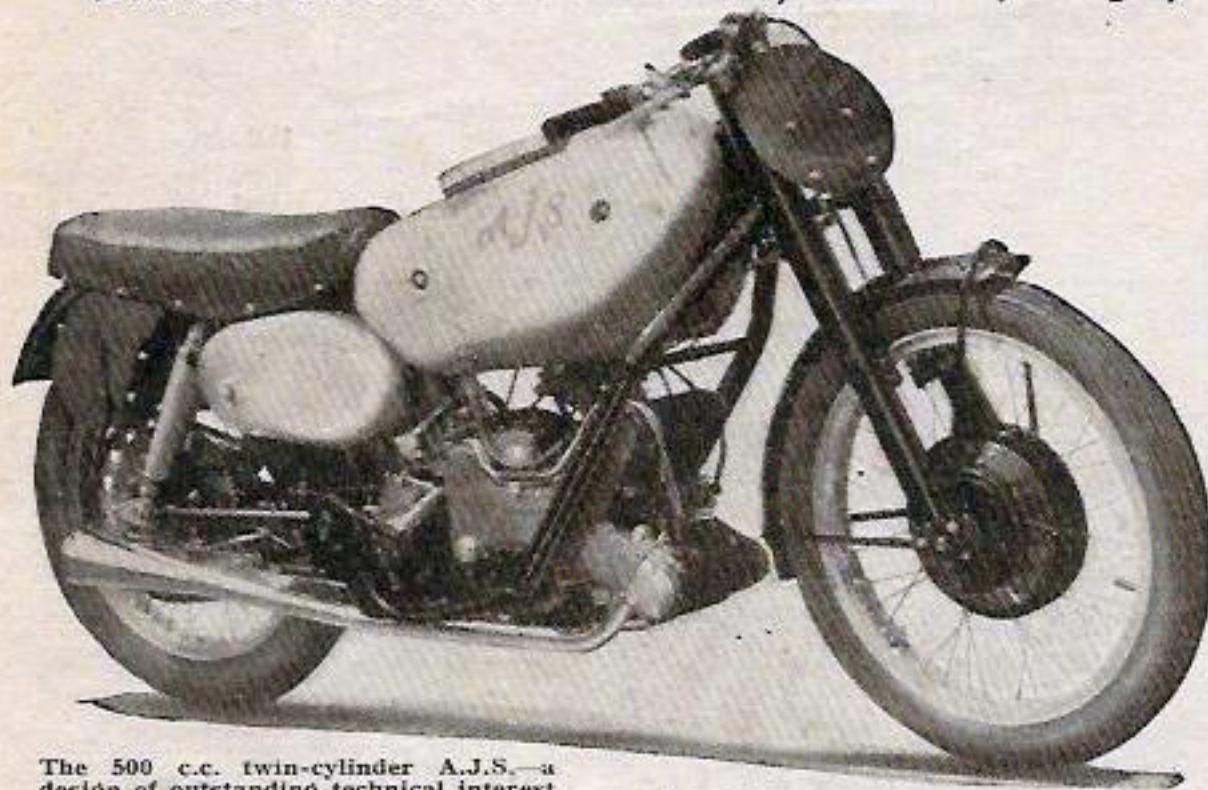


T.T. NOTES AND

Details of the 500 c.c. A.J.S. Side-by-Side Twin, a Highly Interesting Design with Two Overhead



The 500 c.c. twin-cylinder A.J.S.—a design of outstanding technical interest

tive-stop foot-change device are of conventional design. However, primary drive on the nearside is by two spur gears with the four-plate clutch outside the gear casing. To obtain normal mainshaft rotation with this type of primary drive the engine drives "backwards." Final drive is by chain on the offside with an outrigger bearing for the gear box driving shaft.

* * *

ABOVE the crankcase, immediately to the rear of the cylinder block, is the magneto and behind it the gear-type supply pump for engine lubrication. There are spur gear drives from engine mainshaft to pump spindle and between the latter and the magneto armature.

