

THE M.G. MARK III

Designed to Conform with International Racing Regulations and Turned Out Prepared for Racing.

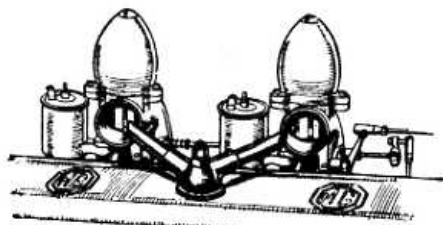
BY reason of a certain silken swiftness of running and an appearance ir-^{re-}bitably elegant, the M.G. Six Mark II has gained many ardent admirers. As a result, a demand arose for a model with which to race, and hence the 18-100 h.p. M.G. Six Sports Mark III Road Racing Model made its debut.

Some twenty-five of the new cars form the first batch, and are on sale in the perfectly ordinary way at a price of £895 complete, and ready for racing without need of further preparation. Only one style of coachwork will be supplied, a four-seater body conforming to existing International Racing Regulations.

Bore and Stroke.

In actual size, namely, 69 mm. bore and 110 mm. stroke, giving a capacity of 2,468 c.c., the six-cylinder engine is the same as that of the Mark I and II models, this being for manufacturing reasons, but in other respects the differences are considerable. The crankshaft, which is carried in four bearings in a particularly rigid monoblock crank case, is bored out in the crank pins and has the webs fined down so as to reduce the load on the bearings. Connecting rods which are machined all over are employed in conjunction with a special piston of the waisted type, and all reciprocating parts are balanced individually, whilst the crankshaft is balanced statically and dynamically.

Within the water jackets the cylinder barrels are specially ribbed to prevent distortion; moreover, the water circulation is maintained by a centrifugal pump instead



Breather pipes are taken to both the carburettor intakes.



On the M.G. Mark III the axle ends and steering arms are polished to facilitate inspection for flaws.

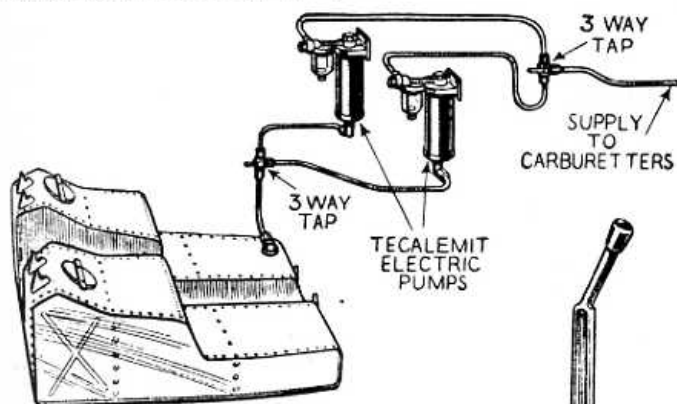
above the engine, and work on the down-draught principle. It is noticeable that the down-draught pipes are not arranged in bends, but in a series of angles.

On the opposite side of the cylinder head the exhausts are arranged to issue in three pairs to a triple pipe which blends into a Brooklands-type expansion chamber, having at each end a breather joint that allows for expansion and contraction. On this engine the overhead valves are operated by an overhead camshaft, which is driven by chain and spur gears from the front. A new type of camshaft is used, giving considerably more over-lap, whilst the valve springs are compounded.

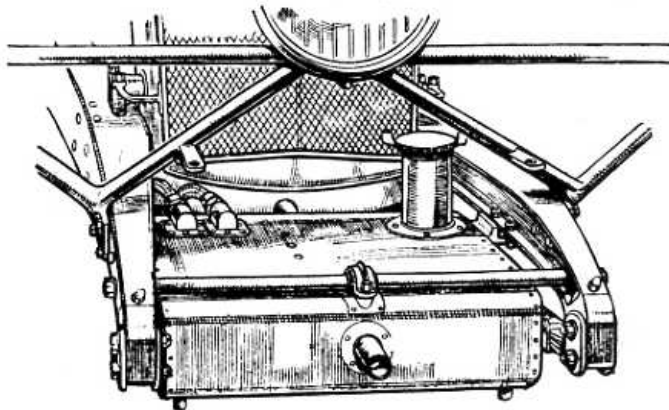
Dry-sump lubrication is adopted. As compared with the normal M.G. engine it is noticeable that the vertical shaft which normally drives the pump has been moved from the right side of the engine at the front to the centre, and the drive for the vertical spindle passes from the chain gear to the extra stout spindle of a special high-duty dynamo.

