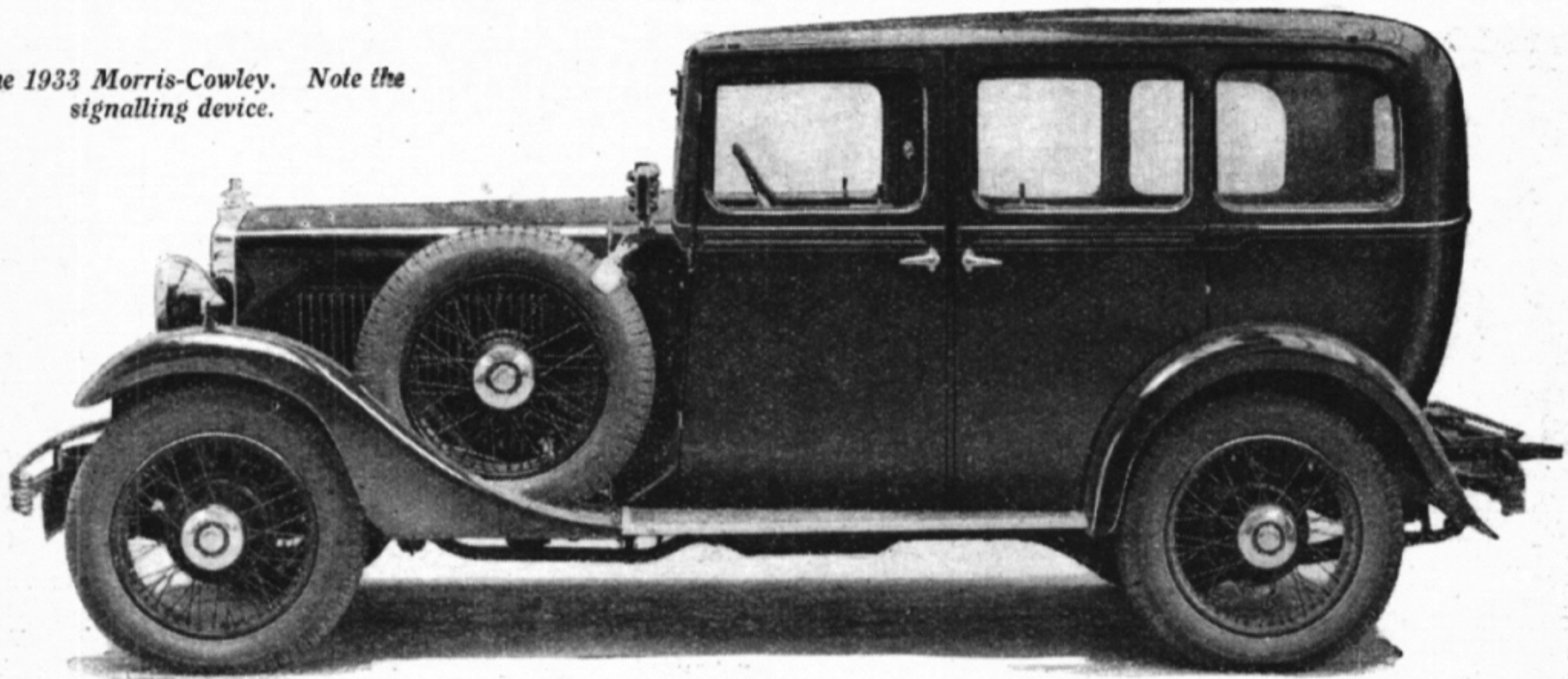


The 1933 Morris-Cowley. Note the signalling device.



MORRIS 1933 PROGRAMME

AMONGST those leaders of industry who, in the face of industrial depression, have never lost their optimism is numbered Sir William Morris. That has been made clear by his public utterances on many occasions, but if proof of it be needed it is to be found in the 1933 programme of Morris Motors, Ltd., and in the progressive policy behind it.

Briefly the 1933 programme completely covers the range from a small 8 h.p. open two-seater at £100 to a roomy, comfortable, and handsome five-seater saloon at £350, there being in all twenty-six distinct models available on the six distinct chassis, which, incidentally, are rated at 8 h.p., 10 h.p., 12 h.p., 14 h.p., 16 h.p. and 18 h.p., the first three having four cylinders and the last three six cylinders.

Naturally, the greatest interest lies in the new "Ten," but in order to prevent any confusion arising it will be better to deal with the range in logical order from the lower end. Thus, there are seven models of the Morris Minor, and the two-seater tourer at £100 is virtually unchanged and has a three-speed gear box and worm and wheel steering as the major differences from the other Minor models. On the latter a new, deeper radiator and a slightly longer bonnet add considerably to the appearance, while a four-speed gear box with a twin-top silent third is now standardised, as also is Bishop cam steering. This model is available as a two-seater tourer at £105, and also as a four-seater tourer at £115, while a fixed head saloon costs £122 10s., and a sliding head saloon £125, so that there are, therefore, five ordinary Morris Minor models.

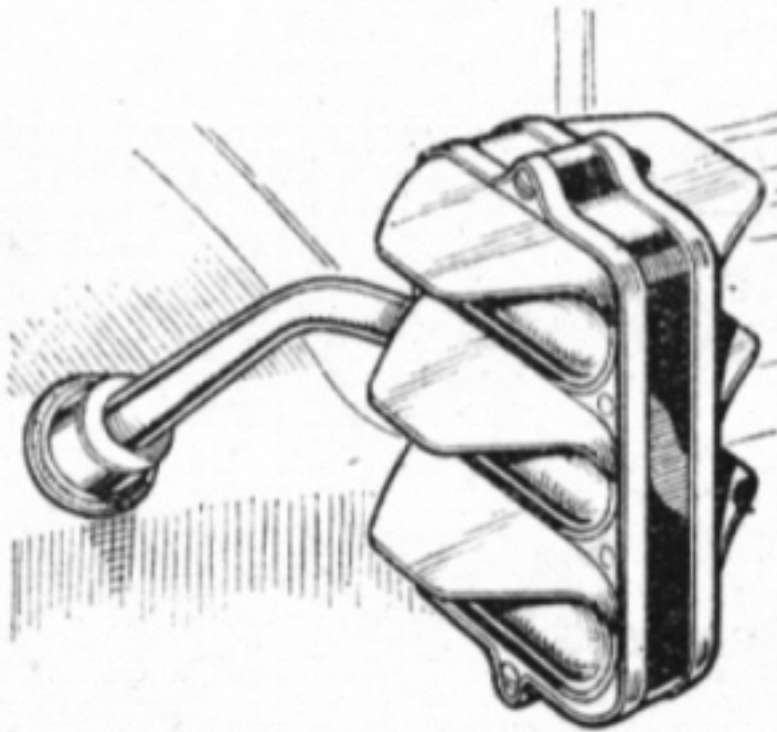
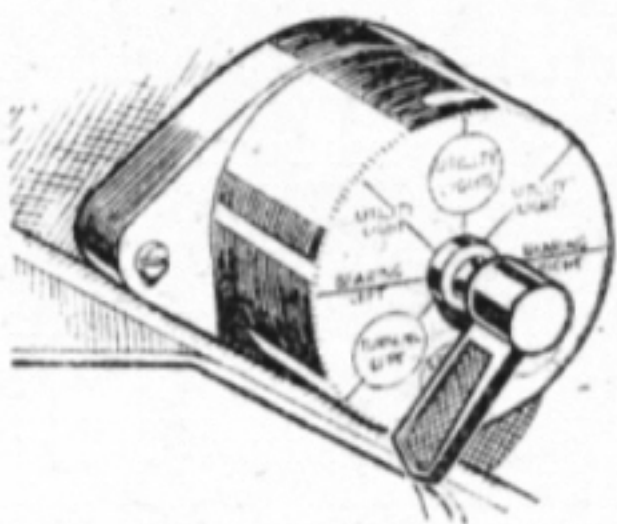
In addition, a longer wheelbase chassis to the same specification is now offered with a four-door, full four-seater sliding head saloon body at £145, or with a sliding head special coupé body at £165. The wheelbase of this model is 7ft. 7in., instead of 6ft. 6in. for the ordinary Minor, while it has the 8 h.p. side-valve engine of 57×83 mm. bore and stroke (847 c.c.), and the four-speed gear box with double-helical constant mesh and third gear pinions. This box is on the

