Nash used to be an expert at solo runs down the famous Cresta, where speeds of over 80 m.p.h. are reached at places, and T. G. Clarke, with the Delahaye team until becoming a prospective Conservative candidate, is another great exponent.

Poor Sir Lionel Phillips had a short vacation winter-sporting, only to return and damage himself rather badly in a *contretemps* with the Leyland Eight which was described last month. Best wishes for a rapid recovery!

* * *

Not What They Seem

Some cars are not always what we think them. For years many of us imagined the six-cylinder Marendaz-Specials, which succeeded the side-valve "four" of that marque, to have specially-designed engines of advanced layout. Now a correspondent to a weekly motor journal avers that from 1931-35 these cars had Continental engines of American manufacture, lined down to 2 and 2½-litres. There is no such mystery surrounding the new Railton Ten, which is coming on the road in steadily increasing numbers. The chassis is based on that of the famous Standard Ten and actually the first car was merely built for fun for Miss Macklin, daughter of Capt. Macklin, founder of Invicta Cars, Ltd. Another successful car handled by University Motors Ltd. is the Delage D8 120 sports, and we hear that after English ideas have been instilled into the carburation they are able to truthfully claim that it is a very fast car indeed.



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Letters from Readers

INFORMATION REQUIRED

Sir,

I should like some information regarding the 3-litre Speed Model Bentley. I am running one at the moment, and while I have no trouble with the car at all, I am wondering whether it is possible to prevent the driving compartment and the floorboards getting so hot in summer. Perhaps some of your other readers have had this experience, and maybe they have found some method of obviating the trouble.

Incidentally, I should like to recommend this model to anybody who happens to be contemplating the purchase of a Bentley.

My car has done some 18,000 miles in two years, and has never let me down on the road. I never realised that it was possible to enjoy such trouble-free running with such an old car until I started running the Bentley.

A constant source of wonder to me is the ease of starting. In the coldest weather the engine will always start with one or two swings of the handle, and will pull away from stone cold with full power available and never so much as a spit back.

All of which speaks volumes in favour of a pair of good mags and a fixed starting handle. . . I hope it will be a long time before I have to part with the old Red Label.

While on the subject, I should very much like to know whether any reader still happens to possess one of the original button-hole badges of the Flying B insignia, coloured in red. If they have I should be grateful if they will communicate with me via your paper.

I am, Yours etc.,
R. BAWDEN.

E.17.

* * *

SPORTS CARS FROM TEN POUNDS

Sir,

Having noticed in the February issue of MOTOR SPORT the large amount of space devoted to details of reconditioned old cars it prompts me to give you my own experiences.

In common with Mr. Braun I have a champagne taste in relation to cars and a beer income. Consequently the best I could manage to buy was a crashed Austin Seven. All that had to be done was to straighten the front axle and replace parts of the steering. This was duly carried out. The car, I may say, first saw the light in 1925 and consequently performance had to be gained by subtlety. Therefore the engine was stripped and much elbow-grease produced a moderately well polished cylinder head. A copper gasket was put in, about 1 mm. thinner than standard. Then I turned my attention to the brakes, notorious on this model for their comparative inefficiency. After replacing the felt washers in the rear axle, oil leak was eliminated and braking became less a matter of praying and hoping.

This work being completed I ran the car for some eight months and covered a fairly small mileage. Due to my habit of competing with more modern cars in little matters of acceleration and so on, I eventually had to replace three timing drive bearings and also the crankshaft. Prior to this, however, the car had held 55 m.p.h. for some distance and on one occasion did 42 in second gear, checked by an accurate speedometer. Acceleration to 30 was equivalent to many much more modern cars because the gear-change on this model was exceptionally quick.

Finally, this car was dissembled and its chassis, front axle, and steering, altered almost beyond recognition. It now has a central steering column. The motive power for this new " Special " is a 1-litre eight-valve Anzani pushrod twin. Transmission is ex-Raleigh van with numerous other odd parts, mostly collected from local junk-yards. The estimated weight is about 6½ cwt., and its sole purpose in its new life will be to compete in Speed Trials just a little quicker than the other chap. As construction is still progressing, further details are not available.

I am, Yours etc.,
D. CAMERON SMAIL.

Edinburgh.

* * *

AN ANSWER BY MR. CLUTTON TO THE LETTER PUBLISHED IN THE FEBRUARY ISSUE, " WHEN TRIALS WERE TRIALS "

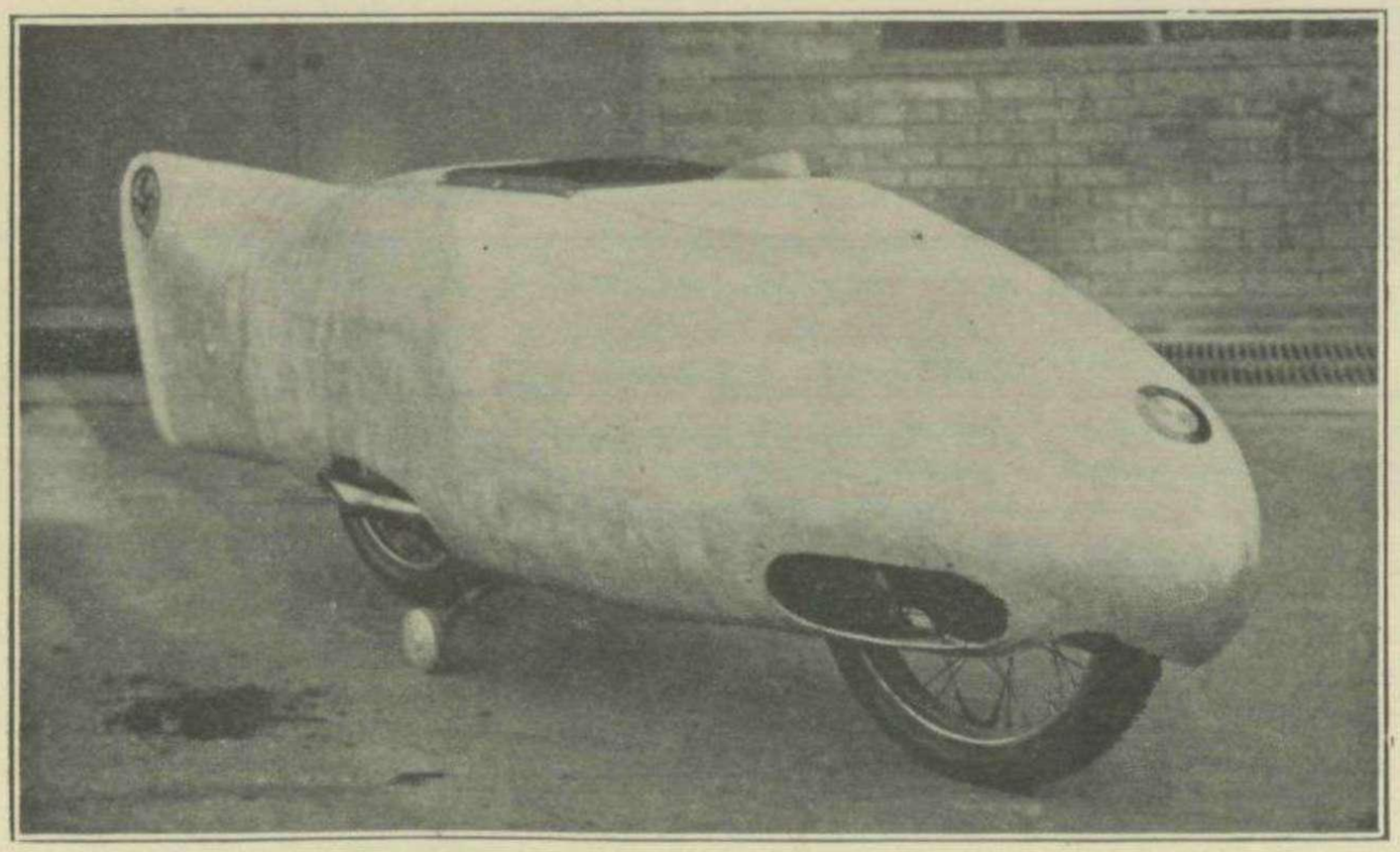
Sir,

I have examined with interest Mr. L. A. Cowcill's formula for use in reliability trials, but I am afraid it won't work, since it apparently asks a Ford V8, for example, to climb twice as many hills as a Singer Nine.

It doesn't really seem reasonable to consider such factors as axle ratio except in conjunction with weight and many other things as well, but I am afraid that reliability trials are in any case quite unsuitable things to try and solve by a formula.

Mr. Cowcill's is only one of the many letters one reads week by week, and month by month, asking for trials suitable for standard cars, i.e.—no knobbly tyres, mudlarking, chassis-twisters and 1 in 3 restarts, calling for 25 :1 bottom gears. Actually, this is exactly the sort of trial which is consistently being run by the Vintage Sports-Car Club, but there is, of course, the inevitable snag. If it is a really dry day, everyone gets up all the hills, and to avoid that possibility it is essential to have a certain number of special tests. This always produces the small crop of bleats from the habitual bleaters ; but they would find something else to bleat about if it wasn't that ; so what ?

While writing, may I make a plea for more road tests of genuine sports-cars in MOTOR SPORT ? These used to be one of the most attractive features of your



The motor-cycle referred to by Mr. Aldington in his letter published on the next page.

LETTERS FROM READERS—continued

very excellent journal, but in recent times there have been very few exhaustive and critical surveys of modern sporting productions. I know that this is also the opinion of a very large number of my motoring friends and acquaintances.

I am, Yours etc.,

CECIL CLUTTON.

W.11.

* * *

CLUB FOR YOUNGER ENTHUSIASTS

Sir,

I have an idea of forming a club for the younger supporters of motor-racing.

It is my intention to get together young men who reside in the South of London and thereabouts with the object of pooling their resources, thus forming a club wherein one could with a small outlay have the facilities for experimentation on chassis and the chance to build a "special," the property of the club and for the general use of all members.

I am sure this club will meet a long felt need of the younger enthusiasts who generally have to restrain their enthusiasm till they are much older and can meet the necessary workshop expenses and initial outlay.

Any suggestions regarding the formation of such a club as stated above will be gladly welcomed.

I am, Yours etc.,

D. ST. J. LIDIARD.

S.E.27.

[Any letters will be forwarded.—Ed.]

* * *

Sir,

I notice that in last month's correspondence columns one reader gives some very interesting details of his 14/40 sports M.G. He goes on to say that many bargains can be picked up in the breakers' yards and advises the impecunious enthusiast to look more towards the older touring car, which can be tuned up, than the out and out sports-car which has possibly been "towsed."

