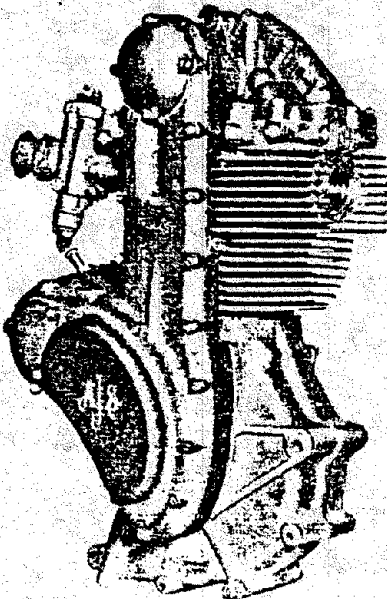


"MERCURY" Visits the Plumstead Plant and Describes—



The 1948 version of the 350 c.c. "Cammy Ajay," of beloved memory, bears little resemblance to its famous predecessor save that the o.h. camshaft is driven by chain.

whelming Italian menace, but, having expressed this wish to the manufacturers, I can only sympathize with their reply, which can be summarized as:—

"We have already produced one entirely new racer since the war . . ." (I happen to know that the cost of that little venture can be assessed in figures that only astronomers really understand). . . . We are now producing another. Why doesn't somebody else get cracking? Anyway, we only sell '350s' and '500s,' so would it be right for us to race a lightweight?"

This new machine is a different proposition from the A.J.S. twin. That beautiful device—the twin—is scarcely likely to appear in an A.J.S. catalogue, if only because there is such a limited number of millionaires interested in buying racing ironmongery. But it is intended to have the "350" in production in time to provide a season's racing this year for lucky customers, and I understand that it will cost no more than one expects to pay

THERE are far too few British racing machines. In fact, were it not for the persistent efforts of a handful of manufacturers—whose enterprise benefits the whole industry—our prestige abroad would be considerably lowered, with the result that overseas sales of British motorcycles might not be as good as they are to-day.

Of the few names which have consistently figured in race programmes, one of the best known is that of A.J.S. There were the early 2½ h.p. side-valve machines, then the amazing fast "big port" of the early twenties—the only 350 ever to win a Senior T.T. These were followed, in 1927, by the "Cammy Ajay," which, although it was raced in all three capacities (Jimmy Guthrie won the "Lightweight" on one in 1930), became established in popularity as a "350." The air-cooled "four"—which never quite "made the grade"—and its water-cooled successor which might have been a world beater if the recent war and subsequent F.I.C.M. ban on superchargers had not shortened its useful life, have been followed by a twin which is the outstanding post-war design.

Another "Cammy Ajay"

Now the twin, which has attracted so much attention during the past season, will be joined by a "Junior" machine. And, with a fine respect for tradition, its manufacturers, Associated Motor Cycles, Ltd., of Plumstead, S.E.18, have made it another "Cammy Ajay."

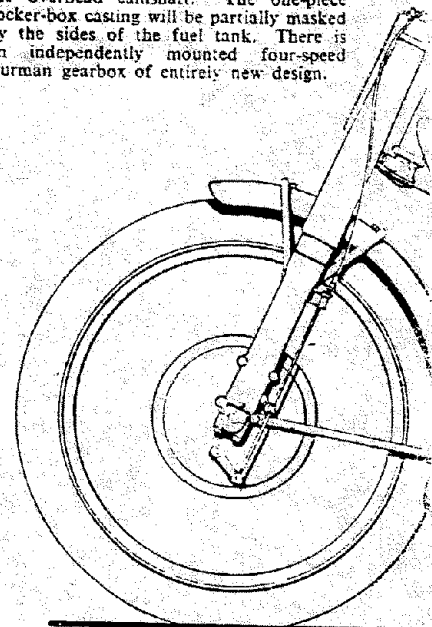
"But," says Jock West, A.M.C. sales manager, "the only resemblance to the old one is the chain drive to the overhead camshaft."

A lot of us would like to see the new A.J.S.—or the Model 7R as it is called—appear as a "250" to combat the over-

THE NEW A.J.S. "

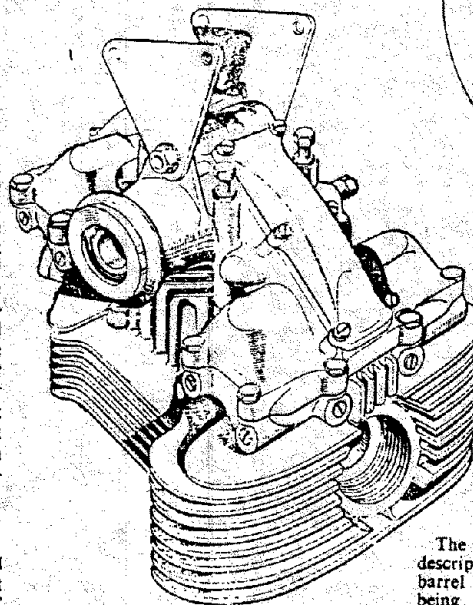
on a U-shaped tubular extension of the frame, and the petrol tank, although not possessing the bulging sides characteristic of the "twin," will be mounted in a similar manner, pannier-wise, on the single top tube.