Water and Oil Pumps.

Beyond a skew gear which drives the vertical shaft is mounted the water pump. At the base of the vertical spindle is a special twin pump. The upper of the two gear pumps draws oil from the sump and delivers it to an oil tank carried between the front dumb irons, flexible pipes being used for the purpose. The lower pump draws its supply from this tank, and delivers it under pressure to the engine bearings. There is a filter on the main suction pipe. There are no separate

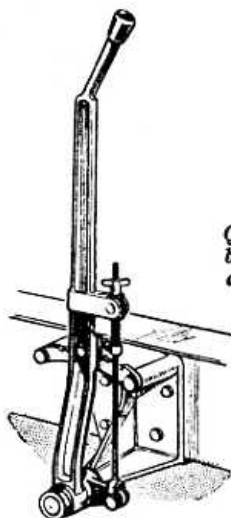


Diagrammatic view of the twin petrol feeds from tank to carburetters.



A large oil tank is located between the front dumb irons, through which the axis of the starting handle passes.

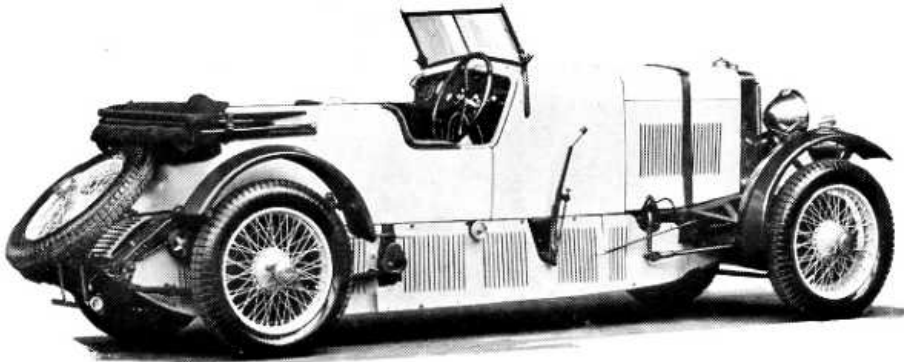
Quick and accessible hand-brake adjustment on the Mark III.



of by an impeller. Combustion chambers of a special shape, giving a high compression, are used in a new type of cylinder head which has a pair of square-section ports running longitudinally along one face of it for the gas intake, these ports being internally machined. Mixture is fed to these two separate ports from a pair of S.U. carburetters of an exclusive design, which are carried high

oil pipes in the engine, cast-in galleries being used instead. It is particularly interesting that there are two breather pipes in the top of the cover for the valve gear, and these permit oil mist to be drawn in through the carburetters to give top-cylinder lubrication. The oil pressure is set for 90 lb.

A double-ignition system is used, there being two sparking plugs in each cylinder.



The hand brake, with its quick adjustment, and the four wheel brake adjusting handle project through the body.

At the top of the vertical shaft of the oil pumps is mounted an electrically synchronised dual distributor, so arranged that the sparks of the two plugs occur simultaneously. Battery ignition is employed and the twin coils are neatly mounted saddle-wise over the dynamo.

Engine and four-speed gear box unit are carried in the frame from a cross-member in the front and from bearer arms extending from a new type of cast-iron banjo casing around the flywheel and clutch. Rubber pads are used in the engine mounting to give a small degree of flexibility.

For the purpose of racing, which demands quick gear changing, a new type of clutch has been designed. It is a single-plate design with highly compressed cork inserts. The clutch is toggle-operated, and has a compressed-graphite thrust race for the pedal fork.