A New 10 h.p. Four-cylinder Model, a Long Wheelbase Minor, and an Improved Oxford with a New 16 h.p. Engine are Important Features of a Very Complete Range. Prices Remain Unaltered but Include Enhanced Value.

most up-to-date lines, with a cast-iron case, and gives ratios of 20.75, 12.48, 7.902, and 5.375 to 1 in conjunction with the rear axle ratio.

The New "Ten"

Undoubtedly the new "Ten" offers a remarkable combination of performance, accommodation, and appearance at a very moderate price. It may be men-



The Morris signalling device with its control

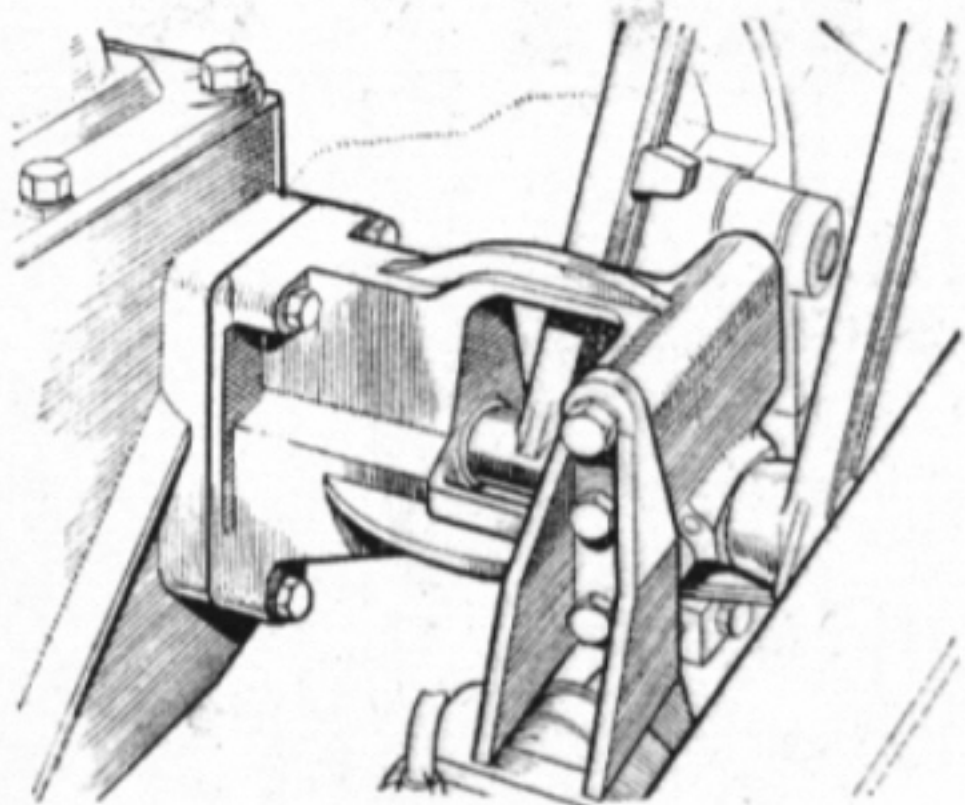
tioned that it has been very rigorously tested under most exacting conditions on most of the known, and on many unknown, mountain roads in the British Isles, as is shown by a most instructive and excellently produced film which Morris enthusiasts will shortly have an opportunity of seeing, and from which they will inevitably conclude that the new "Ten" is capable of very prolonged service in normal conditions.

Briefly, the specification includes a four-cylinder water-cooled engine, with an enclosed clutch and four-speed twin-top gear box built in a unit with it, mounted on four points in a strong down-swept frame supported on long half-elliptic springs assisted by friction-type shock absorbers.

The engine has a bore and stroke of 63.5×102 mm. (1,292 c.c.) and is rated at 10 h.p. Cylinders and crank case form a single casting extending well below the crankshaft level, and strongly reinforced with internal webs, so that a very rigid structure results. The side valves are inclined at a slight angle on the near side of the block, and the combustion chambers are completely machined to ensure equality of compression and the minimising of carbon deposit. Considerable care has been taken with the water jacketing, especially round the valves, so as to ensure cooling which shall be adequate for all requirements.

Pistons are of aluminium alloy, with three pressure rings at the top and a scraper ring at the bottom, and the pins are fixed in the little ends of the steel connecting rods, which have white-metal big-end bearings of full ring type, the white metal being run directly into the steel. The crankshaft has three large bearings and is balanced both statically and dynamically. Die-cast white-metal main bearings are so accurately machined that hand fitting is unnecessary, and interchangeability is assured should a replacement ever be needed.

Three bearings are also provided for the camshaft, which is driven by a duplex chain from the crankshaft. The tappets are of the ordinary type; they are spring loaded to ensure



Mounting of pedals on the gear box on the Morris-Oxford.

silent operation, and are given an unusually large clearance, 0.019in., although this has not affected the silence of operation. The tappets are mounted as two units which can be completely removed without interfering with other components. The camshaft is also spring loaded to obviate "flutter," and a helical pinion at the centre of the shaft engages with a similar pinion on a shaft running diagonally across the engine.

From this diagonal shaft both the oil pump and the coil ignition distributor are driven, the pump being located externally on the near side of the crank case and supplying oil under pressure through an external pipe to all bearings, and also to the clutch. Combined with the pump casing is a relief valve, while a gauze filter of large area is fitted to the top of the sump so that all oil is efficiently filtered before it is taken in by the pump. A large and accessibly situated filler is fitted on the near side.