Perhaps from some points of view this may be advisable, but one must bear in mind the fact that not all chassis, however one may tune them, will handle in the manner that sports-cars should. It's no use being fast if you can't steer and stop.

Again, tuning, to be successful, is fairly expensive (to one of limited capital). There isn't much scope for an amateur unless he has a well equipped workshop. About all he can do without making structural alterations is to polish head and ports (difficult in the case of cast-in-block inlet systems), tune the carburetter and eliminate friction in building up the engine. In some cases a high compression gasket can be fitted but even then if the head or block are at all warped they will have to be ground true.

In any case it does not seem very good practice to hot up a touring engine beyond its designed limits once old age has sapped the strength and elasticity from its components. Also the lubrication system may not be satisfactory at higher speeds.

If a real sports-car is required it seems better to obtain a small sports chassis and fit it with a larger or more modern engine, care being taken of course in the choice of chassis, to see that it has a suitable back axle ratio. The older French sports-cars—Amilcar, Senechal, Derby, etc.—were good in this respect, their ratios usually falling somewhere between 4 to 1 and 4.5 to 1. Anything lower than this means a very high revving engine at anything over 60 m.p.h.

The above must not be taken to mean that I do not agree with tuning an old touring car of good lineage (I once had very good service from an 8/18 Talbot fitted with the 10/23 engine) but that from the view-point of expense there is nothing to be gained, since by the time one has done all that needs doing the costs have mounted alarmingly. Of course one does get an individual motor—but it is not cheap, experience has taught me that.

The opinions of some of the more famous builders of specials should be interesting reading if they could be persuaded to give them.

I am, Yours etc.,

R. G. STRACHAN.

Finchley, N.3.

[Amongst the many cars that this reader has built have been Senechal, Amilcar, Austin, Salmson and others. He certainly makes them go very fast. We have seen them !—Ed.]

* * *

VINTAGE CARS

Sir,

The articles on Vintage cars in MOTOR SPORT are most interesting. I wonder how many of your readers who read details of Mr. Powys-Lybbe's Talbot-Darracq remember the time when the four-cylinder unsupercharged models were unbeaten. It would be interesting to know if any of those models are still running ! I should like to see a description in your series of the twelve-cylinder Sunbeam Mr. P. Lybbe used in the "500" as this must be one of the few cases where a Land Speed record car design has had a successful career as a long distance racer. (You will recall the late Sir H. Segrave's efforts with this model before his twin engine car was produced.)

Another car I should like to see described is the 2-litre Sunbeam which was the only car to win the French G.P. for England. Is it still in existence ? I feel it would interest some of the younger generation who think that only Italy or Germany can produce a racing-car to know that England was once to the fore in International Competition.

I am, Yours etc.,

COUNTRYMAN.

Woodbridge,
Suffolk.

* * *

Sir,

May I correct a statement in your interesting article "The Trend of Design" that "the 2-litre Frazer-Nash-B.M.W.s have an automatic free-wheel operating on the two higher ratios." The type 326 (9 ft. 6 in. wheelbase) five-seater is the only model in the range with a free-wheel action, but this is operative between first and second, providing a clutchless change and giving a very effortless getaway—there is a synchromesh action between third and top. All the other models in the range have a straightforward gearbox, with synchromesh operative between third and top.

With reference to your remark in "Rumblings" regarding trials, we do not consider it is a question of a manufacturer having the courage to enter a team of standard cars for trials. Although individual members of our firm (as far as we are concerned) have on occasions entered for trials, we do not consider a firm should enter a team of drivers who will consistently compete against that firm's private owners for awards. This, of course, is purely a matter of individual policy and every firm naturally has the right to do as it thinks fit.

It seems to us rather hard on private owners to find themselves up against works drivers—even in standard cars. Would the expense of maintaining a team for every important trial be justified by any practical results, and do you consider that such a team of standard cars would receive any adequate measure of recognition generally ? As far as prestige of the marque is concerned we are quite content with the successes achieved in trials by our private owners, and the very favourable showing they put up against all the "specials"—and they enjoy themselves. As a matter of fact, it might be an excellent idea to ban all trade entries in trials—and what about a production model clause in the regulations ?

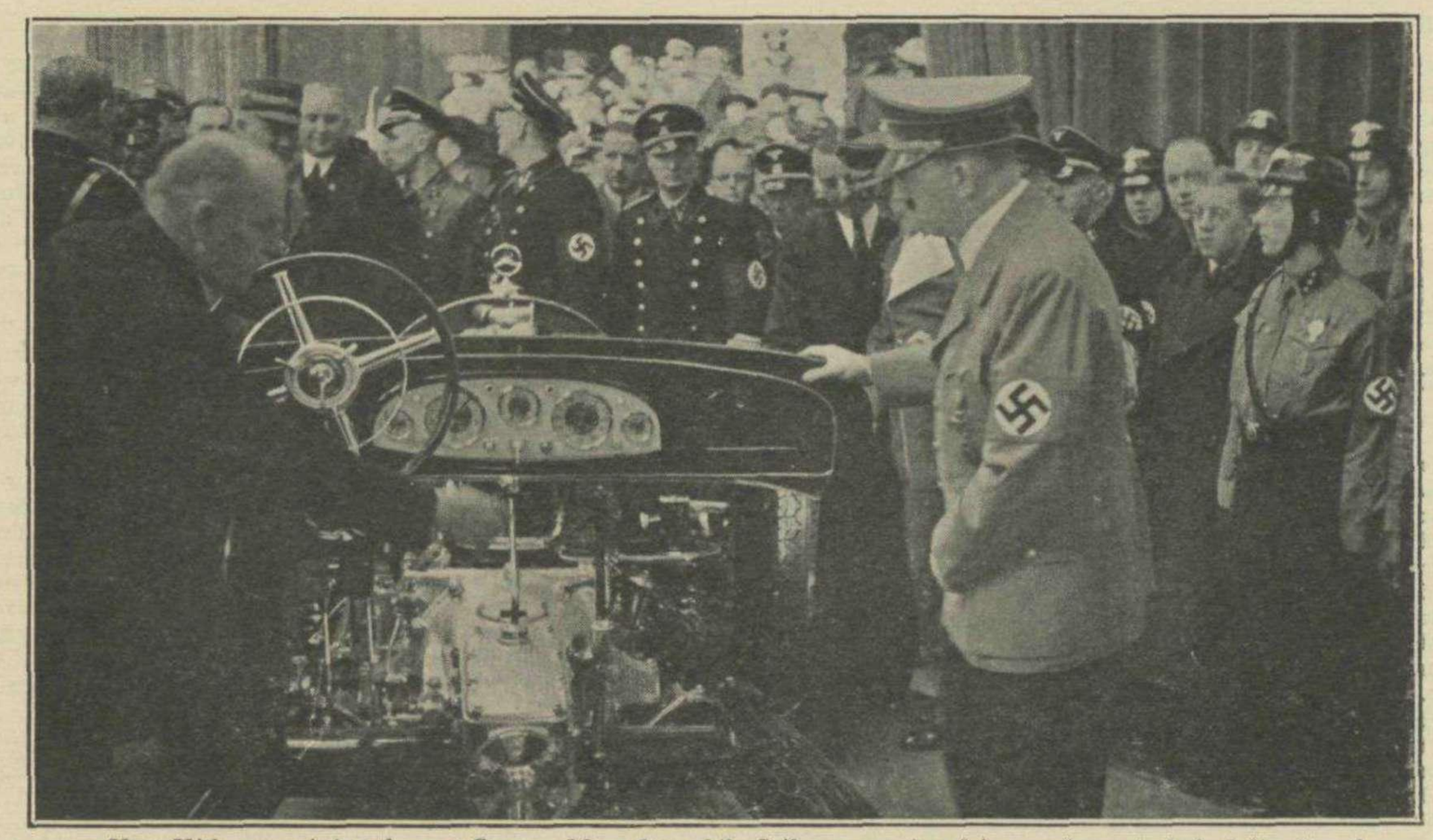
Our attention has also been drawn to editorial comments in the January MOTOR SPORT on two matters that are of interest to us. The paragraph in "Rumblings" anent B.M.W s gaining the world's motor-cycle maximum speed record rather infers that the B.M.W. held an advantage by being "fully streamlined" in comparison with the "non-enclosed" Brough—why not also mention that the B.M.W. is of 500 c.c. and the Brough of 1,000 c.c. ?

As a matter of interest for your motor-cycling readers, when the B.M.W. set up the new record the body and tail had been modified since its tryout during the German records week—originally the driver was totally enclosed.

As regards streamlining, altogether unnecessary emphasis has been laid on this aspect of the matter. Streamlining has become a tremendously important aspect of record work in all spheres—cars, aeroplanes, seaplanes, motor-boats and trains, so why not motor-cycles ?

The other matter is the article on last year's racing, in particular sports-car events. In all the races mentioned, first, second and third placings were given with the sole exception of the T.T., in which "B. Bira," driving a 2-litre Frazer-Nash-B.M.W., was placed third.

Continued on page 113



Herr Hitler examining the new Grosser Mercedes, while Seiler, ex-racing driver and now technical director of Mercedes-Benz, explains the over-drive. Just behind Herr Hitler is Field Marshal Goering.

GERMANY'S CARS ON PARADE

HERR HITLER OPENS THE BERLIN MOTOR SHOW : TECHNICAL NOVELTIES IN DESIGN

ONE expects great things of a motor show in a country where motoring receives the enthusiastic support of the Government, and when one goes to Berlin one is not disappointed. Nine vast halls housed the 1938 exhibition, one more than last year, for in the meantime the new *Masurenhalle* had been built. Cars, motor-cycles, transport vehicles, huge streamlined coaches, caravans, accessories, and every phase of motoring were on view.

The Berlin Show, for all its size, is not so international as those of other countries, especially the British Motor Show, at which one may see vehicles of all car-producing nations. The national spirit is so strong in Germany that other interests have to take second place. Fourteen German car manufacturers had taken space in the main hall, but only one British firm, Austin, had its products on view. There was also a Bentley on one of the special coachwork stands. Italy had three representatives, and Austria, the U.S.A., and France one each.

The long-awaited *Volkswagen*, or people's car, did not appear, although it is believed that Dr. Porsche's final design has now been approved, and the experimental models have been seen running about quite openly for some time. A relief model of the enormous factory which is shortly to be built at Fallersleben, near Brunswick, for the production of the *Volkswagen*, was on view in the *Masurenhalle*. Besides a tremendous spread of works buildings and offices, it will have houses for the workers included in the estate, together with a sports stadium and athletic ground.