The frame has channel-section side members which are up-swept at front and rear. Aft of the engine and gear box unit comes the keystone of the design. It consists of two very wide and deep channel-section cross members which are jointed together in the centre by a large-diameter tubular member, and through the centre of this the forward end of the propeller-shaft casing passes. Cradles formed by the cross-member on each side of the big tube are utilised to carry the batteries.

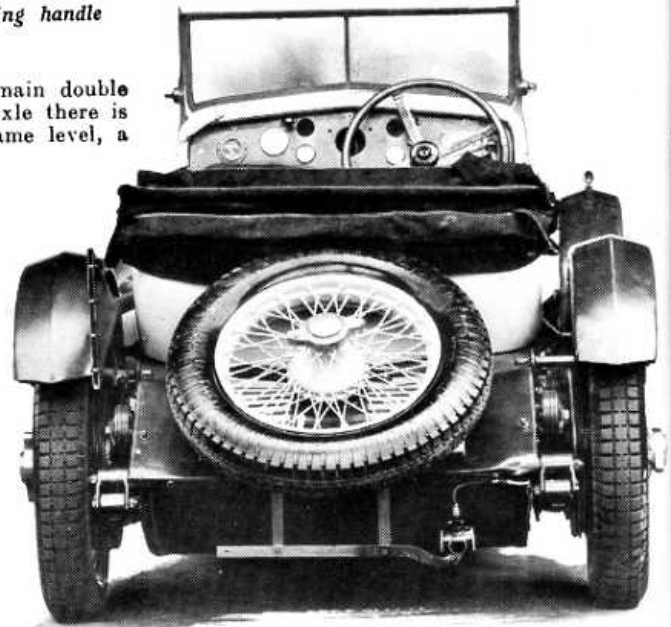
The top flanges of the frame are very wide between the spring anchorages, and again from the engine rear bearer arm right back to the front anchorages of the

rear springs. Between the main double cross-member and the rear axle there is suspended, mainly below frame level, a 28-gallon petrol tank. In plan view this follows the shape of the frame, but the upper portion is shaped suitably to give a tunnel for the propeller-shaft case, and to allow room for the feet of rear-seat passengers. The tank is very firmly supported from three points, but at the same time is free from frame distortion. It is carried low and between the axles so as to give a good distribution of weight with as little variation as possible, whether the tank is full or nearly empty.

Half-elliptic springs are used both back and front, but the front springs are pinned at their rear ends and shackled at the front in boxes which prevent side play. The spring pin and shackle bearings are automatically lubricated from a central lubrication system, which will be described later. For the half-elliptic rear springs Silentbloc bushes, which need no lubrication, are employed. Large double Hartford shock absorbers are fitted to the front axle, whilst the rear axle has two pairs of double Hartfords, the units of each pair being set at right-angles to one

another. Also, the axle has check straps and rubber buffers, so that the spring travel is suitably limited.

Practical simplicity is a feature of the four wheel brake gear. From the pedal a tie-rod runs back to a lever mounted on a very stout cross tube carried in bearings in brackets hanging below frame level. These bearings are large in diameter and narrow, so that any twisting of the frame is not likely to cause binding of the cross-shaft. At each end of