* * *

THE pump takes oil from the tank, forces it through a felt filter lying horizontally above the gear box, to all engine bearings. Oil drains from the inlet valve chest to the exhaust valve chest which is scavenged by a pump on the camshaft; there is, of course, a main scavenge pump in the detachable ribbed sump below the crankcase. An ingenious feature is an adjustable needle valve controlling a supply of oil to a groove in the gear box sprocket; from this groove the oil is flung outwards by centrifugal force through drillings on the sprocket on to the chain rollers.

* * *

THERE are two Amal carburettors fed by a single float chamber situated

WITHOUT doubt the most interesting machine in the Island this year will be the new racing A.J.S. Two machines are entered for the Senior race and will be ridden by Jock West and R. L. Graham; a third, reserve, model will also be available. To get the machines ready in time has involved day and night work in the A.M.C. Experimental Department and until the closed roads of the I.O.M. are available to-day, nothing will be known of the road performance.

* * *

THE engine is a twin with the cylinders disposed side by side and, of course, the pistons "in step." There are two overhead camshafts, one inlet and one exhaust, and with the almost horizontal position of the unit, the cylinder head and cam boxes face forward into the air stream. The camshafts are driven by spur gears and the cams actuate the valves, through short tappets.

* * *

"HEDGEHOG" or "spike" finning is used for the light-alloy cylinder head; the casting includes the valve chests which enclose the hairpin-type valve springs. Each hemisphere in the head accommodates two valves—inlet and exhaust—and there are inserts for the valve seatings. The finned cam boxes, also in light-alloy, are retained on the valve chests by eight long studs and the drive for the revolution counter is taken from the nearside end of the inlet cam shaft.