It is thought that the *Volkswagen* will have an engine of about 2-litres, at the rear, and that it will have independent suspension of all four wheels, and a full five-seater saloon body, all at a cost less than £100.

Herr Hitler, who, amid scenes of marching troops and impressive pageantry, opened the exhibition in person, said that plans were already far advanced, but development of the necessary synthetic materials had retarded actual production on an economic basis. It was also necessary that the purchasing power of the country as a whole should be increased before the great project was launched. This, as part of the National Socialist Government's policy, had now made great strides, and, Herr Hitler said, the rise of the motor industry had contributed largely to the general improvement in the standard of living.

In 1932, before the first Four Years' Plan, there was one motor vehicle for every forty persons in Germany, whereas at the present time there is approximately one for every twenty-four. It is a fact that demand greatly exceeds supply at the moment, for with most factories delivery dates are three or four months from the time of ordering, and in the case of lorries sometimes more than a year.

This year there was no procession of racing cars through the streets of Berlin at the opening of the exhibition, in deference to the accident to Berndt Rosemeyer. Herr Hitler, having referred in his speech to the national loss sustained in the death of this great driver, made the interesting announcement that a decoration was to be given in future for outstanding success in motor sport, a remarkable evidence of the standing achieved by motor racing in Germany. Although it cannot be denied that little interest is as a rule taken by the British Government in motor racing, even as part of the National Fitness Campaign, one must not forget that both the late Sir Henry Segrave and Sir Malcolm Campbell received their knighthoods for success in this branch of sport.

Caracciola's record-breaking 271 m.p.h. Mercédès-Benz had a special stand in the Hall of Honour, and was constantly surrounded by throngs admiring its beautiful streamlined form. The streamlined Auto-Union, which, it must not be forgotten, still holds the world's record for the standing mile at 138 m.p.h., also had a place of honour, together with Henne's and Winkler's record-breaking B.M.W. and D.K.W. motor-cycles. Little could be seen of the construction of the two record cars, but it was noticeable that, whereas the Mercédès had almost a flat undershield to its body from nose to tail, the Auto-Union's nose was raised slightly at the front, the object being, no doubt, to take the pressure off the tyres.

When one has seen the remarkable aerodynamic body of the record Mercédès, it is interesting to note that, in spite of the general tendency towards streamlining, due to the influence of the *Autobahnen*, there was not a single "streamlined" car on the Mercédès stand in the main hall. This was because the opinion of the Mercédès designers is that half measures are of little avail


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THE BERLIN MOTOR SHOW—continued

in matters of streamlining, and that to obtain real advantage one must " go the whole hog."

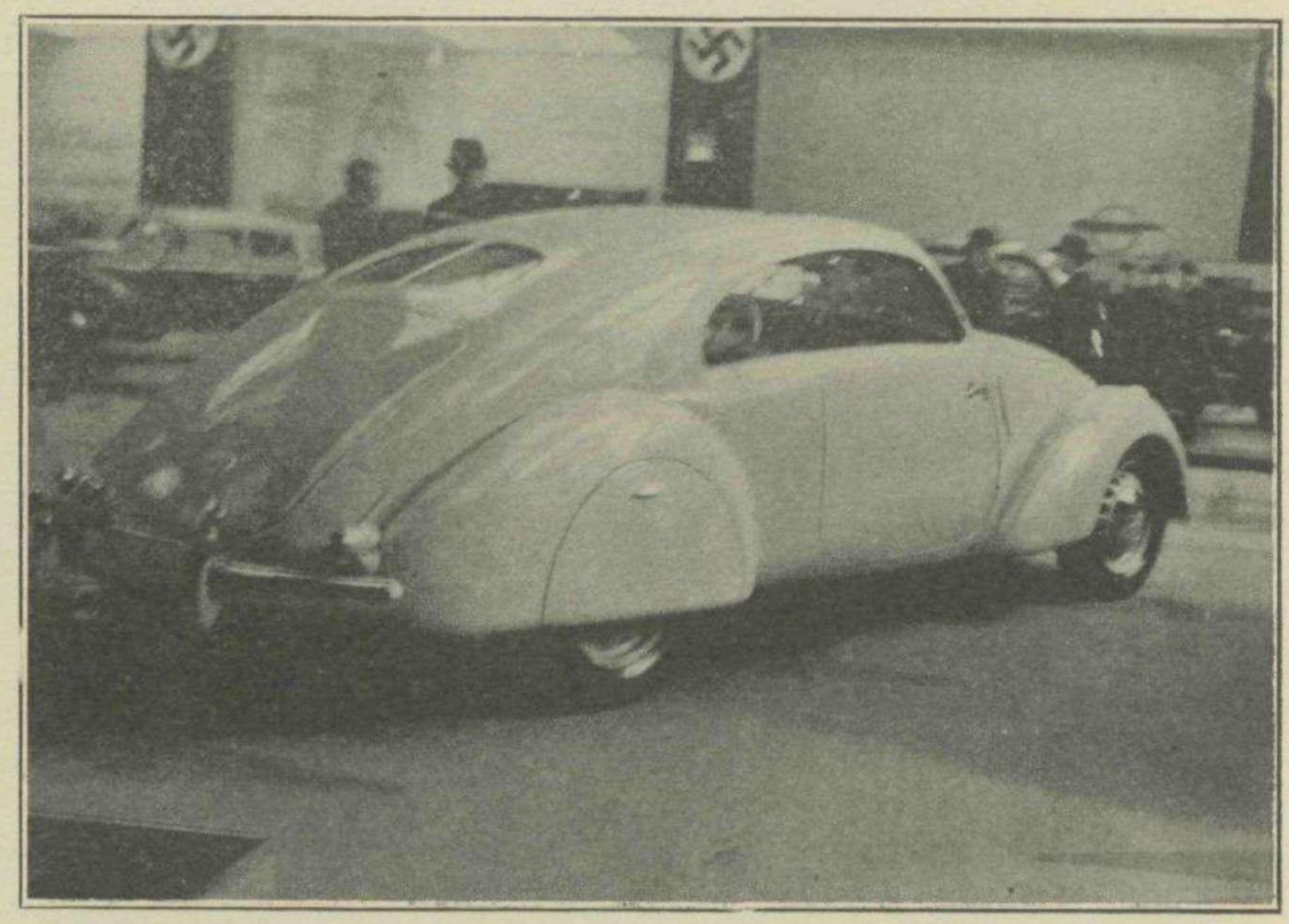
On the other hand, a really fully streamlined body is something of a handful in city streets, and in other ways is scarcely practical for ordinary work. Streamlining does not in any case begin to exert a marked influence up to speeds of about 80 m.p.h., while it is doubtful whether semi-streamlining is effective even at higher speeds. In support of this argument, one may note that the majority of the vehicles rejoicing in such names as Airglide, which appeared some years ago at an Olympia Show, have now dropped out.

Instead of streamlining, one found on the Mercédès stand the two big novelties of the Berlin Show. Both are of interest to the enthusiast, though neither is intended as a sports machine. First, there was the new Grosser Mercédès, an impressive machine with an engine of 7.7-litres. Formerly, this car, which is rarely seen in England, was the only machine in the Mercédès range without independent suspension of all four wheels. Now it is the most advanced of all the models, as a direct result of racing practice.

The engine, while not increased in size, has a higher power output, of 155 h.p. without the supercharger, and 230 h.p. with the supercharger in use. The front suspension is now independent, with coil springs, and the rear suspension is most interesting. Coil springs of very large diameter are again employed, but the wheels are linked by a continuous solid axle. The differential, however, is mounted on a cross-tube of the frame, quite independently of the wheels, and the drive is taken through two swinging half-shafts.

The rear wheels are located by triangulated tubes, which take both thrust and torque independently of the springs. This at last clears up the matter of the suspension of the Mercédès Grand Prix racing-cars, for both front and rear suspension systems on the Grosser Mercédès are those which have been developed with such success on last year's formula cars. Whether the new formula cars will employ the same system remains to be seen.

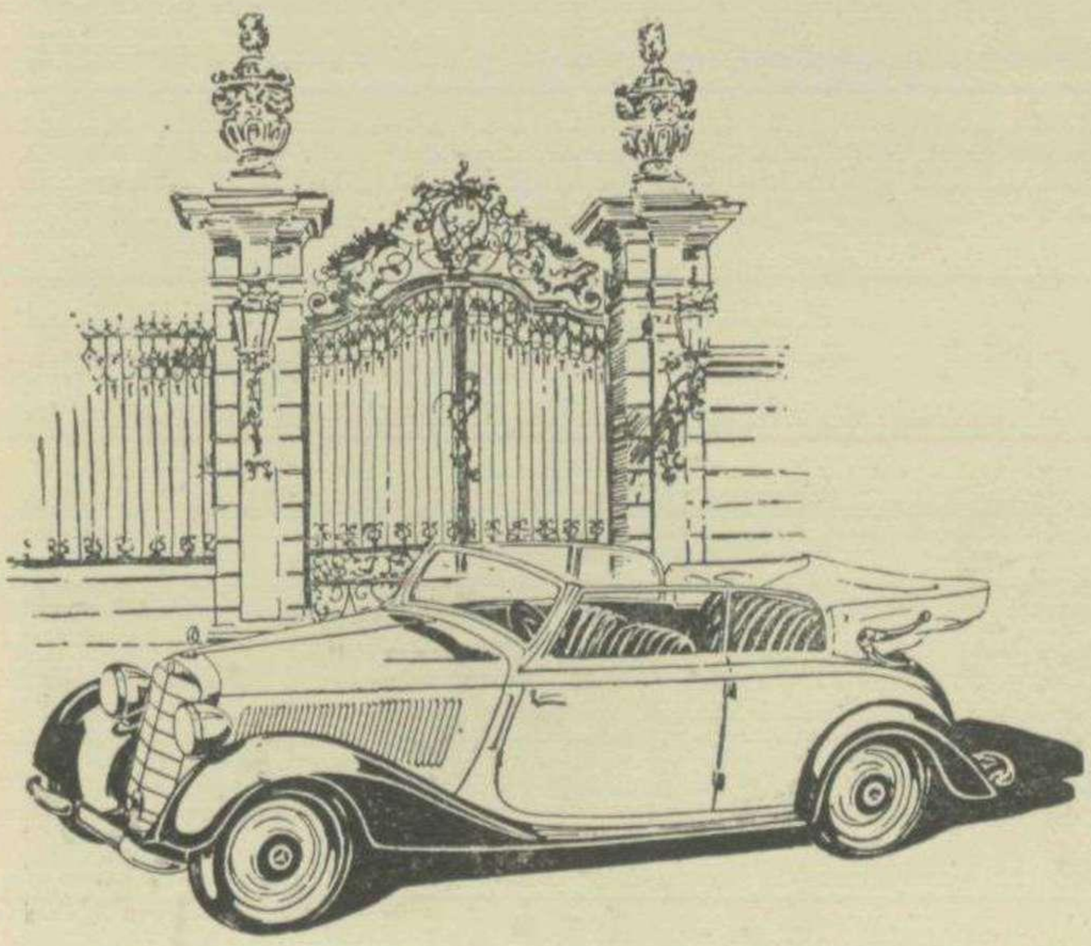
The Grosser Mercédès—unfortunately, as many will say—is not intended for sports work, but as a luxury carriage for the supremely wealthy, or for the use of State potentates. Actually it is not any faster than the 5.4-litre supercharged car, having a top speed of about 103 m.p.h.