Also on the near side is the combined inlet and exhaust manifolds, so formed to give hot spots to assist vaporisation. The S.U. carburetter has the air intake connected to a combined air cleaner and fume extractor mounted over the top of the detachable cylinder head, giving the engine at first glance the appearance of having overhead valves. This cover contains in its upper part a large filter of horsehair, through which the air passes on its way to the carburetter, and passages in the cylinder block conduct the oil fumes from the crank case up into the cover, where they mix with the air stream. Air enters the cover in holes positioned opposite the sparking plugs, so that streams of cool air pass over the plugs, this arrangement both cooling the plugs and warming the air.

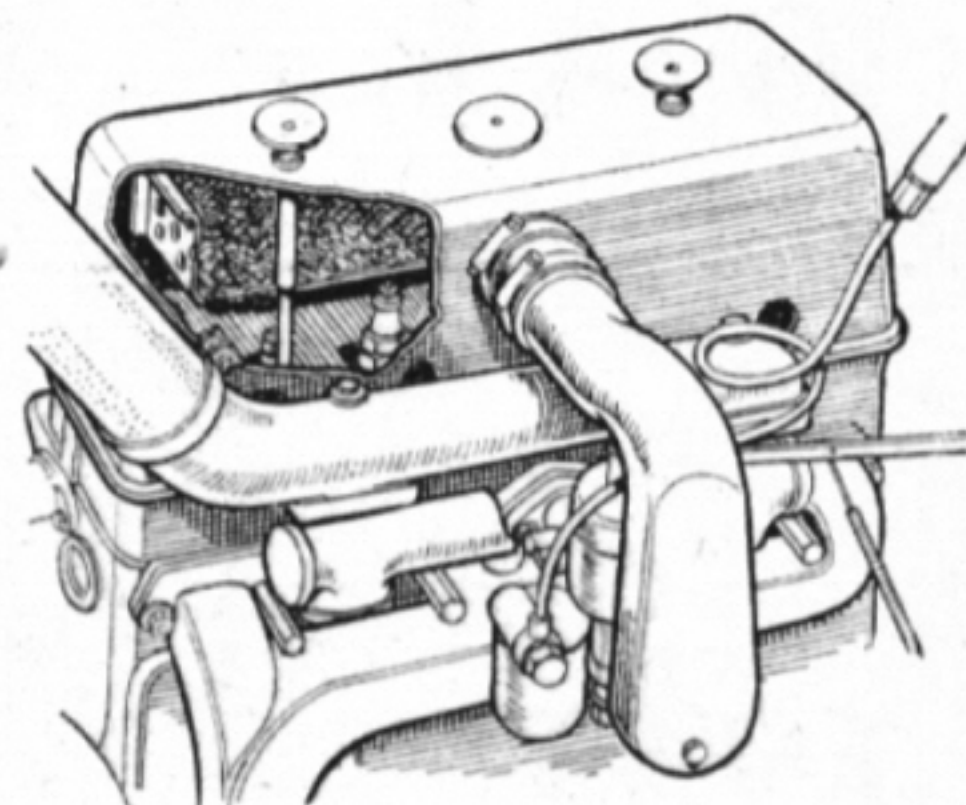
Cooling is by thermo-syphon action, with large water passages, and the radiator is assisted by a four-bladed fan

driven by an endless V belt from a pulley on the crankshaft. This belt is also used to drive the dynamo, located on a bracket on the off side of the engine, the dynamo mounting forming a simple means of adjusting the belt tension, since the armature shaft is eccentrically placed in relation to the cylindrical carcass. It is thus an easy matter to adjust the belt by slackening the dynamo bracket and rotating the body of the instrument.

On the off side of the engine the distributor is very accessible, and is driven from the top end of the diagonal cross-shaft. The starting motor is located on the rear side of the gear box, and on the dash is an S.U. automatic electric Petro-lift supplying the carburetter from the rear tank, which has a capacity of seven gallons, and the contents of which are indicated to the driver by an electrically operated gauge on the instrument board. The carburetter jet control for easy starting is by means of a neat flexible cable device.

The clutch is of the single-plate type with cork inserts, and it runs in oil, receiving its supply from the pump through the spigot bearing. The clutch is, however, enclosed by a cover plate in which there are gauze breathers. Excess oil finds its way through the breathers into the flywheel casing and is thrown up by the flywheel into a gallery which conducts it back to the sump, where it has to pass through the gauze filter before again going into circulation. Any particles of cork from the clutch are prevented from finding their way into the oil by the gauze breathers in the cover plate.

Cast iron is used for the gear box case, and the constant mesh and third speed



Air cleaner and fume extractor, and manifold arrangements on the new Ten.

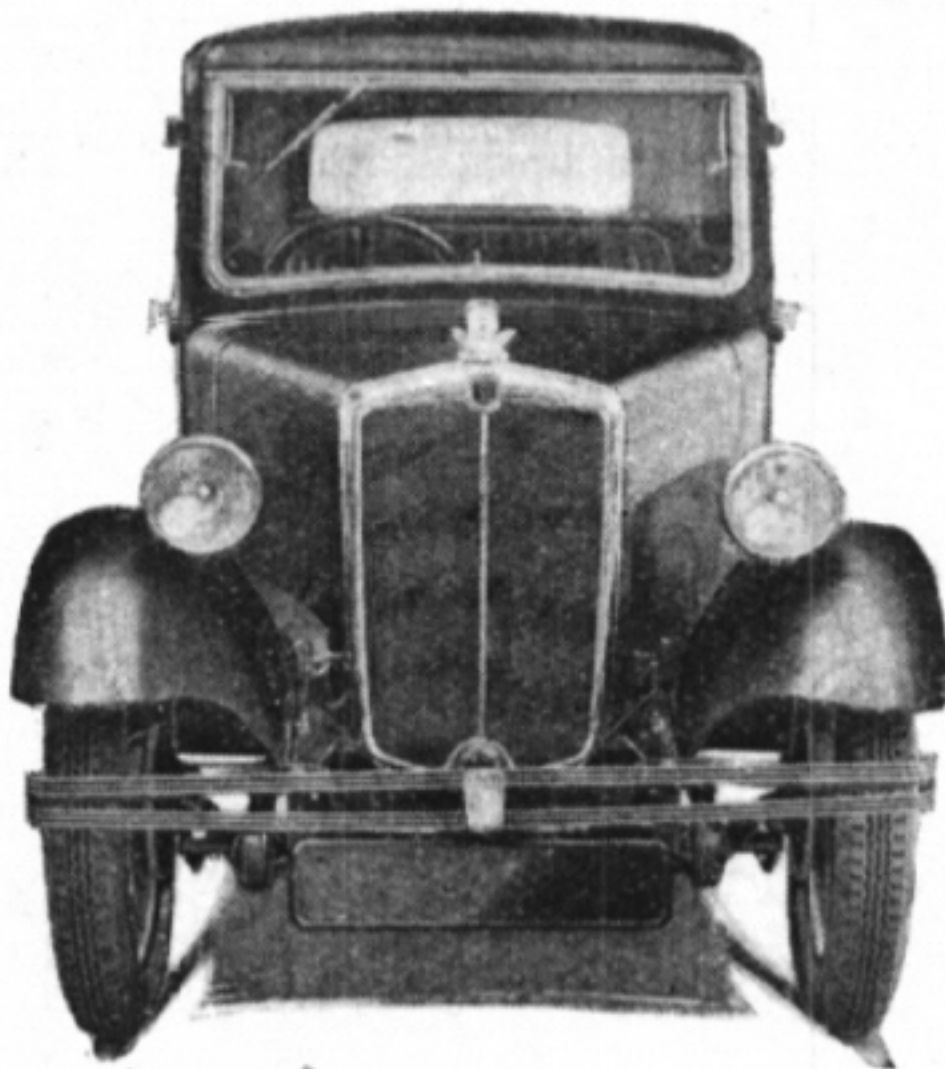
gears are of double helical pattern to ensure silent operation. A large filler plug and a dipstick are included in its design. From the gear box power is transmitted to the rear axle by a balanced propeller-shaft with a fabric disc joint at each end in which are incorporated centring steadies. The ratios given by the gear box in conjunction with the final drive are 18.66, 10.57, 6.9 and 4.7 to 1.