The 348 c.c. power unit has an impressive, heavily webbed crankcase into which the cylinder is deeply spigoted, the finning, both on barrel and cylinder head, being generous. A distinctive feature of the engine is, of course, the chain-drive for the overhead camshaft. The one-piece rocker-box casing will be partially masked by the sides of the fuel tank. There is an independently mounted four-speed Burman gearbox of entirely new design.



A "Motor Cycling" artist's impression of the new A.J.S. with the petrol tank "broken away" to show the method of bolting the top of the cam box to the main frame tube and the provision for driving the rev. counter from the camshaft.

(Left) The aluminium alloy cylinder head has cleverly designed cooling. Note how the fins round the centrally disposed exhaust port are "swollen" to reach maximum depth between the port and the camshaft-drive chaincase.



for any other blue-blooded, pedigree racer. At the moment the prototype is being built and I was down at the factory last week to see how it was progressing.

The 7R, when it appears on the grid for the first time, will be an easy machine to distinguish. Its double-loop frame, "Teledraulic" front forks, rear springing and massive brakes are similar to those of the twin. There is the same long one-piece saddle-cum-mudguard pad carried

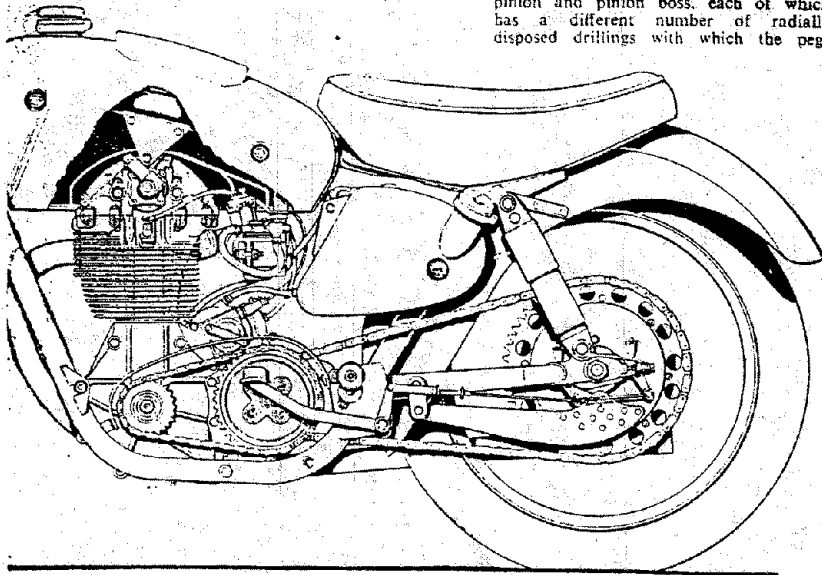
The engine warrants a fairly detailed description. Its aluminium-alloy cylinder barrel has a shrunk-in iron liner, the bore being 74 mm. and the stroke 81 mm. There are four long holding-down bolts passing from the crankcase right through the cylinder head.

A forged aluminium piston of conventional racing design is employed and the massive I-section steel connecting rod has a bushed little-end and a duralumin-caged, single-row big-end bearings of exceptionally generous proportions. There are circumferential webs to the eyes of both big and small ends to provide vital strengthening.

The solid-steel flywheels are drilled, and

INIOR" RACER

Details of the 350 c.c. Chain-driven o.h.c. Machine Shortly to be Placed on the Market by A.M.C. Ltd.



recessed on their inner faces to accommodate the big-end bearing, thus keeping the lateral width of the assembly to a minimum. The crankpin, following normal A.M.C. practice, consists of a toughened alloy-steel pin on which a hardened race is pressed.

The timing side mainshaft has a single, large-diameter journal ball-race while, on the drive side, there is, first, a double-caged roller-bearing and then, on the outside, a further single roller-bearing. At the extremity of the shaft comes a normal cam-type shock absorber.