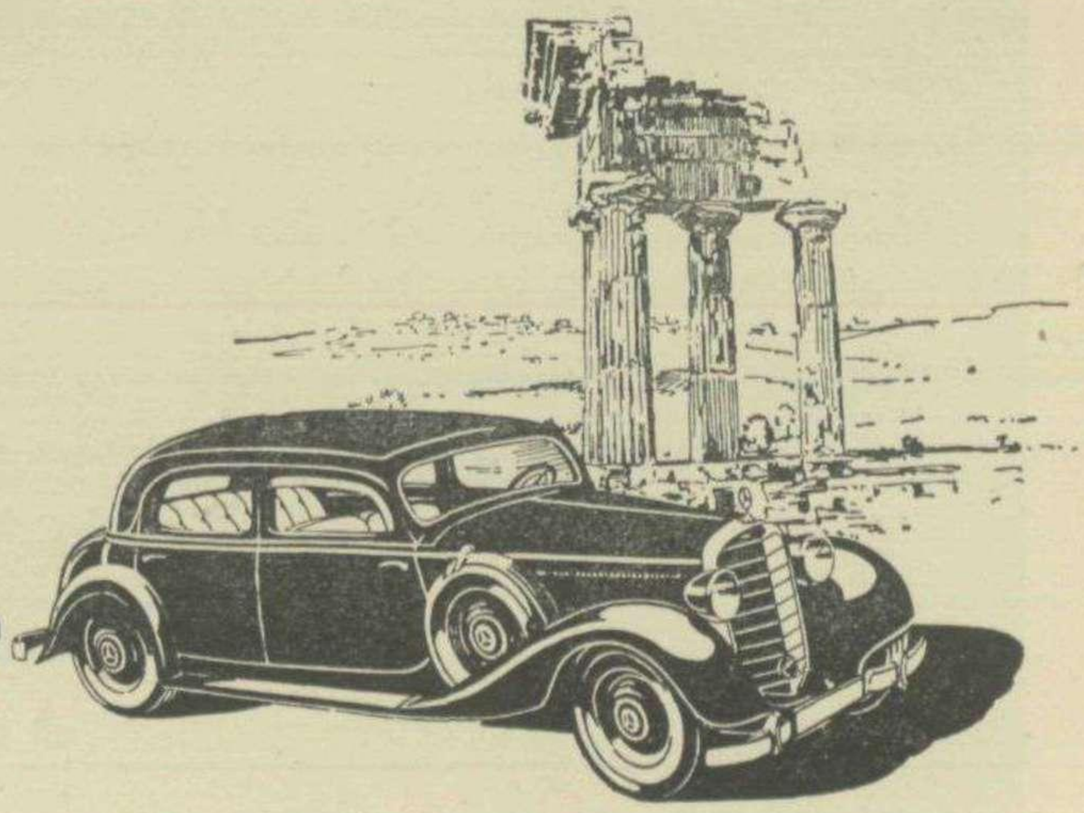
The special streamlined 2.5-litre Adler, for which a speed of 90 m.p.h. is claimed.

The frame is also developed from that of the Grand Prix model, employing oval tubes of deep section. Another feature of the big car, though not derived from the racing-cars, is an overdrive in the differential housing which can be brought into effect on any gear. As there are four forward gears, all with synchromesh engagement, this gives the effect of eight speeds.

The other novelty on the Mercédès stand was the *Gelandewagen*, or " estate car." This would appeal greatly to British trials enthusiasts, as it has not only four-wheel-drive, but four-wheel-steering as well! Furthermore, the car can be driven either with front steering and rear drive, in the normal fashion, or with front steering and the drive on all four wheels, or with all four wheels both driving and steering. The changes in the various mechanisms may be effected



The Type **170** *(***1.7** *litre)* **4-5** *seater cabriolet Mercedes-Benz.*



The Type **230** *(***2.3** *litre)* **4-5** *seater Mercedes-Benz.*

THE BERLIN MOTOR SHOW—continued

easily from the driver's seat by means of two extra levers.

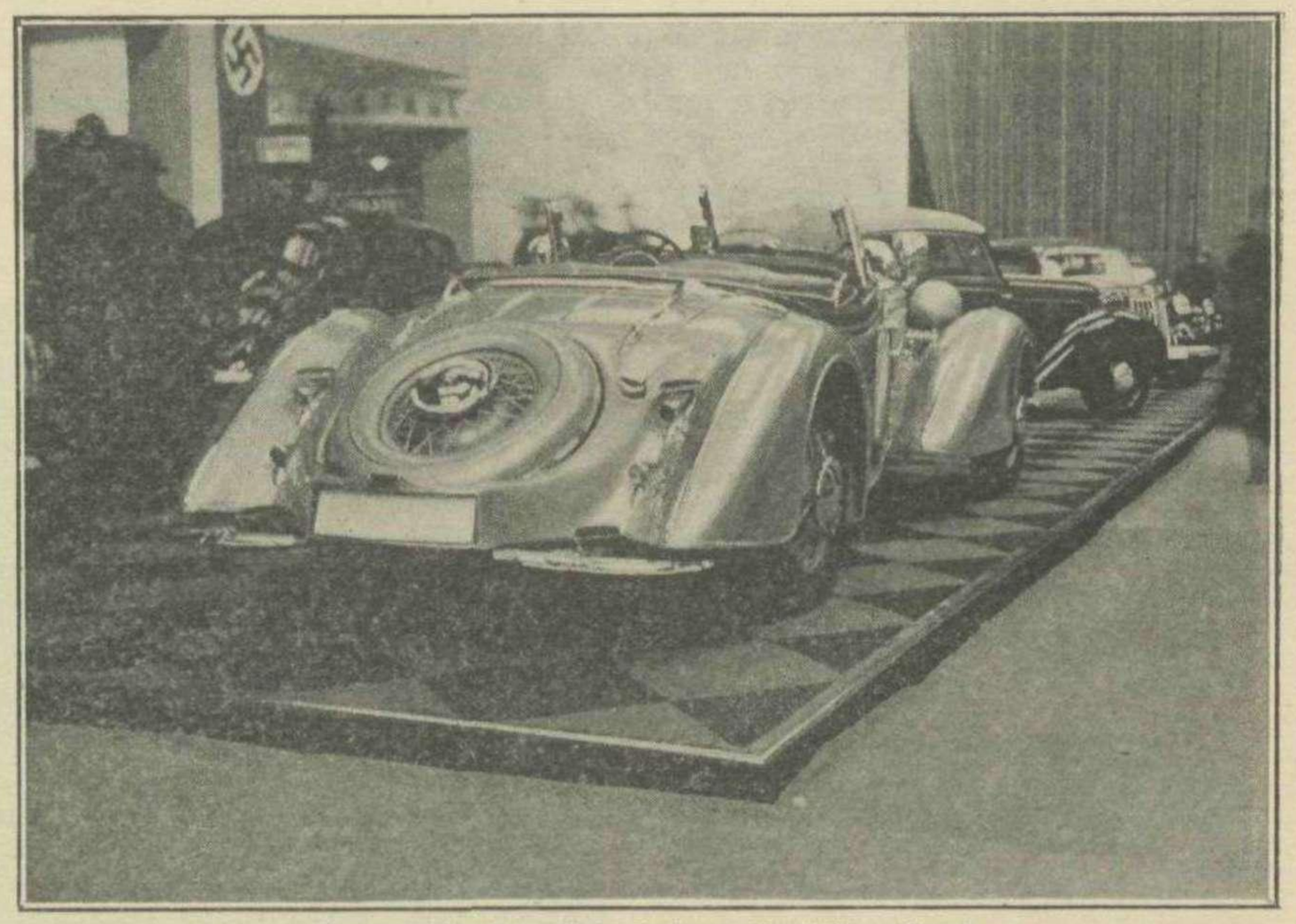
The car, which has a 2-litre four-cylinder engine, has a five-speed gearbox, in which bottom gear is in the neighbourhood of 40 to 1. It has a maximum speed of about 53 m.p.h. The *Gelandewagen*, as its name implies, is designed for travelling about over very rough surfaces, as for agricultural or hunting purposes, or for military use. All four wheels are independently sprung, and, as a matter of fact, both front and rear axles are identical, except that one faces forward and the other backward. The steering linkages, the differentials, the means of taking the drive, and the suspension systems are the same in both cases. With the four-wheel-steering in use, the *Gelandewagen* can turn round in a circle of only 7 metres.

The other Mercédès-Benz models, from 1.7-litres upwards, are all continued with few alterations. Taking the productions of this great firm as typical of the German motor industry, one notes increased pains to give reliability at high speed, or rather at sustained high speed, which is quite a different matter. In this way special valve seats are now fitted in the alloy head for the exhaust valves of the 1.7-litre car, and on the big 5.4-litre supercharged car the exhaust valve stems are hollow and are filled with salt for cooling purposes. This principle is by no means new, but it is only lately that valves of this type have become a practical proposition.

Salt-cooled valves are also used on the Horch, the splendid 5-litre car produced by the famous Auto-Union combine, whose members are Horch, Audi, Wanderer, and D.K.W. A 5-litre Horch with special roadster drophead cabriolet body was greatly admired, while one of the smaller V8-engined Horch cars had a neat three-seater cabriolet body, with a single rear seat placed transversely. This type presents many advantages to the open car enthusiast, since the rear passenger is thus nearer to the screen, and receives more protection, he sits well within the wheelbase, and communication between front and rear passengers is facilitated. The body can moreover be short and compact, and there is plenty of room for luggage in the rear if no passenger is carried.