The rear axle follows the usual Morris practice and has a spiral bevel drive, lubrication of which is rendered easy by an accessibly placed filler plug and also an oil level indicator. Long half-elliptic springs are used at front and rear; the front springs are shackled at their forward ends, and the rear springs are slung beneath the axle and inclined inward slightly, their forward ends being mounted within the frame.

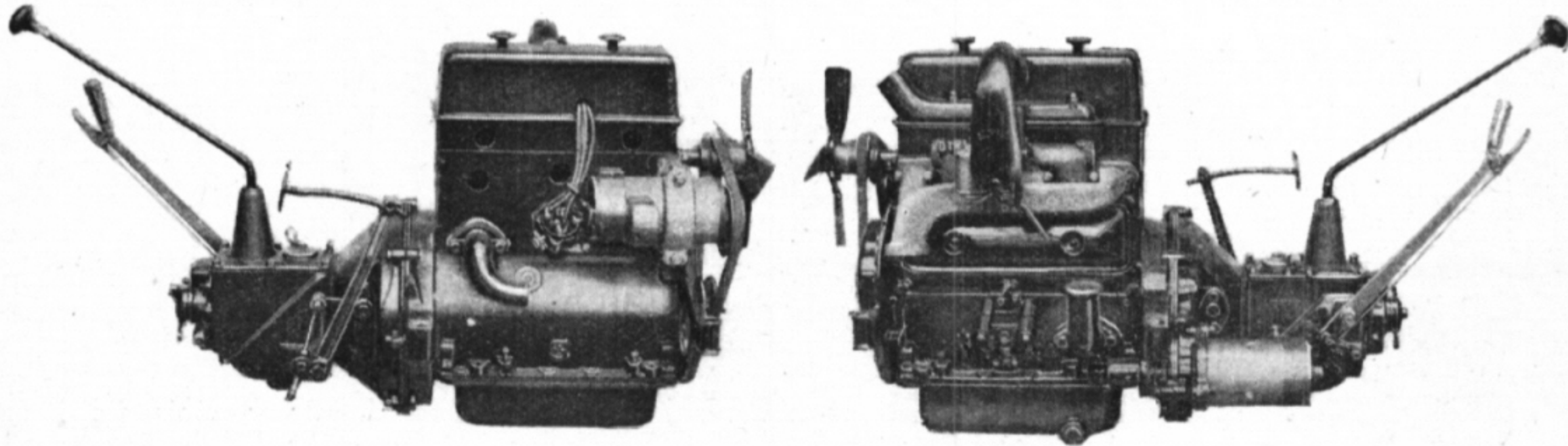
Steering is by the Bishop cam gear, and Lockheed hydraulic four wheel brakes are standardised, with the rear shoes also operated from the brake lever through cables. Magna type wire wheels carry 4.40 x 19in. Dunlop tyres.

Owing to the design of the frame, which is downswept, a low centre of gravity is obtained and should materially enhance stability on the road. The side-members are of deep section and are rigidly braced by suitable cross-members, while the general design allows the utmost to be made of the body space available, so that on a wheelbase of 8ft. and a track of 4ft. very roomy bodies are made possible, these being a fixed head saloon at £165, a sliding head saloon at £169 10s., and a special coupé with a sliding head at £195.

Four wide doors and four really commodious seats are features of the saloons, which are of six-light type with the doors closing on the central pillars. Despite its roominess the car does not appear



Front of the latest Morris Minor. (Below)
The engine of the new Morris Ten



over-bodied, and its deep sides and swept wings with side valances give it excellent proportions. The spare wheel is mounted at the rear and a rigid folding luggage grid is fitted. The general specification includes Triplex glass throughout; finger-tip control for ignition, dipping head lamps, and horn; single panel adjustable screen; winding windows; door locks; rubber covered pedals; silk rope door pulls, dual blade electric screen wiper; scuttle ventilators; rear blind with remote control; door pockets; radiator thermometer; and interior driving mirror, while the instrument board carries speedometer, clock, oil gauge, and petrol gauge, with diffused illumination at night.