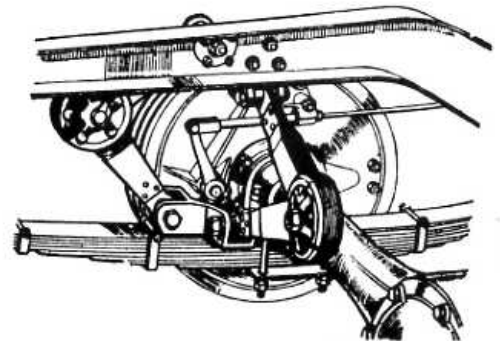
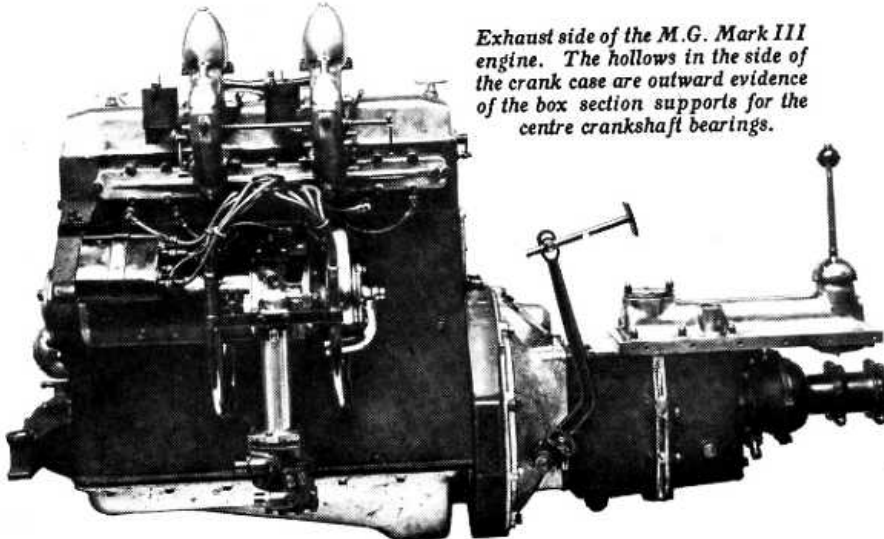


The M.G. Mark III viewed from the rear.

the cross-shaft is a double lever, one arm pointing up, the other down.

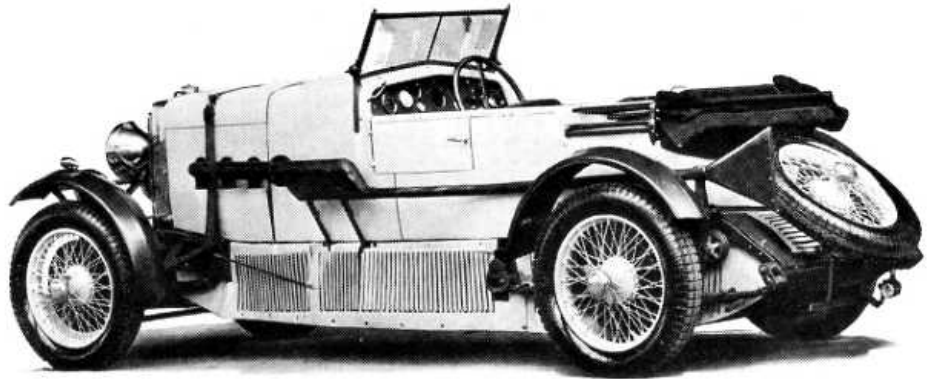
From the upper lever on each side a rod runs forward to terminate in a thimble connection to the end of a stranded steel cable. The cable passes through a slide attached to a frame bracket, and then through a flexible cable covering, passing on to an anchorage on the hub bracket. The cable terminates in a steel slide which embraces the end of the lever, and is adjustable by means of a wing nut pin and a lock nut. From the lower lever on each side a cable runs back to a bracket by the front anchorage of the rear spring, and then passes through a flexible casing to a rear hub in the same way as at the front.

Exhaust side of the M.G. Mark III engine. The hollows in the side of the crank case are outward evidence of the box section supports for the centre crankshaft bearings.

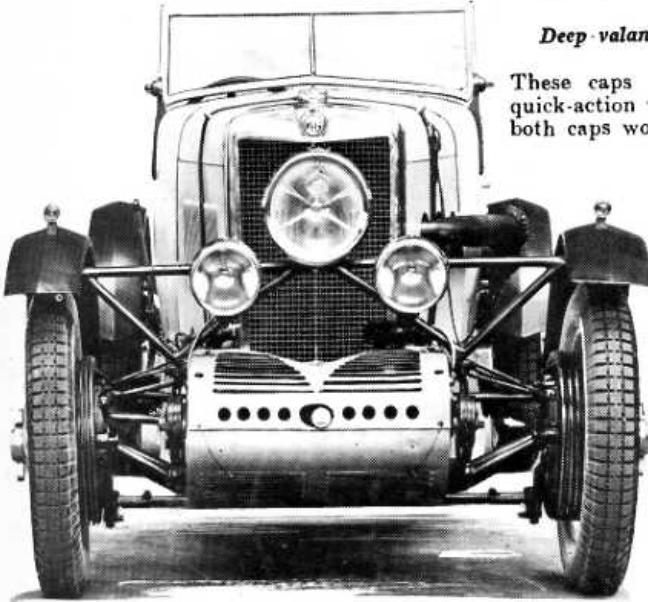


One of the two pairs of shock absorbers fitted to the rear axle.