Cabriolet bodies of solid build and pleasing lines were a feature of the exhibition, appearing on almost every stand. The term "coupé," incidentally, is not used in Germany at all, and "cabriolet" is used for all convertible bodies, whether two-seaters or four-seaters. The three-seater type of body referred to above appeared this year on a number of stands.

Open sports-cars were not shown in any numbers, owing to the popularity of the drophead body in Germany. B.M.W. showed the 100 m.p.h. two-seater, and Wanderer showed the 2-litre supercharged car, which is now establishing a reputation for itself. A neat sports body also appeared on the 1.7-litre Mercédès, and the Eifel Ford (or Ford Ten) sprung, and a backbone type inswept tubular frame. The Stoewer also has a backbone type frame, and employs a horizontally opposed air-cooled four-cylinder engine. The Steyr, too, has a horizontally opposed engine, with water-cooling. Such unconventional designs do not alarm the Continental motorist, who is alive to technical progress in a manner possessed only by the enthusiast in England.



A magnificent roadster body on the 5-litre Horch.

was shown with a nicely built sports two-seater body with rounded tail. A particularly fine example of drophead coachwork appeared on another Eifel Ford, with finely finished two-three-seater body.

Streamlining was much in evidence on the Adler stand, where the new 2.5-litre car was shown with various styles of coachwork, and also in sectioned form. The most streamlined model, with three-carburetter engine, develops 80 b.h.p., and is said to be capable of 90 m.p.h. The super-streamlined 1.7-litre Adler, which has recorded 100 m.p.h., was not on exhibition.

An interesting German car is the Hansa, with all four wheels independently

This interest in technical matters was shown in striking manner in the *Masurenhalle*, a large part of which was given up to exhibits showing the progress of scientific research in various directions, as in the production of synthetic fuel, synthetic wood, upholstery, etc. Buhne artificial rubber is among the most advanced of the synthetic products upon which Germany is concentrating. Formerly six times the cost of natural rubber, it is now only 3.6 times as expensive, and, since better endurance qualities are claimed for it, it is rapidly becoming a factor to be reckoned with. Light metals are also being studied, and a body was shown saving 100 kgs. over a similar construction in steel.

LETTERS FROM READERS—continued from page 109

While this is not mentioned, a further remark is also made that the race "must be mentioned for the duel between three Talbots and a Delahaye, victory going to the former"—this ambiguous remark might be taken to suggest the Darracqs were first, second and third. Frankly, we should consider, in common with contemporary reports, that the feature of the race was the fight put up by the 2-litre B.M.W.s against the extremely fast French cars of over twice their engine capacity—the B.M.W.s having 3 seconds per lap in hand over the Darracqs. May we also recall that A. F. P. Fane led the race for an appreciable time, and up to the time of his retirement at half distance (owing to the failure of an experimental ball-race in the back axle) had figured conspicuously in the first three.

The writer is not aware whether the various sports-car events of last season were officially listed in any order of precedence, but if so this would probably account for the specific mentions of the Grand Prix de Bona, Miramas, or the Targa Abruzzo, in preference to the Belgian Grand Prix des Frontières, the Grand Prix of Roumania or the International Eifel meeting, in all of which events B.M.W. cars made Fastest Time of the Day, and at the latter event created a new sports-car record for the Nurburg Circuit, irrespective of capacity.

I am, Yours etc.,
For A.F.N. Limited,
W. H. ALDINGTON.

Isleworth,
Middlesex.

ON MEETING THE M.O.T.

SOME VIEWS BY WELL KNOWN EXPONENTS OF TRIALS

SLIME-STORMING, even if it proves nothing and has a bad influence on the design of certain sorts of sports-cars, gives pleasure to hundreds of drivers and to many more hundreds of spectators, so it is very necessary that we should give the politics of trials careful consideration. Just at present they are quite enthralling. In the January issue of MOTOR SPORT the general situation was reviewed. As trouble was obviously brewing, Guy Bochaton formed a Committee with a view to forming a Greater London Motor Club to run combined trials in the congested slime areas around London, while retaining the individuality of the existing clubs. The R.A.C., anxious not to exert any constraining influence on the Sport, agreed to give every possible assistance and the Bochaton Committee got quietly down to the job of tapping the views of secretaries and committees of those clubs involved. In the meantime, complaints in growing quantity caused the Ministry of Transport to complain to the R.A.C. that trials were becoming a matter of concern and to ask the R.A.C. to endeavour to put their house in order. This is a very serious matter. F. L. M. Harris, General Secretary of the M.G. Car Club, has emphasised that even small dissatisfactions expressed by local councils can very quickly result in strong actions by the Ministries which they approach, as he knows from experiences in connection with camping and caravan sites. While we believe that no drastic action is contemplated against the running of trials in the immediate future, clearly the sooner we put our house in really good order and tell the M.O.T. that we have done so, the better it will be for this branch of the Sport. The R.A.C. has taken prompt action by appointing a special committee of three and of appealing to club secretaries to submit the views of their respective clubs as to how the existing situation can best be cleaned up. We feel that the publication of some private individuals' views may assist clubs to debate the matter and to form their own proposals and that discussion on this extremely important subject may be of some considerable assistance to the R.A.C. when they come to take decisive action to appease the M.O.T. Consequently we have approached certain experienced persons who have decided views on the subject and quote these views below. That action must be taken soon is evident from the interest which the M.O.T. is displaying and by the growing unrest, for, following the attempts to close Jenkins Chapel, Isle Lane and The Warren are now in disfavour.

K. N. Hutchison, one of our more prominent and enthusiastic trials drivers, and joint secretary with Sydney Allard of the Ford Enthusiasts' Club, suggests the following cure :—

"There is only *one* solution to the present difficulty of multiplicity of trials, and we all agree that the solution is to drastically cut the number of events. Whilst doing this I suggest it would be a good idea to completely re-organise all the clubs concerned with promoting trials, on the following lines :—

1. There should be only *one* motor club per county.
2. Each club could only have as its members persons living in that county.
3. Persons would only be permitted to join one club—their home county club.
4. Each club would only be allowed to promote two events per annum—one closed and one open.
5. The open event, however, would be open to any and all other county clubs.
6. Each club's events could only be run in the boundaries of their individual county.

"Naturally there would be other regulations, but the six mentioned above are the ones which would most strongly affect competitors and members of the public, landowners, farmers, etc.

"Let us analyse them one by one. By only permitting one club per county one would immediately curtail the ridiculous state of affairs at present in vogue, e.g. in Kent alone there are about half-a-dozen clubs operating as local clubs, where one would be quite sufficient. Also this arrangement would mean that every club would be stronger numerically and financially.

"Number 2 is merely the natural sequence to having county clubs. Obviously a person residing in Surrey would be more interested in joining a Surrey club than, say, a Northumberland one, and vice versa.

"From the competitor's point of view, item 3 is obvious, as it would not be necessary for a regular competitor to have to join about a dozen clubs to get his trials.

"The most important points are numbers 1 and 5 and in these anyone with half an eye can see that this is the solution. By the proposed arrangement each county would be only driven over twice per annum, and at intervals of six months, the winter say for the open event, and the summer for the closed one, when the club in question was catering for its members and could put on an easy course. Even the most consistent of trials entrants would have enough events available—say only thirty counties came in on the scheme, there are even then thirty-one events per annum for each individual. Instead of nearly 200 trials in the year 1938 there would be seventy, which is getting down to a number that is reasonable.



E. K. Farley, with a burst tyre on his H.R.G., is pulled up Rake Hangar in the recent Combined Trial, reported elsewhere in this issue.

"Item 6 would have to be insisted upon, as it would prevent county clubs straying to popular trials districts to run their events.

"The above is a rough outline of a scheme that would go a long way to solving the difficulty of the present trials position. This scheme would mean the end of long trials extending through several counties, and would also eliminate night sections, both of which would be quite acceptable to the majority of competitors. After all, on the M.C.C. type of trials, it is not so much the use of hills that causes friction, but the fact that a procession 300 or more cars long drones through countless villages and towns for many hours. Again, to illustrate by practical examples, a trial like the Gloucester would cease to exist as such, and the use of the Gloucestershire hills would be the prerogative of the Gloucester county club and as such would be only used twice a year—unfortunate for competitors, maybe, but it would

ON MEETING THE M.O.T.—continued

allow the residents of Gloucestershire to take a better view of trials. You may say, 'Well, what about small local clubs cutting in and running events for anyone who would join that particular club?' And the answer is that all competitors would have to take out a trials competition licence issued by the R.A.C. or other controlling body, and if they ran in these unauthorised trials, their licence would be taken away. Thus, the competitor would watch his steps in this direction, and the clubs that persisted would eventually fade out through lack of support.

"This scheme would mean throwing overboard many old club traditions, and making a lot of sacrifices, but it would be better than having all trials banned, and once officialdom takes a hand in the matter all sensible reasoning and sound arguments are cast to the winds. It has been suggested in some circles that the R.A.C. should take a hand in the matter, in cleaning up this mess, but I would remind readers that the R.A.C. is not in close enough touch with present day trials conditions to be in a position to make decisions relating to trials.

"Also many persons hold the view—and not without good reason—that the R.A.C. is responsible for the present state of affairs. It has been in their power to cut down the number of trials run in the past, but instead of their doing so, we have an increase. Also, by making open invitation events, only open to a limited number of clubs, they themselves have forced up the number of trials. As a regular competitor and joint secretary of a flourishing one make club, I am extremely anxious that we do not lose our sport, and as such will place every facility in the way of any committee or body that is elected to bring about a better state of affairs."

This would certainly seem the complete and effective cure. Unfortunately it would spell the death of many pleasant small clubs, not existing solely to slime-storming, but relying on a few small trials per annum to attract a reasonable membership. That is assuming that such clubs are to be allowed to exist at all, which requires an amendment to Clause 1 in Hutchison's proposal. Certain clubs could continue quite happily by running socials, speed events, etc., or by their collective membership appeal in the case of some one-make bodies, but many would inevitably fade out and unfortunately it is these smaller clubs which put over trials with sensible, worth-while hills and conditions. Another objection is the difficulty of making certain that competitors only join one club—persons with more than one private address would doubtless claim to be entitled to join a couple of county clubs. Long-distance trials have a fascination all their own, and these, too, would die. In spite of Hutchison's opinion of night sections, the M.C.C., which organises our three premier long-distance events, claims to be immune from individually delivered complaints. But as a thorough cleaning up of a very sticky situation Hutchison probably holds the solution.