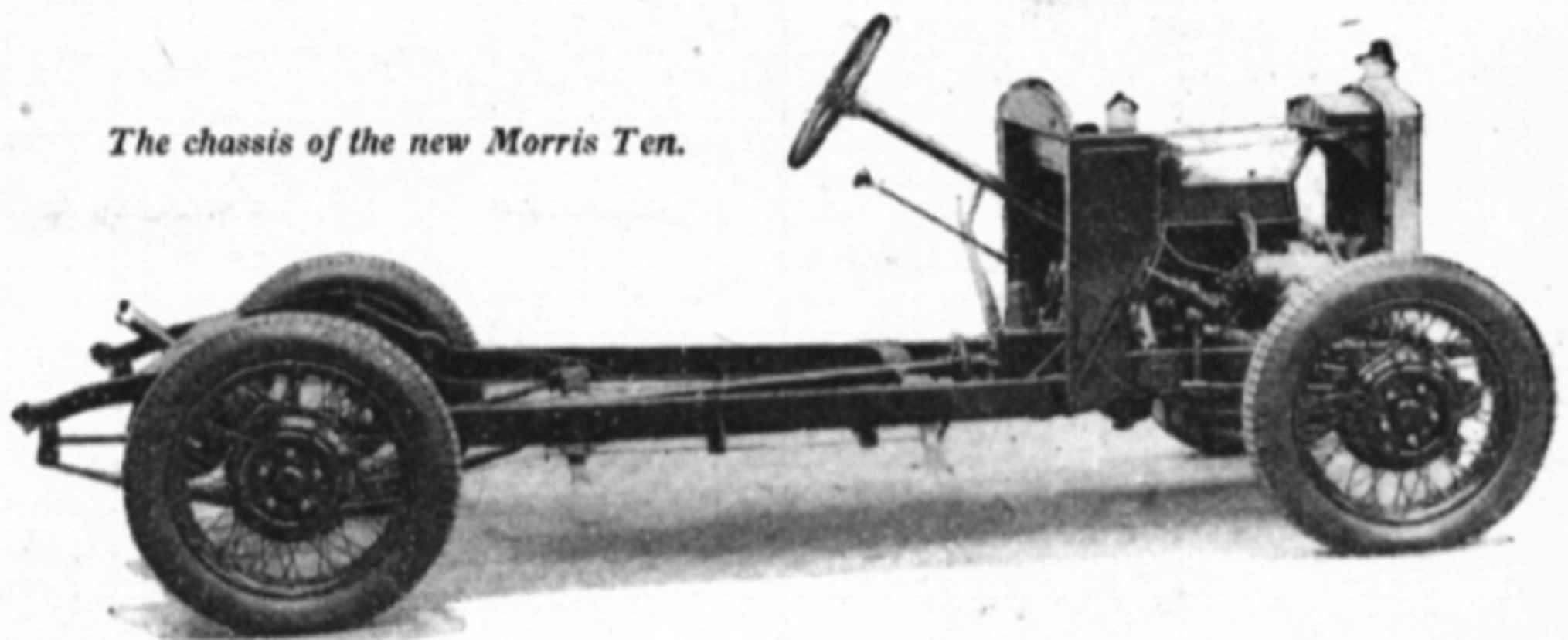
Another fitting which appears on the Ten and other models upwards is a direction indicator consisting of two sets of International code signal lights mounted one on each side of the scuttle, so as to be easily visible from both front and rear. These indicators show red, amber, or green lights to indicate changes of direction, and are controlled by a switch on the dash conveniently placed for operation by the driver.

Modifications to Cowley Engine

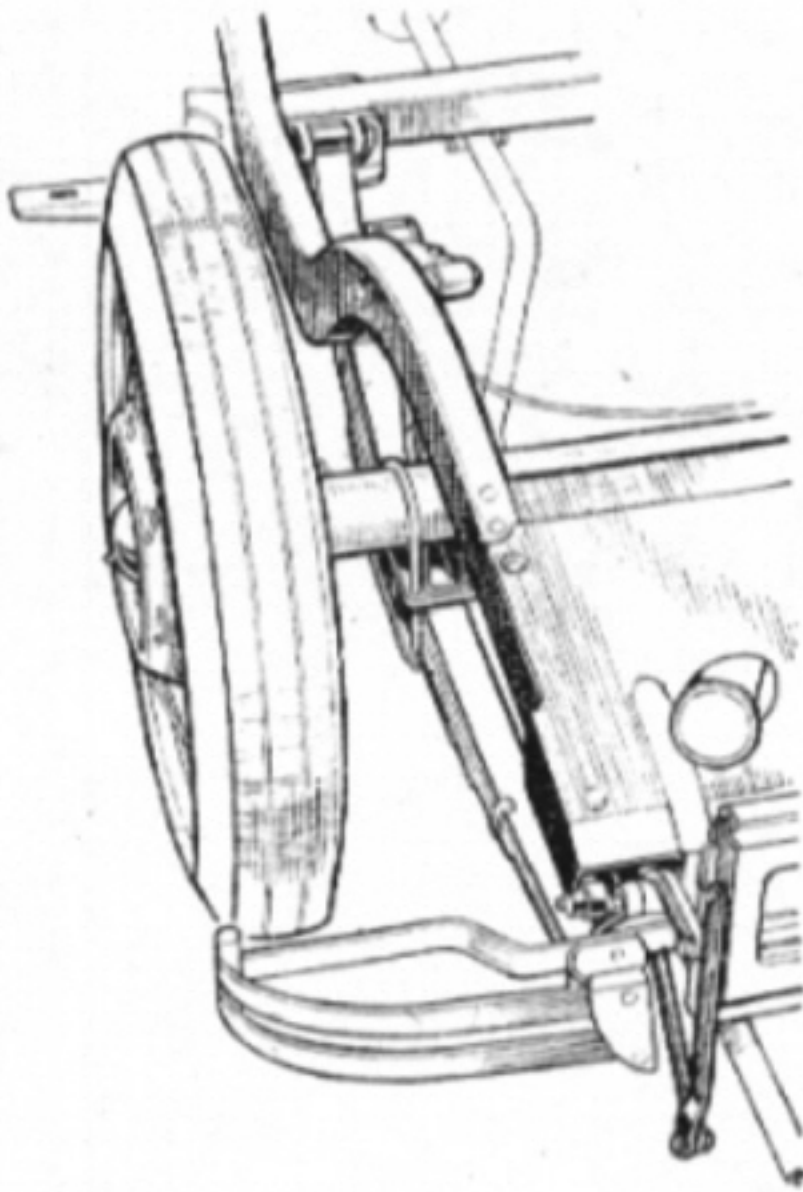
On the Morris-Cowley certain modifications have been made to the engine, and the camshaft is now driven by a duplex roller chain, while the distributor is driven by skew gears and a short diagonal shaft from the camshaft, the coil being mounted transversely at the front of the engine. A new clutch housing carries the 12-volt dynamotor, which is a well-known feature of this model, and a four-speed twin-top gear box is now fitted, the result of the engine modifications and the gear box being greater power and smoothness, and an appreciably livelier performance. Hydraulic shock absorbers are another modification which has been made.

On this chassis there are available a two-seater tourer at £165, a sliding head coupé at £190, and a saloon with a fixed head at £179 10s., or with a sliding head at £185. In addition, the special coupé with a sliding head costs £215, and a traveller's saloon is available at £195.