There is a very ingenious method of taking up the main adjustment, which is situated on the end of the tie-rod that couples the cross-shaft lever to the brake pedal. A V-ended thimble screws on to the end of a tie-rod, and this thimble is attached to a flexible cable which is swept round at right angles and passes out through the frame to an adjustable wheel. When the wheel is turned the cable twists with it, and thereby rotates the sleeve on its screw thread.



Deep valances cover the frames and help to increase the sturdy appearance of the car.



Viewed from the front the most striking feature of the M.G. is the powerful third head lamp.

Outside the body, and well forward, is a long hand-brake lever with the customary racing-type ratchet, and this lever operates all four brakes independently of the pedal by means of a trip lever attachment to the cross-shaft. Adjustment at this point is made by means of a large set pin. The brake drums are of very large diameter, with wide shoes, and the drums are also heavily ribbed so that they should stand up to prolonged hard work. Incidentally, the brake cam spindles are cadmium plated, and work in roller bearings which are packed with grease.

Reverting now to the fuel system. First, the big tank has two filling caps, one on each side of the floor of the car.

These caps are very large and of the quick-action variety, and the idea is that both caps would be removed when filling so that a large quantity of fuel can be poured in at one orifice whilst the other makes a large vent for the escape of air. At the left-hand forward corner of the tank is the delivery stand-pipe. This is sheltered by a tube attached to a cap screwed in from the bottom; the tube has various large holes in it and is covered with fine-mesh gauze.

There are two separate fuel-delivery systems. From the stand-pipe and its union a flexible petrol-resisting tube goes forward to a two-way tap, and from each of the tap leads a pipe runs forward to a separate electrically operated pump.

From each pump a pipe runs up to a two-way tap concealed under the dash. From this tap a flexible pipe then runs forward to the two carburetters. The two electric Tecalemit petrol pumps are controlled by separate switches. Thus, a leak in one pipe will not affect the other.

Another interesting feature is the automatic central chassis lubrication. It is a Tecalemit design, wherein a glass-bodied container attached to the front of the dashboard carries in its head a special

form of automatic vibratory pump, the inertia of a bob-weight being used to build up oil pressure at between 60lb. and 90lb.

The car carries three head lamps, besides side and tail lamps. All electrical circuits throughout the vehicle are wired separately, and each line of wiring has its own separate fuse, a large fuse box being carried on the engine side of the dash. The idea of this is to localise faults as far as possible.

Very strong support is given to the three-head-lamp system and to the front wings, there being a double triangulated structure of streamline section steel tubing right across the front of the car.

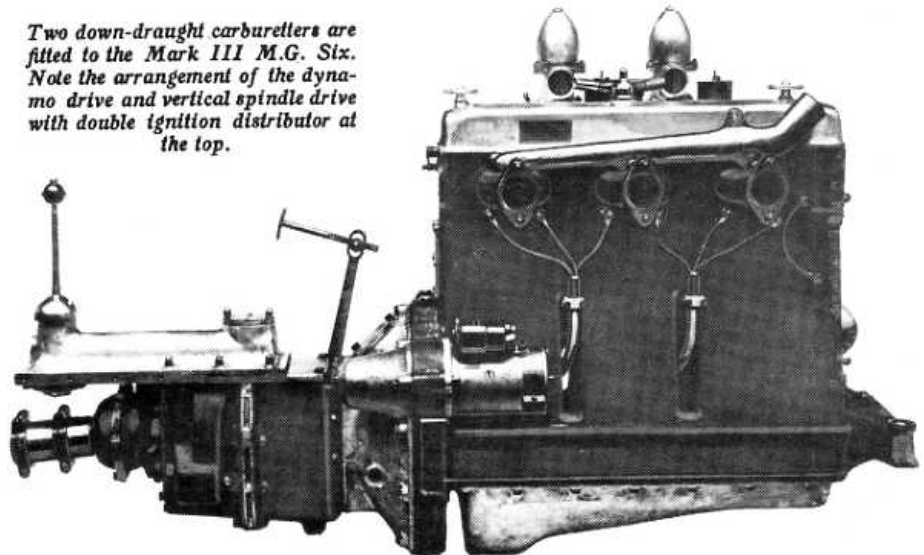
All the vital points in the steering, by the way, are filed and polished to make sure that no hidden flaws exit.