Writing in "The Sphere" on February 12th, A. Percy Bradley, M.I.A.E., A.M.I.Mech.E., suggests a simpler solution. He favours banning Sunday trials, ceasing operations between the hours of 10 p.m. and 8 a.m., and limiting activities to twelve trials per hill per annum. That seems quite a sound plan, as it has the advantage of not eliminating hills which may cause the least trouble, yet which would rank with "offensive" hills under the Bochaton and Hutchison schemes. The problem would not be insurmountable if the R.A.C. provided themselves with a comprehensive survey and locations maps of all known hills and I feel that if the M.O.T. did not accept it they would accept very little else—perhaps not even the county grouping plan. Mr. Bradley's scheme would not obviate congestion in villages and approaching roads in areas where "good" hills are closely bunched, and presumably would not eliminate night sections over main roads, but then Hutchison's scheme would tend towards much greater congestion in "good" areas three times per year, and it is debatable which local inhabitants would object to more. Moreover, with Bradley's scheme it would be reasonable for the R.A.C. to spread trials over varying areas as well as restricting the use of the hills, whereas the limited suitable hills in many counties would result in inevitable thrice a year convergence, under county control.

John Eason-Gibson, a Director of the Light Car Club and something of an expert on motor-sporting politics, says:—

"Before considering a cure for the present trials problem it must be realised that the public is not annoyed at car trials but at trials generally, i.e. motor-cycle, and car trials equally. A cure, therefore, should come from a combined committee of the A.C.U. and the R.A.C. which should limit trials to a certain number per year. County committees could assist this joint committee to assemble the calendar at the beginning of the year and avoid overworking any one hill or its immediate vicinity. The Bochaton Scheme, in my opinion, would only cause needless work, without any useful purpose being served. I also think Competition Licences should be compulsory for any trial or organised event—even a scavenge hunt—and any person supporting an unauthorised event would be liable to immediate suspension. All authorised events could have number plates overprinted with the R.A.C. badge so that an unauthorised event could, by collaboration with the police, become a criminal offence. This does not require Parliamentary action; an Order in Council would suffice—fifteen minutes' work. The sooner our house is put in order the better, otherwise the M.O.T. may ask for and get a more sweeping Order in Council!"

The compulsory Competition Licence would probably be both a useful practical idea and one that would be very acceptable to the M.O.T. agitators. The workability of the scheme would depend on what co-operation the club and county committees gave the A.C.U./R.A.C. governing committee, but such support should be forthcoming provided the seriousness of the situation can be universally brought home both to individual competitors and clubs. But would the governing committee be sufficiently impartial and firm in dividing up the permissible number of trials, which must be extremely curtailed, amongst our immense number of scattered clubs of divers views and very varied status?

F. L. M. Harris, Secretary of the M.G. Car Club which has over 1,200 members and organises a very extensive trials programme, writes:—

"MOTOR SPORT sets me a difficult task when I am asked to express the views of the M.G. Car Club on the trials situation. The position is changing so swiftly and we have so many centres of activity that it is hard to keep abreast of current opinion within the club.

"Naturally the club as a whole feels some concern because it seems evident from recent developments that trials will soon be under much stricter control than they are at present. And restrictions of any kind are always irksome.

"We hope that in the various 'official' deliberations concerning trials which will be taking place in the next few months it will be remembered that the present tendency is for trials to develop along Rally lines. Already it is the special tests rather than the hills which decide the awards in most events. If freak hills are to go out of use as part of the natural development of the sport, complaints concerning trials will disappear and there will be no need for any restrictions of an official kind to be imposed.

"The M.G. Car Club is of the opinion that every recognised automobile club should pay to the R.A.C. a small capitation fee per home member, thus providing the parent organisation with a source of revenue which could be applied to more direct control and development of club events on the roads."

We have always disliked competitions which are decided on freak driving-skill contests, but slime-storming proves nothing either. And it might be an excellent thing if sensible tests, involving severe braking, fast cornering and acceleration to a reasonable speed, universally replaced mud and gradient. We believe that only one big hill is to be used in the M.G. C.C. Abingdon Trial. But we are not convinced that extensive, or even existing types of driving tests, can be held safely and without inconvenience on any but private ground. And such tests are unlikely to suit such a varied entry as trials based on hill-climbing or hill-climbing in conjunction with limited special and restart tests. We have advocated the use of speed events on private drives in lieu of slime hills, but there are insufficient venues to serve for every trial, unless these be curtailed as ruthlessly, or even more so, than Hutchison deems desirable. The M.G. C.C., like the M.C.C., has been extremely thorough and cautious in matters of organisation, but this has not prevented local clubs from using, or practising on, hills picked by the M.G. people, but without their careful marshalling and control. It is very largely this sort of happening which has brought trials into disrepute, and the Hutchison and Gibson provisions guard against its continuance in the future by specifying Competition Licences, which should also provide the R.A.C. with

ON MEETING THE M.O.T.—continued

an ample additional source of revenue. Mr. Harris believes it desirable to devise special tests which will not humour racing type cars to the detriment of existing typical trials-wagens.

R. A. Macdermid, the well known M.G. trials driver, has expressed the opinion that a League of Trials Drivers, in effect a Trials Drivers' Union, should take control of all trials and should limit the number of trials to a maximum of one per week-end. The success of such a venture would naturally depend on how such a Union was constituted and of what degree of support it received from the Clubs, and there is at present no real reason to relieve the R.A.C. of control, for their inactivity up to now has been intentional, as part of their policy of restricting the Sport as little as possible, which is a fair enough explanation. Macdermid also makes it clear that he dislikes night sections, yet, apart from that influence of "tradition" which is appreciated by more amateur drivers, there is a deal to be said in favour of night sections, even if the M.C.C. argument, that tired drivers fail more easily on hills, is not taken too literally. And some persons feel that to abandon *main-road* night sections to humour the M.O.T. is to play still further into the hands of all-crushing authority. That trials politics are in a tangle is very evident and it is imperative that this tangle be quickly and effectively sorted out. The man who finds the best solution will go down in motoring history as a benefactor of the Sport and those who seriously discuss the various schemes put forward will contribute their share towards reaching this much-needed solution.

MEMORIES

Strictly speaking, turning the leaves of an enthusiast's scrapbook is not a very satisfactory way of recalling motoring history, for very often important highlights may be missed. On the other hand, scrapbooks can revive fascinating memories and emphasise, in a manner possible in no other way, extremely interesting incidents and details that would otherwise be forgotten. That is why the "Sideslips," which "Baladeur" no longer has time to write for us, went down so well, and largely why the same writer's Veteran Types articles are so much more interesting than a mere survey of historic cars, out of history. So there is much of interest attaching to a purely miscellaneous collection of early photographs sent to us by Mr. Donald Monro. Monro's name is nowadays very much associated with the Invicta, but these photos show that he was once a Star enthusiast, two of his Stars being shown at Brooklands in 1929 after both had covered the half-mile at exactly 70 m.p.h. One was a 1927 12-50 fitted with a Hill Bros. two-seater body in 1928. It competed thrice at Shelsley, its best climb being 71 secs. The other (1925) had a big aluminium touring body and artillery wheels. Then there is a picture of another of Monro's former cars—a 1925 Vinot—with a most beautiful airship tail to its aluminium body, wire wheels, side panels to its screen and a big spot-light. There are some shots of the 1925 200-Mile Race, chiefly featuring the front-drive Alvis cars (where are they now?) and reminding us of the last-minute preparations to the blown A.C. undertaken by poor Mays, as that car's one-piece bonnet is sitting conspicuously on the concrete, while in a later picture the car is being vigorously push-started. There is a remarkably interesting snap of the Leyland Thomas, "J.G.P.T." at the wheel and Ken Taylor crouching on the tail. This shows the transitional stage between the two-seater Leyland Eight which Thomas raced from 1920 to 1922 and the subsequent beautifully-streamlined Leyland-Thomas, the bonnet actually tapering to a curved section smaller than that of the Leyland radiator, while the bolt-on disc wheels are fitted. If the end of the bonnet was blanked off this must represent one of the earliest post-war revivals of the isolated radiator. There are also two pictures of the Thomas-Special No. 1 of 1924, known at the time as a Marlborough Thomas. It was a low-built car with torsional suspension, disc wheels, a barrel-section body and a silencer like a sausage. Thomas drove it in the 1924 "200" until it broke up. Of about the same period is a 1923 Alvis 200 mile car, and this is especially interesting as the type which won the race in that year. Streamlining, or an attempt at such, has been carried out very thoroughly, in spite of the chassis being quite unsuited to faired bodywork, so that the tail is as high as the hood of an adjacent tourer! There is a single bonnet strap and a big cylindrical tank on the near side.

The collection is completed by views of some interesting early sports-cars. There is a Salmson with which the late Clive Dunfee gained several Brooklands successes, the same driver's sports Mors, which looks a most desirable possession, with torpedo touring body, wire wheels and four-piece V-screen, and an earlier snap of Clive's "Vitesse" G.N., with V-twin o.h. inlet engine and disc wheels. Finally, a sports 11.9 Calthorpe with tiny copper fuel tank set transversely on the tail and one of the famous "Brooklands" model sports 11.9 Hillmans of about the same period. A picture of Dunfee's 3-litre Ballot shows that the tail had a hinged lid in its Brooklands days, which amplifies remarks made by "Baladeur" in his Veteran Types article last March. Incidentally, between ownership of the Stars and his present Invictas with which we all associate him, Monro had a Speed Six M.G. and a short-chassis experimental "Tigress" M.G.

Just before the War his father ran a Weigel saloon—the Monros are a great motoring family and take a great pride in their cars.

STABLE INFORMATION

During his commentary on some slides, shown before his film "Motoring with Mercédès," at the Harrow C.C. Film Show on February 17th, George Monkhouse gave some hitherto unpublished information about the Grand Prix Mercédès-Benz cars of last season.

The tubular side-members of the chassis, he said, are of oval-section only 1½ mm. thick, and before the cross-members are in place it is possible to pinch the ends of the frame together with one's fingers. The cross-members are tubular. After each race the body is removed complete and the car thoroughly vetted by its own engine mechanic and chassis mechanic. Another slide showed the off side of the Mercédès-Benz engine with the new induction system. With so long an induction pipe perfect distribution of the mixture is impossible even under pressure and Mercédès-Benz overcome the difficulty by placing jets at the base of each off-take branch of the manifold, leading quite a large-bore pipe from these jets to the suction side of the supercharger. Thus liquid fuel and mixture are sucked back into the blower and by varying the size of individual jets as required offending cylinders can be relieved of over-rich mixture. Although this system sounds crude, it is possible to visualise that very accurate results are obtainable by using a considerable variety of jet sizes, while very rapid alterations could obviously be effected after inspection of the plugs ("bottles" as Monkhouse has it) had indicated the condition within the cylinders. It is interesting to speculate whether Mercédès-Benz adopted this system in a hurry, not having time or not wishing to carry out prolonged tests with a variety of manifolds, as one believes Alfa-Romeo did when first applying supercharge, or whether the arrangement functions so well that racing has contributed yet another development useful to the sports-car designer. Monkhouse also said that last year Auto-Union shortened the main arms of their front suspension in order to reduce or obviate steering re-action, which had apparently been so severe at times as to cut the driver's hands.