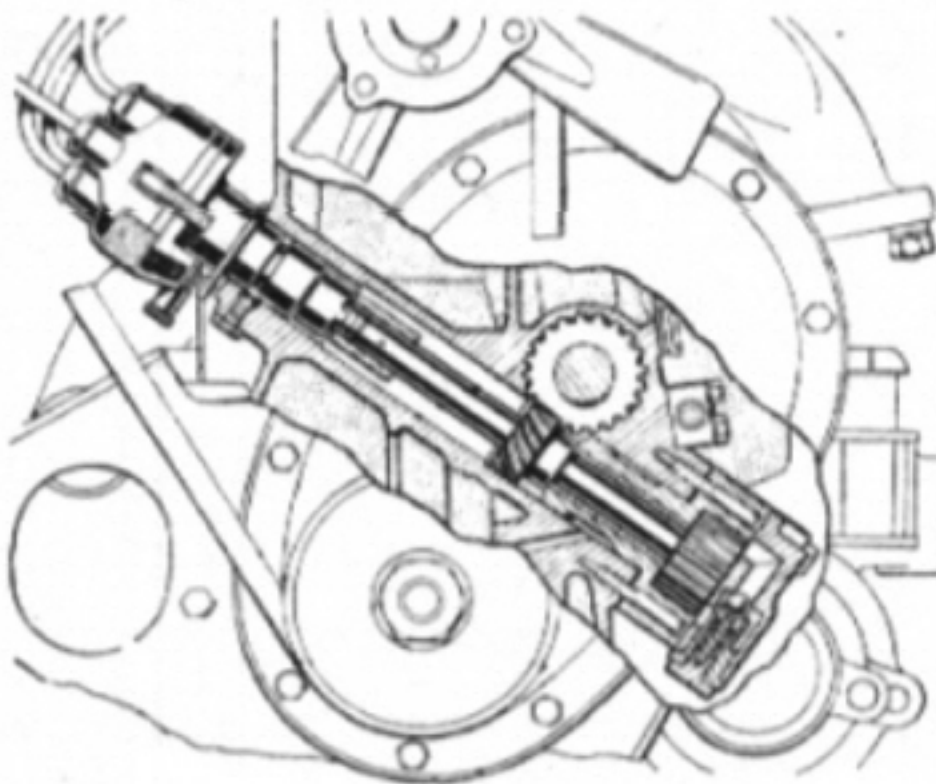
So far as the Morris Major Six is concerned only minor modifications have been effected, including the fitting of hydraulic shock absorbers. A range of five models is available on this chassis, these being respectively a four-seater tourer at £210, a sliding head coupé at £225, a saloon with fixed head at £199 10s., or with sliding head at £215, and the special coupé at £245. It must not be forgotten that on these models are



The chassis of the new Morris Ten.



Rear spring mounting on the Ten.



Cross-shaft drive for distributor and oil pump on the Ten.

included the general 1933 improvements which are common to the range, such as the swept wings with side shields, the direction indicator, and stop light automatically controlled by the brake pedal, so that generally value has been enhanced.

Considerable improvement has been made in the 1933 Morris-Oxford, as a re-designed and larger engine is fitted. This new engine has naturally made an appreciable difference to the car's performance, giving it a greater reserve of power in all conditions.

Cylinders and crank case form a single casting reinforced by internal webs to give strength and to form a rigid support for the four-bearing crankshaft. The bore and stroke are 65.5 x 102 mm. (2,062 c.c.) and the rating is 16 h.p. Side-by-side valves are fitted, and the detachable head has the combustion spaces machined all over. Aluminium pistons carry four rings, and the connecting rods are steel with white metal big-end bearings.

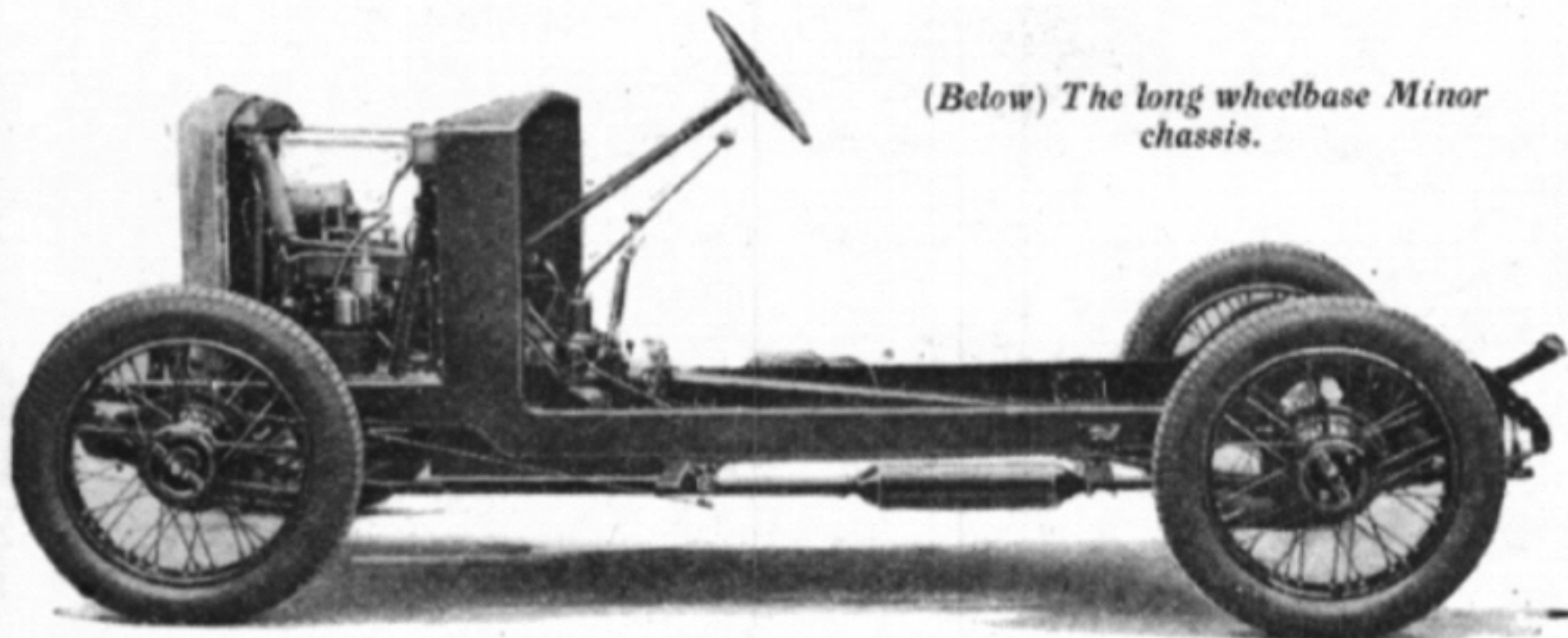
Bearings of maximum size support the crankshaft, die-cast white metal being used, and the shaft is balanced both statically and dynamically. Four bearings of large size are also provided for the hollow camshaft, which operates the valves through spring-loaded tappets arranged in three units of four each, so that they can easily and conveniently be removed. A duplex roller chain forms the camshaft drive and also drives the dynamo.

New Oxford Engine Details

Across the engine runs a diagonal shaft driven by skew gears from the camshaft, and the upper end carries the coil ignition distributor while the lower end operates the spur gear type oil pump, which is mounted externally on the near side of the crank case and which supplies oil under pressure to main, big-end, and camshaft bearings, also to the camshaft chain drive and to the clutch.

Cooling water is circulated by a centrifugal pump in the front of the cylinder block driven off the end of the fan spindle, which has a V belt drive from a pulley on the crankshaft. Belt tension is varied by an adjustable pulley on the fan spindle. The water is circulated upwards from the base of the cylinders and passes from the cylinder head by three ports so positioned as to give an even temperature distribution. The radiator is fitted with shutters controlled by a thermostat.

