

## A.J.S. and Matchless Modifications

Evolutionary Development but no Startling Changes : New Hubs, Headlamp and Front Mudguard Among Many Detail Improvements

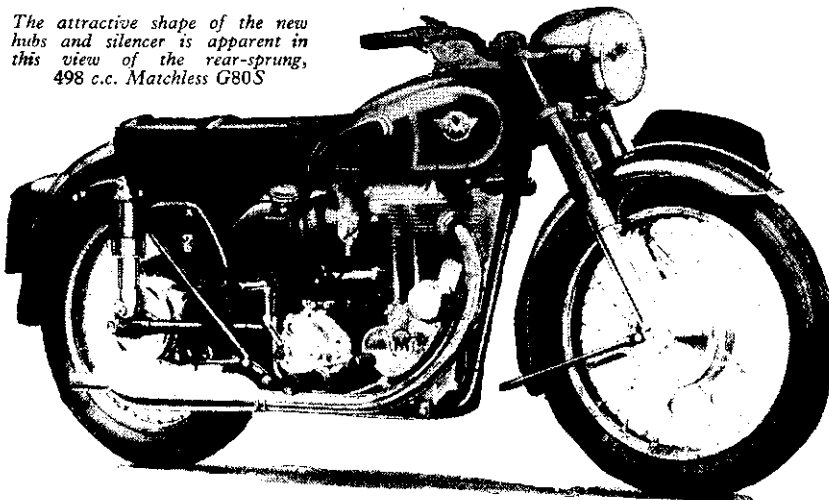
**N**UMEROUS refinements are incorporated in the range of A.J.S. and Matchless machines for 1955. As is widely known, the two makes have much in common and are famous for the mechanical quietness of their engines and the excellence of machine finish. There are no new models, and the changes to existing models are with a view to increased component life, improved accessibility, enhanced appearance and better protection for the machine and rider from water flung up by the front wheel. Automatic advance and retard, fitted last year to the 500 c.c. singles, is standardized on the three-fifties. All the models are fitted with full-width, light-alloy rear hubs.

Detail modifications to the 498 c.c. twin-cylinder engine include improved lubrication at the pushrod end of the overhead rockers. In the top of the rocker-arm is a groove which is fed with oil through an oilway leading from the bore of the plain rocker bearing to the inboard end of the groove. The oil is carried to the outer end of the groove by centrifugal force and then runs over the rocker end into the pushrod cup. A similar system, it will be recalled, is used on the G45 racing engine.

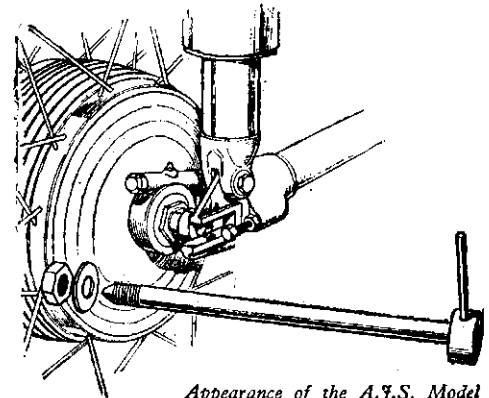
A shallower and more shapely cap nut is fitted over the filter element in the front of the crankcase, and an improved exhaust-pipe lower mounting is employed. The former double-cranked brackets from pipes to front engine plates are replaced by tubular pillar nuts which connect the pipes to the forward cradle bolt.

On the single-cylinder engines, longer life and more silent running of the crankshaft main bearings should result from two important crankcase modifications. The flange of the timing-side bronze bush has been made more substantial, and the