CORK GRAND PRIX

Entries are accumulating very well indeed for the Cork race on April 23rd. Nuvolari, Sommer and Farina are expected to handle the new Alfa-Corse cars, and P. Wimille is a likely starter with the new 3-litre blown Bugatti. Hans Ruesch has entered his Alfa-Romeo. Raymond Mays and Arthur Dobson will drive the new E.R.A.s and Schell, Comotti and Carriere are down to drive the 4½-litre unblown V12 Delahayes. K. D. Evans (Alfa-Romeo), Chris Staniland (probably an Alfa), A. F. Ashby (Alfa-Romeo), and Mrs. E. M. Thomas are amongst the early entrants. Cheap excursion services are available, if you contemplate spectating.

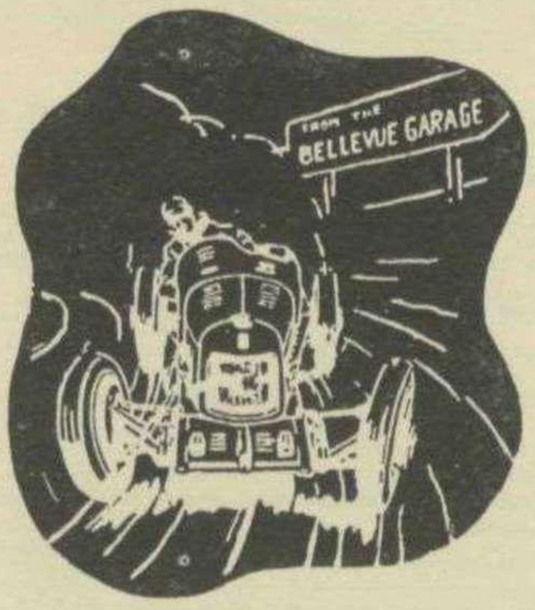
FIAT BALILLA SALOON—continued from page 84

30 to 35 m.p.h., followed by a tricky open left wiggle and then a very long right-hand sweep, with a hedge on your left and masked by the bank on your right. Out of this bend you straighten up to shoot across to the finish, marked permanently by an inset strip in the surface. The hill is more "open" to onlookers than Shelsley and the orchards by the start are reminiscent of an Inter-'Varsity speed trial venue. We prophesy that few sports-cars will climb in much under 60 secs. at the first meeting. Certainly the Bugatti Owners' Club, already high in prestige, will, by the acquisition of Prescott, become one of the most exclusive of motoring bodies.

Reverting to the Fiat, we now added unexpected data to our test by reason of the off-side rear Perelli subsiding. The screw-jack functioned well and the change was quickly made, but we were surprised to find *brass* wheel-nuts, which seem hardly adequate; indeed, the thread of one already had a tendency to strip. The disc wheels are light to handle.

It now seemed time to return home, but on the way we tried Kineton Hill, used in last year's "Gloucester," which the Fiat romped up very rapidly, the deep water-splashes causing no bother. Tea in Chipping Norton, and we decided to take a 0 to 50 m.p.h. acceleration reading, speedometer roughly checked for inaccuracy and driving normally. The time was rather spoilt by the clutch-pedal sticking right down, which it had done several times previously, discarding its rubber cap the first time. However, 25 secs. dead was excellent and shows the advantage of having an ex-sports type engine in a saloon—the old Balilla model sports two-seater had an excellent reputation in competition. We thereafter started the stop-watch again and ran steadily London-wards, not hustling as much as we could have done if really trying, to average 43 m.p.h. to the middle of Kew Bridge, coming via the Oxford By-Pass, High Wycombe, Uxbridge and Southall.

Certainly this Fiat belies its small engine and easy performance in this ability to cover the ground. The extremely powerful headlamps assisted materially, although we would prefer a wheel or floor-location for the dimmer, which is worked by the lighting switch on the dash. If the switch was operated slowly the car ran temporarily *sans* lights, like a tram. The dim position gave a too limited spread-out beam. An excellent point was the provision of separate side lamps with visible indicators. The direction indicators appear to be mechanically controlled, from a fairly convenient central control on the facia. They tended to stick out, made a whistling intrude into the noise of air flowing over the body, and the near side one did not light up. The horn note could have been stronger, and the rear-view mirror destroyed its excellent area and position by vibrating excessively. The rear window gave ample view for reversing. We did not use the blind. The rear luggage locker is generous. Leather upholstery is used. The leg room for rear-seat occupants is limited, but passenger and driver find plenty of space in the front, and the left foot can be rested clear of the clutch. The front windows wind down fully, those at the rear half-down. There are "pulls" and neat push-down door locks on the sills, and the doors have pockets. They shut nicely and the pillarless construction is ideal from the viewpoint of entry and exit and of tidying up the interior. The doors tended to stick unless the catches were pressed home hard down. A sliding roof costs £10 extra. Some of the interior detail is cheaply finished but quite effective for its purpose. The facia carried, from left to right, a generous cubby hole with excellent spring lid; ignition control; panel light switch below; fuel gauge; hand throttle; speedometer; oil gauge; lighting and ignition switch below; starter; strangler; with bonnet catches for the bonnet top-panels below on each side. The horn is in the wheel centre. The panel light works by pushing in for lights on and in again to extinguish, and illumination is ample. The fuel gauge seems reasonably accurate but we suspected a "short" which made it register empty rather early; the starter control pulls out to operate the starter and was stiff to handle and noisy. The speedometer has no trip reading and no divisions between the speed figures, which mount in "tens." The gear-lever knob has the gear positions (conventional) inscribed thereon. There are effective twin screen wipers, with switch on the top screen sill. The interior lamp is centrally located and provides plenty of light.



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FIAT BALILLA SALOON—continued

Externally the door handles pull up to open the doors; a neat and practical layout. Bumper bars are standard. The big oil gauge carries markings at 25 and 50 lb. and showed about 23 lb. at tick-over and about 30 at cruising speed. It was not necessary to use the ignition control and no trace of pinking was evident, even on Cleveland fuel at 1/4½ per gallon. No water or oil was added. The bonnet sides open fairly easily and have props. The tool kit seemed rather abbreviated. There is an effective brake stop light and well-placed fuel filler.

In conclusion, the Balilla Fiat is a car of character, and performance above the average, and by reason of this liveliness and its typically Continental road-holding it can, as we have shown, put up average main-road speeds that could be bettered by only very good sports-cars. It has very smart yet unobtrusive lines, and at the price of £198 it represents very respectable value indeed. It comes within that enviable class of utility vehicle which can give much joy to an enthusiast normally impatient for a sports-type car. Full details are available from Messrs. Fiat (England) Ltd., Water Road, Wembley, Middlesex (Perivale 5651) and it may be inspected at the premises of Messrs. Hanover Motors Ltd., 12, Princes Street, Hanover Square, W.1 (Mayfair 5303).

MAXIMUM SPEEDS—REAL AND IMAGINARY

Letter writers to the weekly motoring papers have very optimistic and child-like faith in the accuracy of their car's speedometers. If they had reason, as we do, to conduct a considerable number of timed tests at Brooklands, they would save ink, paper and stamps. Naturally, owners of really fast cars are peeved at claims for absurd maximum speeds from cars, which, excellent in their class, were never intended by their designers to rank as suitable for ultra-fast touring on Italian or German motor-roads or for putting up sensational averages in M.C.C. High Speed Trials.

Recent letter-writer claims for a maximum in excess of 90 m.p.h. for the 2-litre M.G. number at least eight. That purchasers of higher-priced cars, who have reason to enjoy the possession of a really high speed (or the effortless performance endowed by designing that permits of high maximums), resent these claims is emphasised by challenges thrown out by owners of Alfa-Romeo, 4.3-litre Alvis and Chrysler cars. The only sort of proof of the M.G.'s actual speed came from "G.T." of Abingdon (Publicity Manager to The M.G. Car Co. Ltd., of Abingdon), who writes that a 2-litre saloon, unofficially timed at Brooklands, lapped at 80.98 m.p.h., and did the flying quarter-mile at 88.4 m.p.h., and the quarter-mile mean at 83.33 m.p.h., and the statement that R. R. Jackson's saloon was electrically timed over a kilometre of the Frankfort-on-Main Autobahn during the German record week at 85.5 m.p.h. The 2-litre M.G. was introduced over two years ago, and so far the only detailed road-test report on it has been one published in the official organ of the M.G. Car Co. Ltd., when the maximum speed was quoted as 87 m.p.h., and it was not made clear whether by watch or speedometer-reading. We suggest that this car should be road-tested by independent motor papers—MOTOR SPORT will be very pleased to oblige.

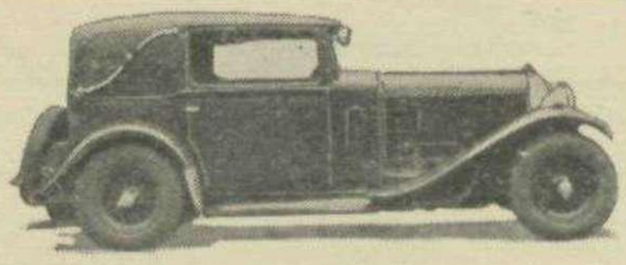
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There will be a rally to the venue, with four classes, embracing all pre-1905 cars up to 20 h.p. Rally competitors are required to reach the Godstone check not later than 1.45 p.m. The 1903-4 cars have to cover at least 150 miles, and the route is left to the discretion of the entrant. Entries close on March 30th. If you cannot attend the Empire Trophy Race at Donington on this day, get to Tilburstow and have your camera with you.