The intention is to turn the car out absolutely run-in, with the bearings free, the brakes bedded in, all nuts split-pinned and wired, with racing tyres on racing rims, and, in fact, everything tuned up to the degree where there is no need for further work on the machine. It is hoped to guarantee a speed of 100 m.p.h.

The instruments include speedometer, rev counter, stop clock, oil gauge, ammeter, radiator and oil thermometers.

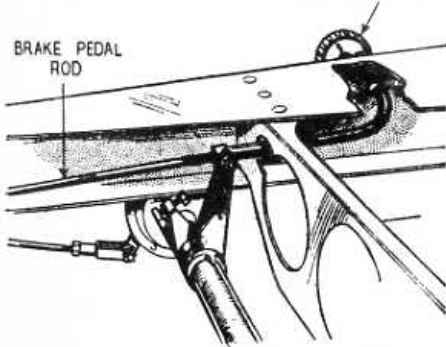
The body is a simple and sturdy metal-panelled four-seater, with a single shallow door on the near side, and it has a considerable portion of the off side cut away. The car carries a windscreen which can be folded flat forward, and there is, of course, a regulation hood.

Two down-draught carburetters are fitted to the Mark III M.G. Six. Note the arrangement of the dynamo drive and vertical spindle drive with double ignition distributor at the top.