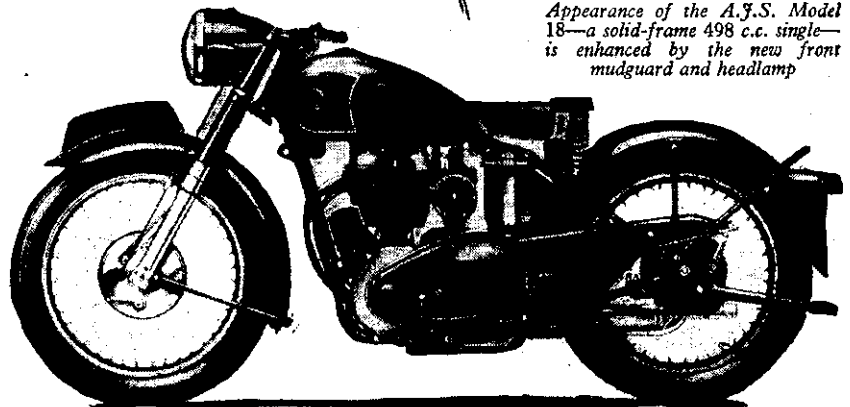
*The attractive shape of the new hubs and silencer is apparent in this view of the rear-sprung, 498 c.c. Matchless G80S*



*A light-alloy, full-width rear hub is fitted to all 1955 models; the wheel is quickly detachable on rear-sprung machines*



*Appearance of the A.J.S. Model 18—a solid-frame 498 c.c. single—is enhanced by the new front mudguard and headlamp*



size of the inboard drive-side ball bearing has been increased.

Automatic ignition control was introduced on the 1954 498 c.c. roadster singles. As mentioned earlier, automatic control is now adopted for the 347 c.c. singles also. It is used in conjunction with the Lucas rotating-magnet magneto. Manual ignition control is retained on the twins and on the competition singles. The competition models, of course, employ waterproof magnetos.

One or two instances of noisy operation of the automatic-advance mechanism at low engine speeds occurred during the past year. The trouble has been obviated by fitting plastic sleeves over the retard limit stops, to cushion the return of the operating fingers.

Several modifications are common to all engines. Previously, air cleaners (an optional extra) have been of different types on singles and twins. One type is now adopted throughout the range. Latest-pattern Amal Monobloc carburetors, as described in last week's issue, are employed; thorough tests have satisfied the A.M.C. concern that the Monobloc is superior to the earlier pattern. Silencers of greater capacity and improved appearance are featured on most 1955 models.

The lubrication system has been tidied up on the complete range by repositioning the main feed and return pipes below the oil tank. Previously the pipes, when viewed from the right of the machine, lay side by side; in the revised layout one pipe is behind the other.

The full-width, light-alloy front hub, with straight spokes, was one of the outstanding innovations for 1954; for 1955 the hub is greatly improved in appearance by a reduction in width, by increased dishing on the brake-shoe plate and end-cover, and by giving the die-cast hub shell a more barrel-like appearance. The appearance is achieved by making the middle cooling fins deeper than the outer fins. To obviate any chance of ovality arising from spoke tension, brake liners are trued after the wheel is built.

Another obvious change concerns the front mudguard on all roadsters. Investigation showed that much of the water and road filth thrown back on to the machine came from the front stays. The new mudguard, therefore, has no front stays. It is undoubtedly a good-looking guard and is claimed to be as effective as a heavily valanced component.

To provide adequate rigidity, the mudguard extensions which are attached to the

fork legs are radiused into the guard and have a stiffening bridge member spot-welded in position. The wiring of the edges is continued right round the mud-guard, and the cantilever forward portion of the blade is no more prone to lateral movement than was its braced predecessor.

Greater resistance to front-fork damage is the purpose of an increase in stanchion-tube diameter from 1½ in to 1¾ in on all models. The upper covers, between the steering-head crowns, are tapered to mate up with the larger-diameter spring covers; and the welded-on headlamp brackets, instead of being of isosceles-triangle form, have a horizontal top edge which gives a more balanced appearance.