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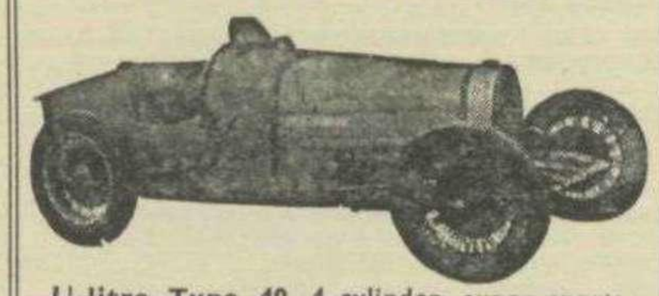
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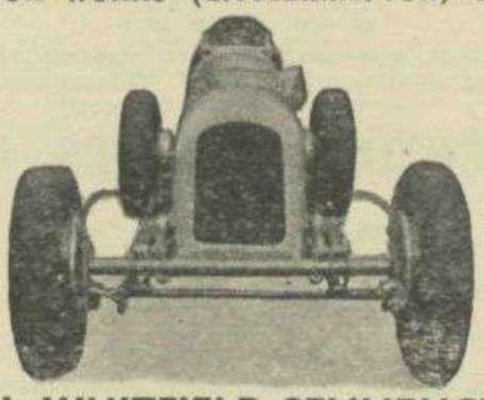
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Luxor goggles, No. 6, Meyflex lenses ... 45/-
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S. LEWIS'S

27 CARBURTON ST., LONDON, W.

EUSTON 4793

A SELECTION OF MOTOR SPORT ROAD TESTS

THAT HAVE APPEARED IN PAST ISSUES

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
Alfa-Romeo 22.90 h.p. 6-cyl. (push-rod) super sports test chassis	April 1927
Alfa-Romeo 1½-litre supercharged 6-cyl. Charles 2-seater (1929)	March 1934
Alfa-Romeo 1½-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
Amilcar 4-cyl. 1,100 c.c. "Grand Sports" 2-seater July 1927 & May	1926 & Jan. 1925
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 1935
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
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
Austin Seven sports 2-seater	July 1930
BENTLEY 3-litre, 4-cyl., 4-seater (1927)	Jan. 1932
Bentley 3½-litre, 6-cyl., Vanden Plas, 4-seater	Nov. 1933
Bentley 4¼-litre, 6-cyl., Park Ward saloon	June 1936
Bentley 4½-litre, 4-cyl., supercharged 4-seater	Jan. 1931
Bentley 6½-litre, 6-cyl., long-chassis saloon (1928)	Dec. 1936
Bugatti 11.9 h.p., Modified Brescia 4-seater	Aug. 1925
Bugatti 1½-litre, 4-cyl., Type 37 G.P. 2-seater	Sept. 1926
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 1936
Bugatti 3-litre 8-cyl., Type 44, saloon	July 1928
CROSSLEY 20/70 h.p., 4-cyl., s.v., 4-seater	Nov. 1925
Crossley Ten, 1¼-litre "Regis" saloon	Jan. 1936
Crossley Ten, 1,122 c.c. 4-seater	April 1932
Crouch Anzani 12.30 h.p., 2-seater	Aug. 1924
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
Ford V8, 30 h.p. saloon	April 1936
Ford V8 30 h.p. "Greyhound" 4-seater	Jan. 1933
Ford L.M.B. Epoch 10 h.p., 4-seater, supercharged	Sept. 1936
Frazer-Nash-B.M.W., 2-litre, Type 45, saloon	Feb. 1937
Frazer-Nash-B.M.W., 2-litre Type 55, 2-seater	Nov. 1935
Frazer-Nash Anzani s.v. super-sports, 4-seater	Feb. 1927
Frazer-Nash 6-cyl., 1½-litre (Blackburn) 2-seater	July 1933
Frazer-Nash 4-cyl., 1½-litre push-rod o.h.v. "Interceptor" 3-4-seater	Jan. 1931
Frazer-Nash 4-cyl., 1½-litre T.T. Replica push-rod o.h.v. 2-3-seater	Nov. 1931
INVICTA 12/90 h.p. 1½-litre supercharged 4-seater	Oct. 1932
Invicta 4½-litre low-chassis, 4-seater	March 1931
Invicta 4½-litre Weymann saloon	June 1929
Invicta 4½-litre saloon	Dec. 1929
LANCIA AUGUSTA 11.9 h.p., saloon	Sept. 1934
Lancia Astura, 25 h.p., 8-cyl., James Young saloon	Nov. 1932
Lancia Dilambda 31 h.p., 8-cyl., saloon	Dec. 1930
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 2-litre 6-cyl., "Ace-of-Spades" saloon	Nov 1930
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 38.250 h.p., supercharged, 2-4-seater	Nov. 1929
Mercedes-Benz 33.180 h.p., supercharged, 4-seater	Aug. 1927
M.G., 6-cyl., Mark I, 4-seater	May 1931
M.G. Midget Jarvis 3-4-seater	Jan. 1931
M.G. Magna, 12 h.p. Abbey 4-seater	Feb. 1932
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. Midget 750 c.c. Montlhery supercharged 2-seater (1931)	May 1932
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
RILEY NINE "Gamecock" 2-seater	March 1932
Riley Nine "Monaco-Special," two-carb. saloon	March 1931
Riley Nine, 4-seater	June 1931
Riley Nine "Monaco-Special" saloon	July 1930
Riley Nine "Brooklands" racing 2-seater	July 1930
SALMSON 1,100 c.c. o.h.c., Grand Sports 2-seater	Jan. 1926 & Dec. 1926
Salmson 4-cyl., twin o.h.c. Grand Sports 2-seater (1928)	April 1931
Singer 1½-litre, 6-cyl., Le Mans 2-str.	March 1935
Singer Nine, 4-seater	March 1933
Squire 1½-litre, 4-cyl., 2-seater	Aug. 1935
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
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
VALE-SPECIAL 832 c.c. 2-seater	Aug. 1933
Vauxhall 30/98 O.E. 4-seater	Sept. 1925
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. "Velox" saloon	May 1929
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
Vernon-Derby 1,100 c.c. (Ruby) 2-seater	March 1928
WINDSOR 4-cyl., 11 h.p. "Special" 2-3-seater	Nov. 1926
Wolseley Hornet Swallow 2-seater (1933)	April 1934
Wolseley Hornet Abbey AS.3 2-4-seater	Jan. 1932
Wolseley Hornet E.W. "Daytona-Special" 4-seater	May 1932
Wolseley Hornet Boyd-Carpenter 2-seater	Jan. 1931
Wolseley Hornet (12.08 h.p.) saloon	Sept. 1930

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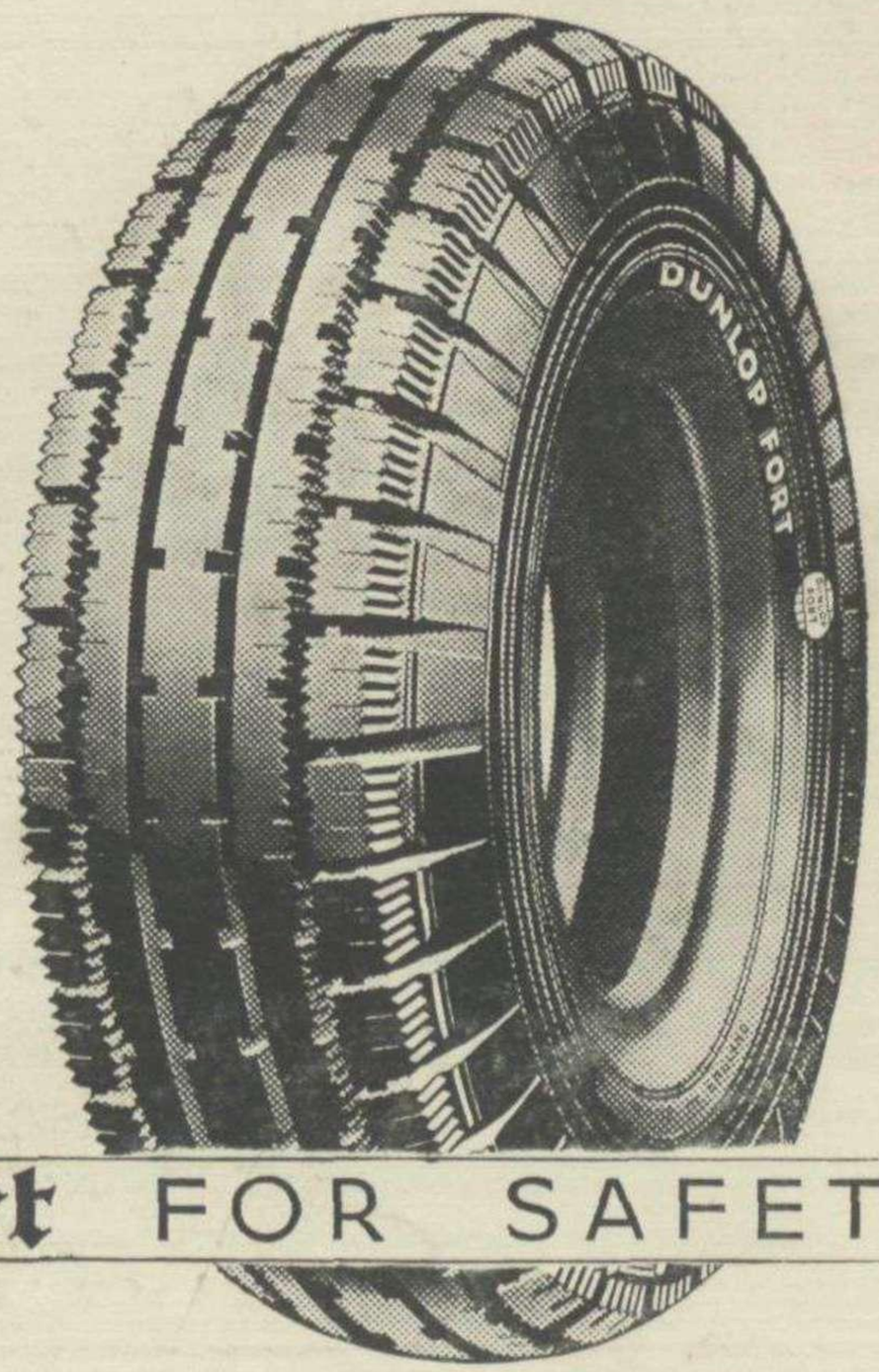
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Printed by Tee & Whiten and J. Mead, Ltd., 21, City Road, London, E.C.1, and Published by The Teesdale Publishing Co., Ltd., 21, City Road, London, E.C.1. Agents for Australasia: Gordon and Gotch (Australasia) Ltd. Copies obtainable and subscriptions received by W. H. Smith & Son, 248, Rue de Rivoli, Paris: and W. H. Smith & Son, 71/75, Bld. Adolphe Max, Bruxelles