Mixture is supplied by an S.U. carburettor fed from the 12-gallon rear tank by an S.U. Petrolift, and a feature of the induction system is the combined air cleaner and fume extractor. The inlet



(Below) The long wheelbase Minor chassis.

Morris 1933 Programme

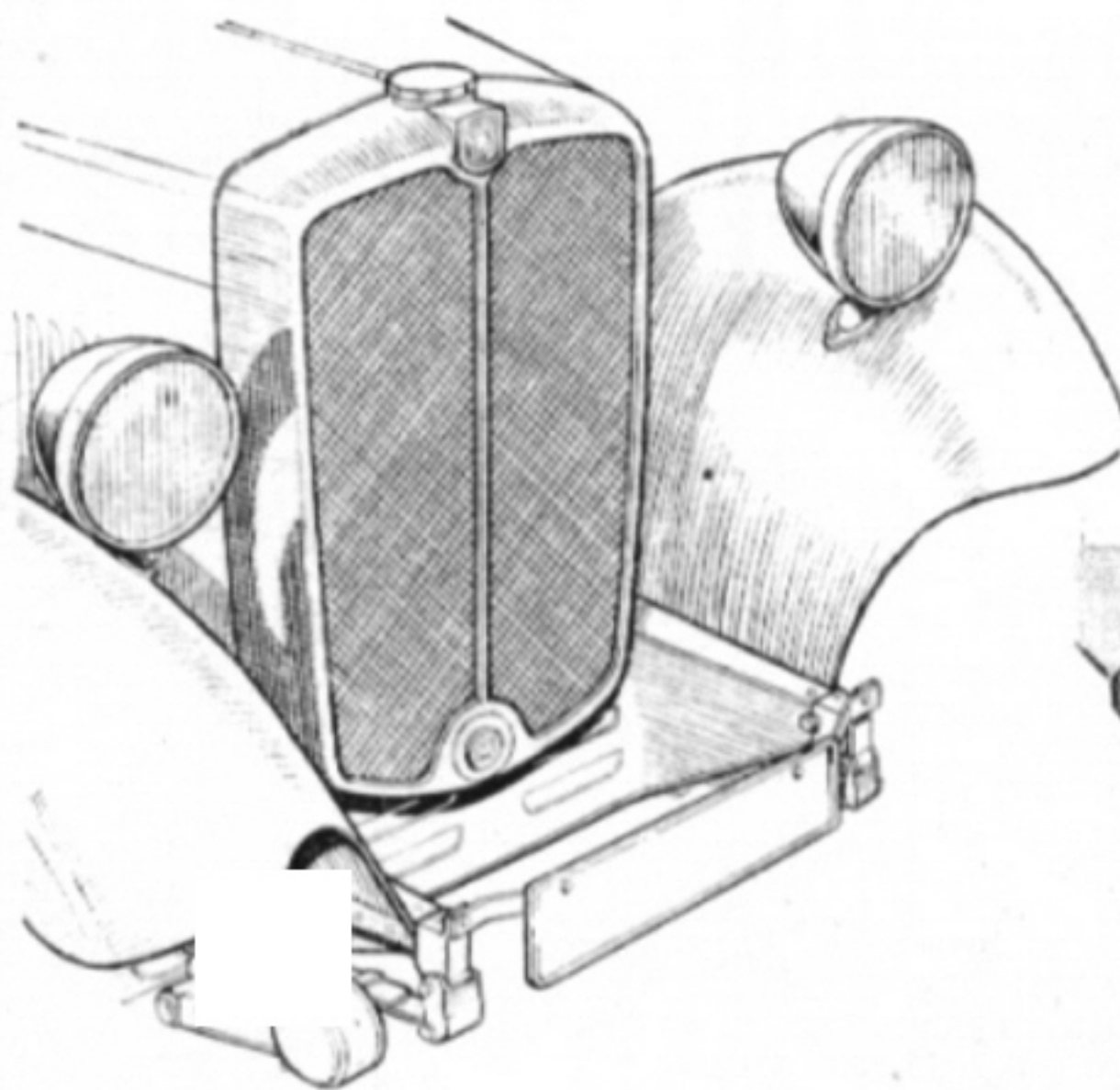
and exhaust manifolds are integral and include adequate hot spots.

With the engine are combined a single-plate clutch with cork inserts, similar to that fitted on the new Ten, and the four-speed twin-top gear box having double helical constant mesh and third speed pinions. On the side of the gear box casing, which is of cast iron, there is mounted the brake and clutch gear assembly. From the gear box an open zin. diameter balanced propeller-shaft with Hardy-Spicer universal joints takes the drive to the spiral bevel rear axle, features of which are a large filler plug, well positioned, and a level plug.

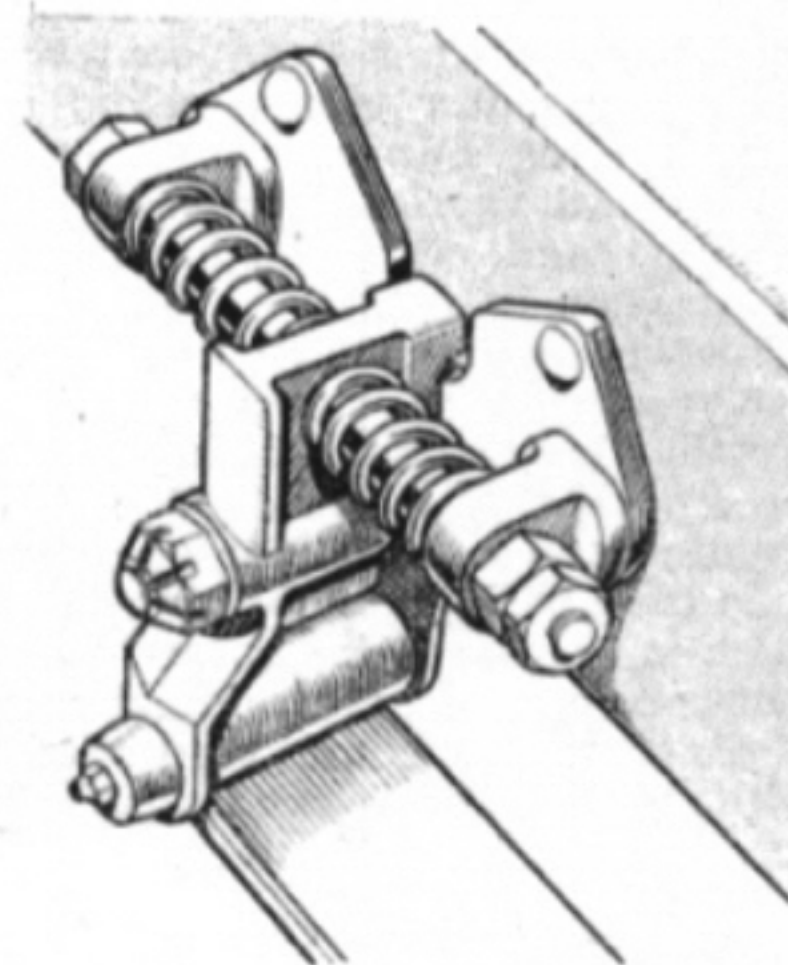
The frame is parallel in plan and straight except for the rise over the rear axle, while it is of deep section and is well supported by the strong cross-members which extend to carry the body. The long half-elliptic springs are assisted by double-acting hydraulic shock absorbers, and check straps are now fitted to the rear axle. Bishop cam steering, with a spring-controlled anchorage for the rear end of the off front spring, and Lockheed hydraulic brakes complete the chassis specification.