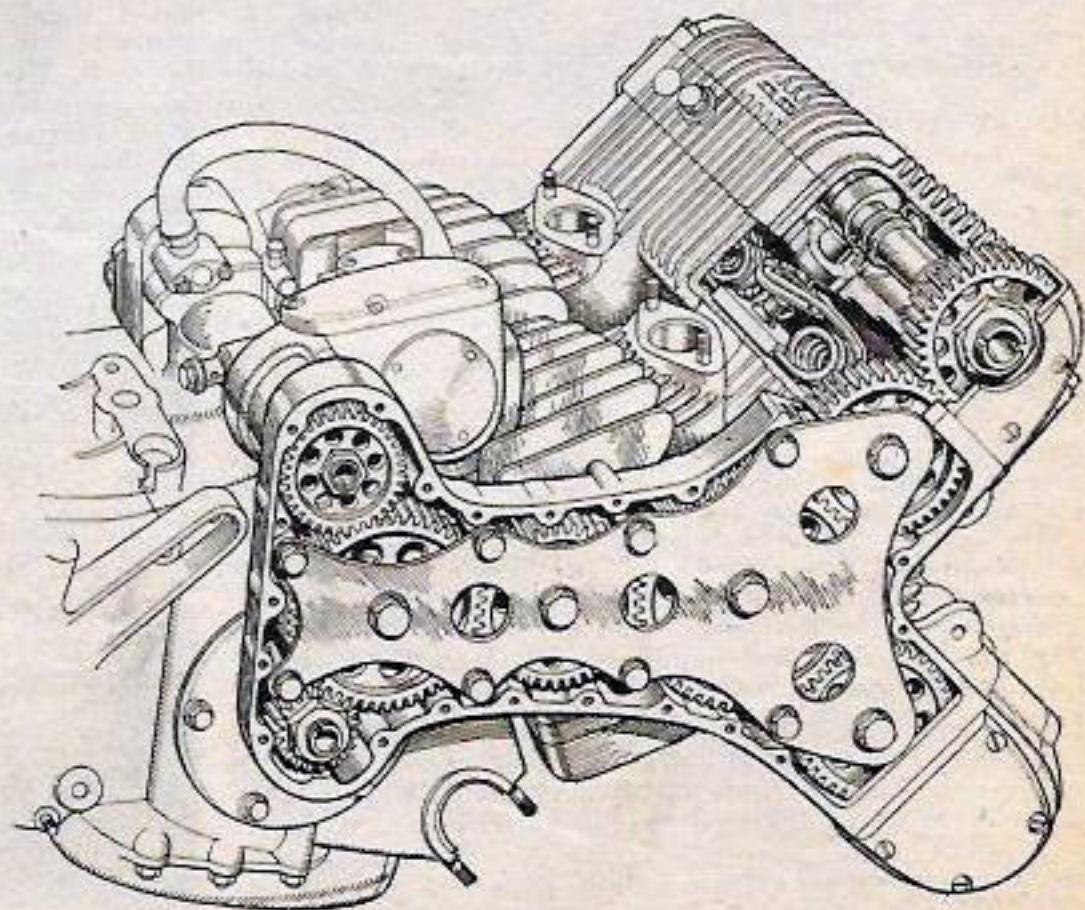
* * *

STEEL liners are inserted in the light-alloy cylinder block, which has very deep, widely spaced, longitudinal fins. The bore is 68 mm and the stroke 68.5 mm, giving a total capacity of just over 499 c.c. Slipper-type pistons with fully float-

ing gudgeon pins are used. The light-alloy connecting rods have split big-end bearings fitting round the journals of the massive one-piece crankshaft which has a large-diameter bearing in the middle as well as at each end.

* * *

THE four-speed gear box is in unit with the engine. The internal mechanism of the gear box and the posi-



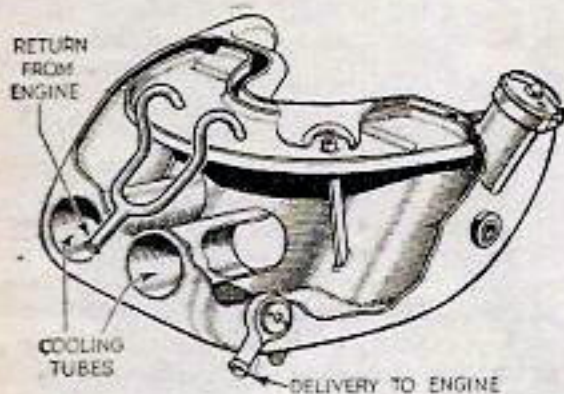
Spur gear drives are used for the twin overhead camshafts and for the oil-pump and magneto

NEWS

Camshafts Driven by Spur Gears

between them. Moulded rubber induction pipes are used and serve as flexible mountings for the twin carburettor unit.

THE duplex cradle frame is in alloy-steel tubes of oval and circular section and all joints are welded. Cross tubes bracing the cradle provide front and rear mountings for the engine and welded, gusseted lugs form the bosses for the spindle on which the rear forks pivot—the bearings at this point are porous-bronze bushes; the rear suspension units which give about three inches total