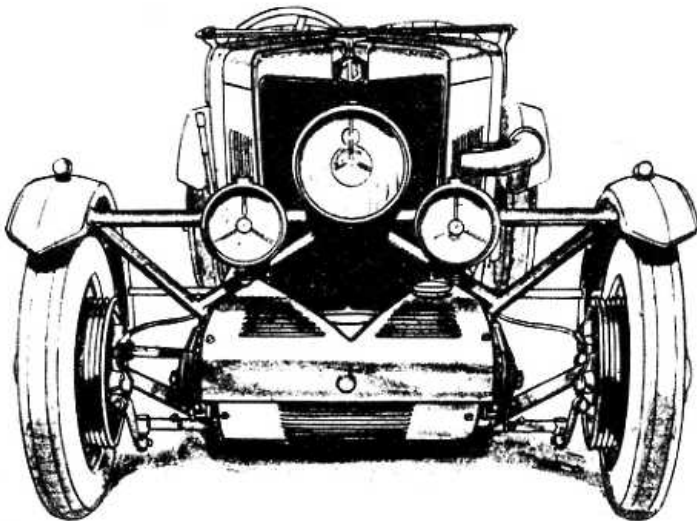
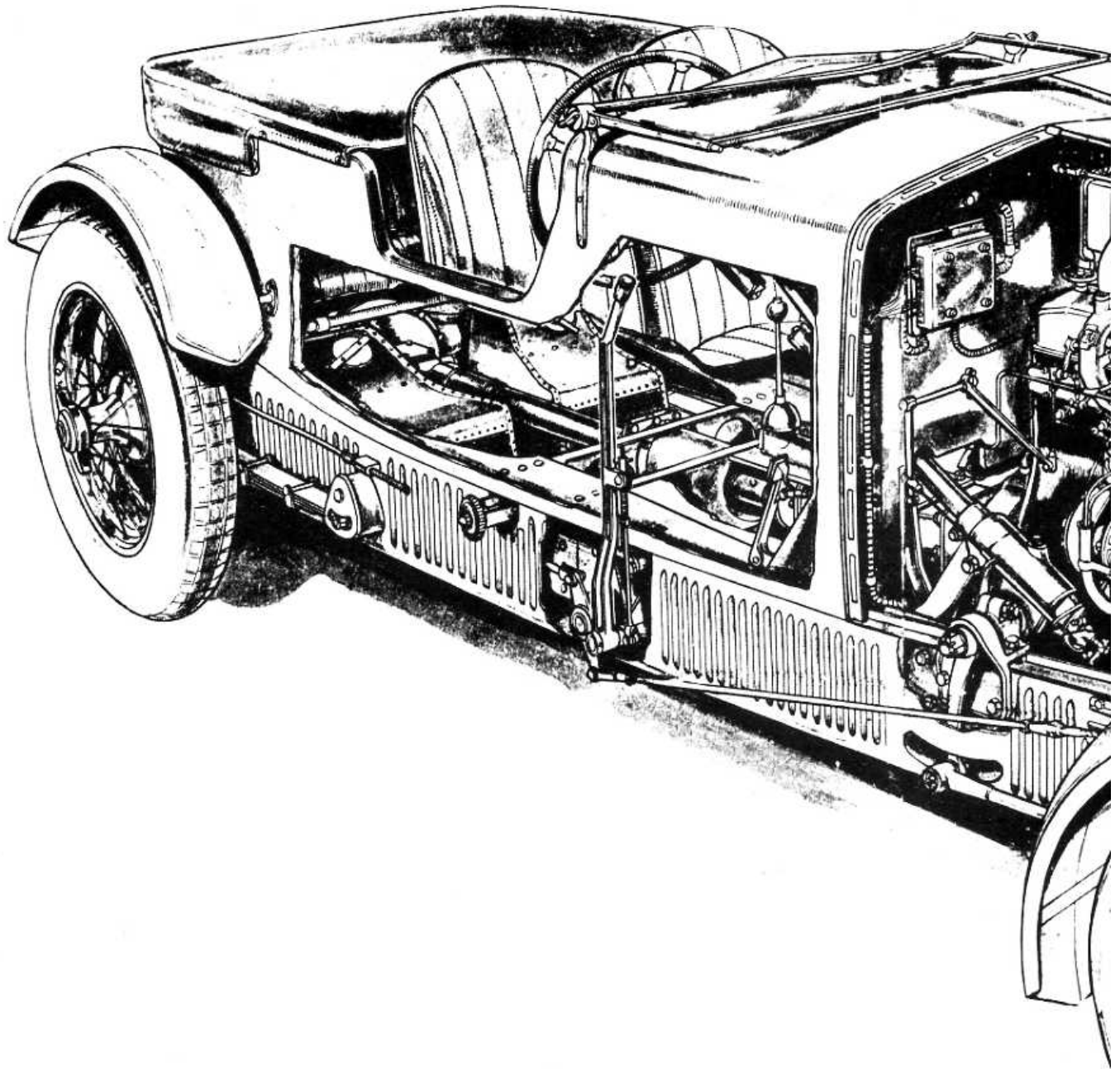


HAND ADJUSTMENT

BRAKE PEDAL ROD



An ingenious hand adjustment is provided for the foot brake.