Three Morris-Oxford models are available: the coupé at £275, the saloon at £265, and the special coupé at £285, and all have sliding heads. The saloon is a handsome four-door six-light body of modern lines, with deep sides, eddy-free head, valanced swept wings, and louvres over all windows. Triplex glass is fitted throughout, the wheel carries finger-tip controls, the single-pane screen is adjustable, and the equipment includes pile carpets, pedal rubbers, silk cord door pulls, rear blind with remote control, door pockets, scuttle ventilators, automatic starting by Lucas "Startix" switch, and dual blade electric screen wiper.

Finally, the Isis is little changed, although it has been improved in many details. One of the most important modifications is the addition of a torsional vibration damper to the front end of the crankshaft, to give even smoother running. It also has the enclosed type of single plate clutch with cork inserts,



(Left) The Minor has a new deep radiator shell, which carries a stone guard. (Below) Spring-controlled anchorage for rear end of the off-side front spring on the new Oxford.

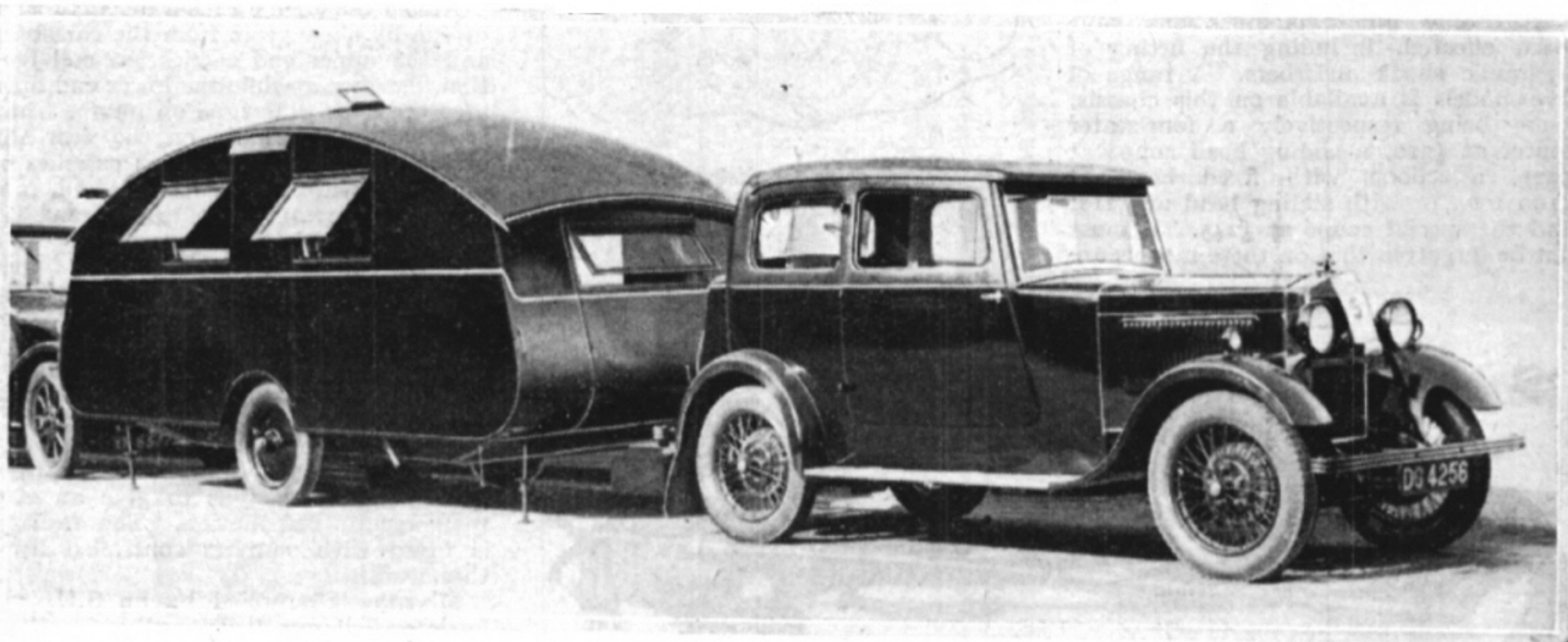


and the Startix switch for the starting motor control, giving automatic action when the ignition key is turned.

The saloon now gives additional room and comfort, and has central opening doors and a sliding head, while the main seat has side arm rests and a folding centre rest, its squab having a head rest and corner head rest cushions also being provided. The soft leather upholstery is relieved by burr walnut garnish rails, to match the fascia board, in which lockers are formed at each side. Large door pockets are provided, also blinds to the quarter and rear windows, with a remote control to the rear blind, concealed door checks, internal Panoram mirror, and double screen wiper. At £350 it offers really luxurious comfort, coupled with a smooth, quiet and lively road performance, at a moderate cost. The special coupé at £350 also has a sliding head and has been much improved in the comfort afforded by the rear seat.

From the foregoing some idea of the completeness of the Morris range will have been formed, but as regards general equipment and improvements in detail the following particulars make a useful summary. Thus, the organ pedal type

of accelerator is fitted on the Cowley models and upwards, a rear blind with remote control is found on all closed models, Triplex glass is used throughout the range, the four-speed twin-top gear box is included on all models except the £100 Minor, a dual blade screen wiper and the red-amber-green light traffic indicator are on the new Ten and upwards, Bishop cam steering is on all but the £100 car, a quick-action filler cap is on all petrol tanks, Lockheed brakes are used on the Ten and upwards, an S.U. Petrolift is used on all models, also a rear tank and a dash-reading electric petrol gauge, stone guards are fitted on the Cowley tanks and upwards, radiator stone guards are fitted on Minor, Ten and Cowley models, and automatic radiator shutters on Major, Oxford and Isis cars, while window louvres are fitted to Major, Oxford and Isis sliding head saloons and to all special coupés.



One of the most outstanding caravan outfits in "The Autocar" Rally at Minehead last week-end. An all-black Morris Major and a Winchester caravan to match, owned by Capt. W. E. Caldbeck, who was awarded second prize in the Two-berth Class.