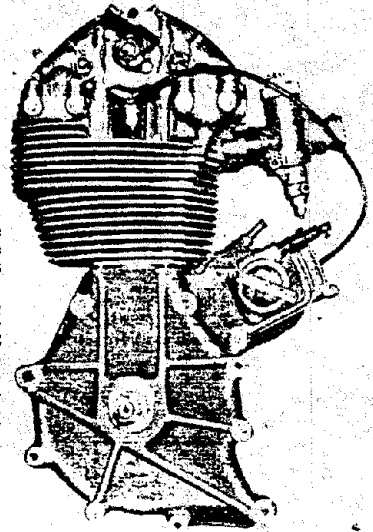
The magnesium-alloy crankcase has strengthening webs, arranged in the best possible manner to withstand all stresses involved.

The timing cover encloses the gear-type oil pumps, both of which have cylindrical bodies. Each pump takes its drive co-axially from a pinion in the timing gear train, the delivery pump being driven from the magneto-drive idler pinion and the scavenging pump from the main half-time wheel. There are only two external pipes—short ones running between the oil tank and the pumps. The main feed from the delivery pump goes direct to the big-end bearing; another feed goes, by way of a pipe cast integrally with the magnesium-alloy chaincase, straight to the overhead camshaft which is drilled so that oil is led

The new engine is very "clean" with massive webbing to give adequate strength to the magnesium alloy crankcase. The valve clearances can be checked without disturbing the valve spring covers.

to the lift faces of the cams. The one crankcase breather valve is located in the drilled drive-side mainshaft and exhausts on to the primary chain.

The timing case has a small cover plate, giving access to the magneto-drive pinion. The timing of the strap-mounted racing Lucas magneto has a vernier adjustment, produced by the well-known A.J.S. method of using a pegged locking washer and a pinion and pinion boss, each of which has a different number of radially disposed drillings with which the pegs



The rockers, of toughened alloy-steel with deposited hard-metal bearing pads, are short, to keep reciprocating weight to a minimum, and the rocker spindles, which run in plain bushes, are mounted eccentrically, affording a means for setting valve clearances without recourse to screwed adjusters or shims.

There are, in fact, no end caps to the valves, which receive the same treatment as the rockers and have a chemically deposited surface of bearing metal on their ends. Fully enclosed interleaved hairpin springs are used, and these springs are retained by circlip type collets. The valves are set in the cylinder head at an inclusive angle of 80 degrees and the inlet port is downdraught and offset. A T.T. Amal carburetter is employed, with remote float chamber connected by a flexible junction pipe.

In addition to the normal bolt and engine plate attachment between crankcase and frame, the engine has two triangulated stay plates bolted to the rocker-box and to the top frame tube.

There is no saddle tube of the accepted type and the gear-box—extremely compact for a four-speed unit—is carried within the rear engine plates, having a top and bottom mounting, and provision for adjustment of the 1-in. by 5/16-in. primary chain being made in the usual manner but with the drawbolt at the base. The clutch is of normal multi-plate design and the rear drive is by 1-in. by 1-in. chain.

Considerable thought has been given to the positioning of the pivot point of the foot-operating gear-change, so as to bring the pedal into line with the rear-mounted footrests.

The welded frame which houses this power assembly is very similar—on the drawing board—to that of the racing twin. The same oval tubes are used; there is the large section single top tube and the upward curving U-shaped loop, forming an extension to the "backbone" and carrying the one-piece saddle-cum-mud-guard pad; the twin loops which, running from steering head to saddle bracket, form the whole of the main frame, follow similar lines; and both "Teledraulic" front forks and the oleo-pneumatic rear springing layout are identical. But, in fact, with the exception of these last-named parts and the saddle loan the frame

mate. The same type of adjustment is also used for the camshaft.

A Weller tensioned chain takes the drive to the overhead camshaft, the flat chaincase casting having a central division in its upper half.

The massive but light aluminium-alloy cylinder-head casting has unusual finning. Round the centrally disposed exhaust port the horizontal fins "swell out" until they reach their maximum depth between the port and the o.h.c. chaincase. They squeeze in to accommodate this, then swell out again. Beneath the rocker-box there is vertical finning, running diagonally at an angle of 45 degrees from the drive side to the rear of the chaincase on the timing side. Both rocker-box and camshaft housing are of magnesium alloy.

The method of attaching the rocker-box to the head is interesting. By using 7 16-in. trunnion bolts housed in drillings in the head and an equal number of 1-in. holding-down bolts, screwed into the trunnions, it becomes possible to remove the rocker-box without taking the engine out of the frame and, at the same time, the nightmare of stripped threads in the alloy head is defeated.

The camshaft runs on twin ball-races, and at its "free" end there is provision for the rev. counter drive. Both cams