Cooling tubes run through the 1½-gallon light-alloy oil-tank

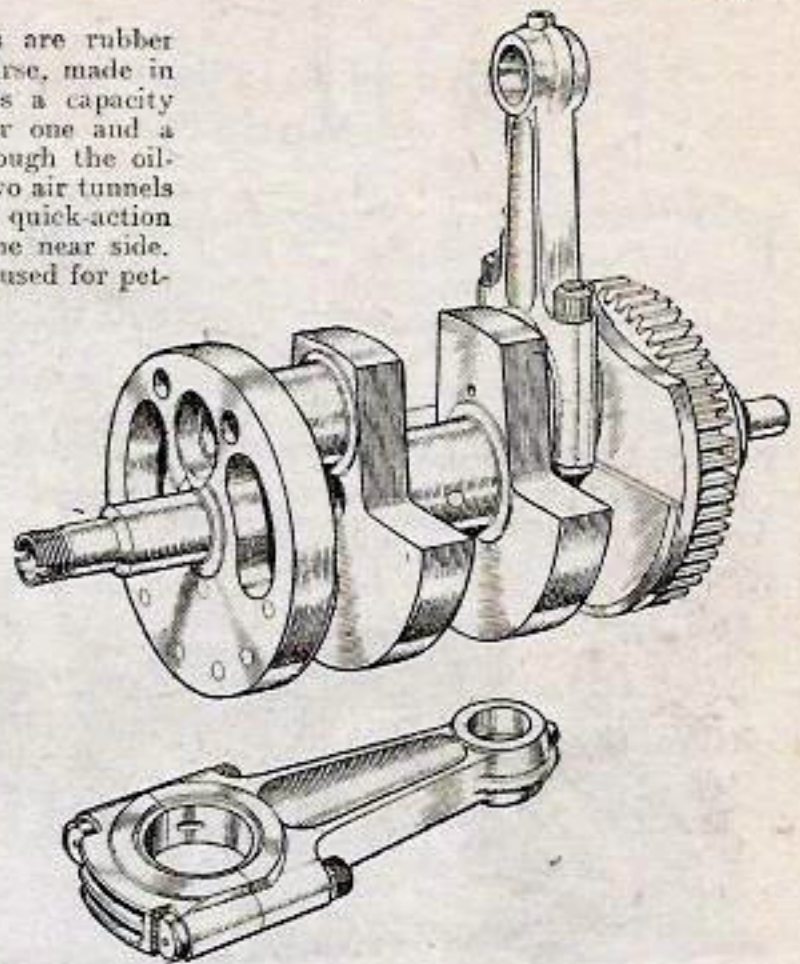
wheel movement, have rubber bushes at their attachment lugs. The design of these suspension units follows that of the Teledraulic forks. Incidentally the hydraulic mechanism of the Teledraulic system has been redesigned and the new features may be incorporated in A.M.C. production models for 1948.

CONICAL light-alloy wheel hubs have 8½in diameter brake drums which are fitted with cast-iron liners. Both brakes are cable operated, are of the two leading shoe type and have friction linings of 1½in width for the front wheel and 1¼in width for the rear. There are two cams to each brake; one cam lever is actuated by the main control cable and a short, secondary cable with an adjuster connects the two levers so that there is individual adjustment for each cam. The front brake cover plate is provided with an air scoop and there are air outlet holes in the hub bodies. Front and rear drums have circumferential cooling fins. Dunlop light alloy rims are used and the Dunlop tyres are 27×3in front and 3.50 section rear.

Teledraulic suspension is used for the frame and, of course, for the forks. The frame is built up from oval- and circular-section steel tubes, welded at the joints

BOTH fuel and oil tanks are rubber mounted and are, of course, made in light alloy. The former has a capacity of six gallons and the latter one and a half gallons. Running through the oil-tank from front to rear are two air tunnels to assist cooling. The large, quick-action filler cap is, of course, on the near side. Reinforced flexible pipes are used for petrol and oil leads.

The massive one-piece crankshaft has three bearings and the light-alloy connecting rods have split big-ends



THE total weight of the new A.J.S. in I.O.M. trim is not yet known. So keen is the enthusiasm at the Works that a sweepstake is being held on the nearest guess at the weight of the models when weighed-in by the A.C.U.! All that can be said at the moment is that most estimates put the weight at round about 300lb.

VELOCETTE service manager, Mr. R. W. Burgess, will make his headquarters the Salisbury Garage, Fort Street, Douglas; a limited supply of K.T.T. spares will be available. Representative of Dunlops, Mr. C. R. Davies, will be at the Sefton Hotel, as will Mr. T. W. Jones and Mr. H. W. Irving of Champion Plugs. Mr. Maxted, of Smiths, will be staying at the Hotel Metropole.

FASTEST B.M.C.R.C. finisher in any race will receive the Horsman Cup.

MR. JOE CRAIG'S chief reaction to the behaviour of the works Nortons in the North-West "200" is that he is extremely glad the machines took part, since he has gleaned invaluable data for the T.T. Races. Not having a proper testing ground in this country for racing machines is, he says, a big drawback. Immediately before and during the North-West "200" the Norton machines suffered from troubles which would have already been ironed out had a British testing ground been available. The N.W. "200" had made it even more apparent (went on Mr. Craig) that materials which had been proved eminently suitable in wartime aircraft engines did not necessarily prove so suitable in air-cooled racing motor cycle engines.