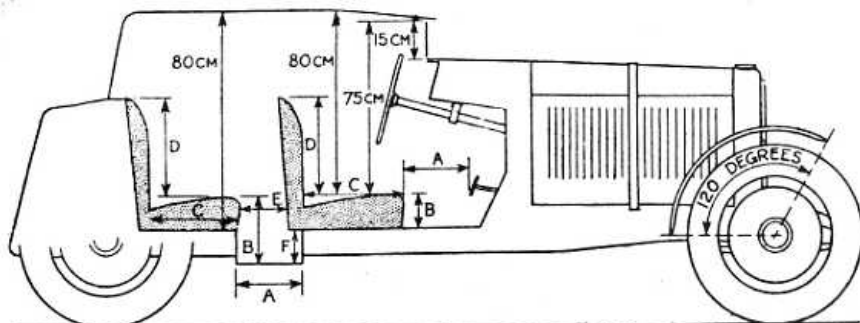
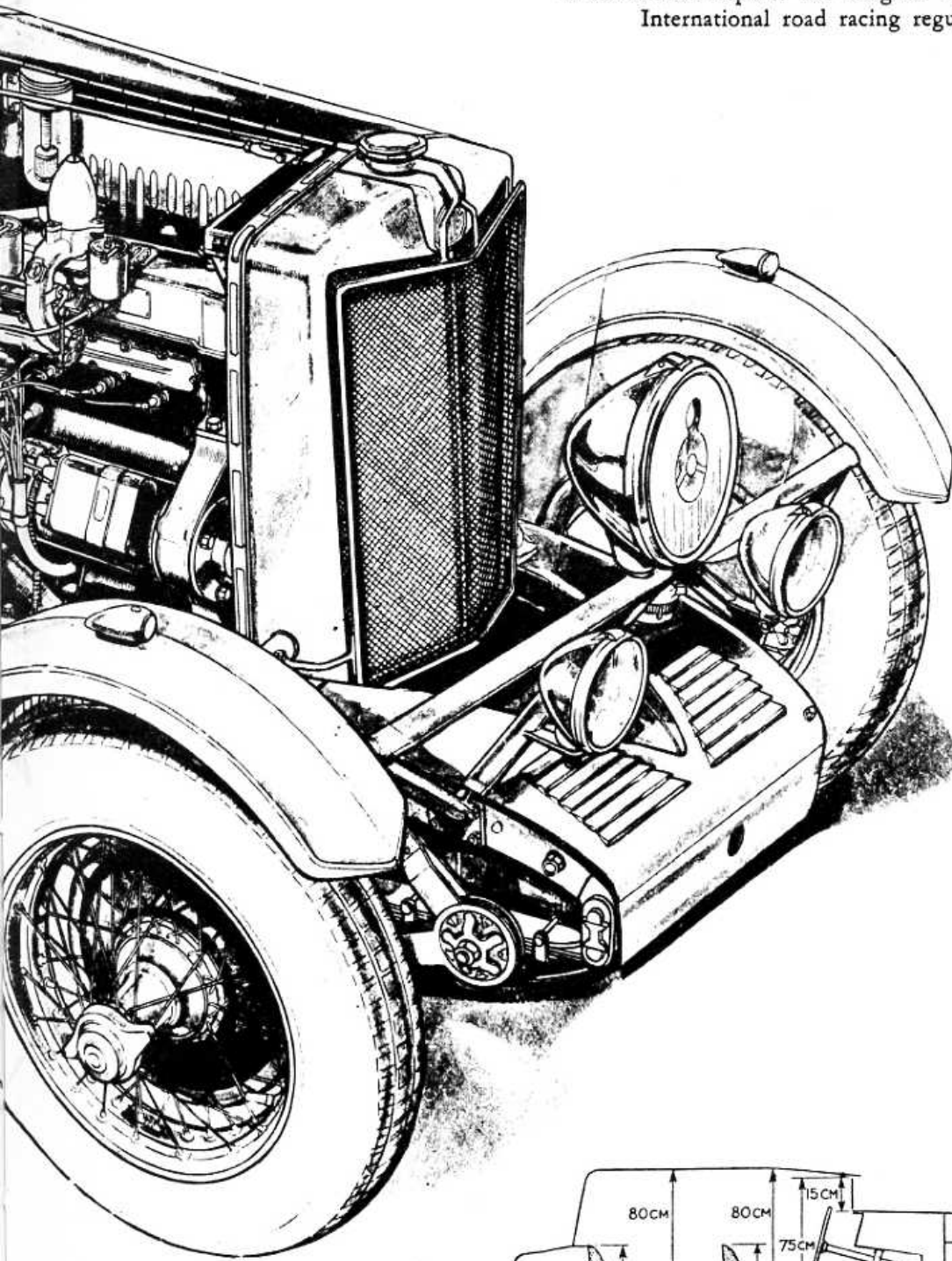


**OUTLINE OF
SPECIFICATION.**

Bore 69 mm. Stroke 110 mm.
Capacity 2468 c.c.
R.A.C. Rating 17.7 h.p. Tax £18.
Wheelbase, 9ft. 6in.; Track 4 feet.

THE M.G. MARK III.

A standardised sports car designed to comply with International road racing regulations.



All sports cars in 1930 races have to carry bodies complying with these dimensions.