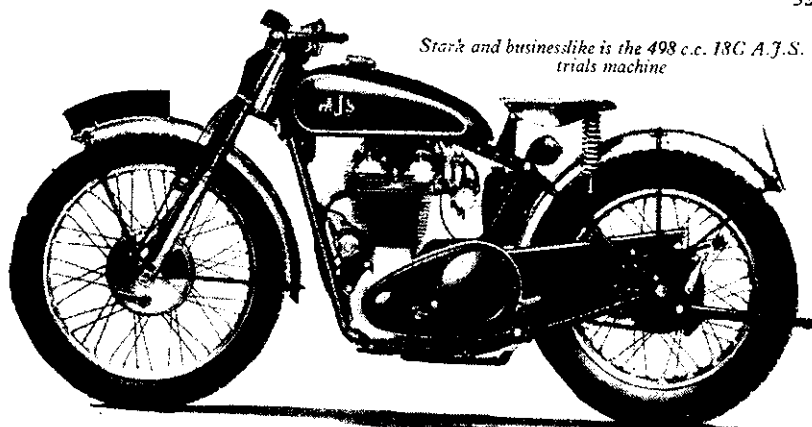
The twin pilot lights, a welcome introduction last year, are continued unaltered; they blend very well with the top edge of the new headlamp brackets. These brackets support a new headlamp shell which is basically of torpedo shape and accommodates the speedometer towards the rear. To render the speedometer easily accessible, the under surface of the shell terminates at a vertical bulkhead arranged just forward of the speedometer. Owing to the proximity of the fork legs and lamp brackets, the cutaway of the shell can barely be detected save from below.

Very nearly as clean in appearance as an inbuilt cowling, the headlamp construction just described has been adopted in preference to a cowling because headlamp adjustment is not limited, and the replacement of any damaged component is simple and relatively inexpensive.

Upper and lower steering-head crowns have been redesigned. The lower crown is a forging and is clamped to the fork tubes by socket-headed screws; the speedometer cable passes neatly through a rubber-grommeted hole in the web of the crown.

Of malleable cast iron, the top crown is of cleaner shape and the curvature on its forward face blends with the rear of the new headlamp. Overall height of the steering-head portion of the crown has been reduced; the steering column is shorter and there is a long sleeve nut, passing into the crown, whereby adjustment of the head bearings is effected.

The cleaning-up process is extended to the handlebar clamp and the fork-leg caps; the latter are deeply domed and of the



*Stark and businesslike is the 498 c.c. 18G A.J.S. trials machine*

push-in type. Handlebar shape is altered to provide increased tank clearance for the fingers on full lock. This has been achieved by a sharper bend and a rise just outboard of the clamp; the alteration gives a rather more natural grip angle.

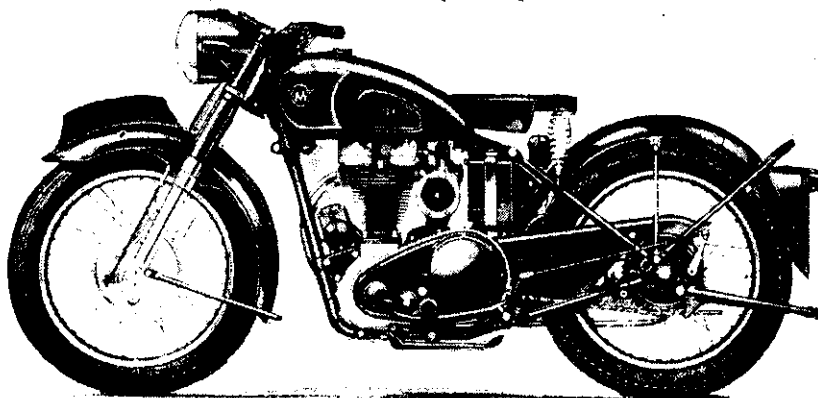
Last year a 3¼-gallon fuel tank was standardized on the 500 c.c. roadsters; in the new range this tank is fitted also on the 350 c.c. models, though not, of course, to the competition machines.

A combined mounting for the oil tank and battery carrier has been evolved which is both tidier and more robust than the previous arrangement. The seat tube is interrupted by a malleable casting which is provided with an orifice to take the air-cleaner hose. Also in the casting are two transverse holes through which pass long studs clamping the oil tank and

battery carrier to the casting. The studs screw into pommels in the tank, and the back of the battery carrier has a channel stiffener giving clearance for the nuts. The battery-retaining strap is narrower, unperforated and has the hinge tucked unobtrusively away underneath.

The rear-brake pedal has a straighter shank, and there is no retaining nut on the end of the pivot pin; retention of the pedal is by means of the stop screw which engages with a circumferential slot on the pin. The pedal-return spring is concealed under a lug on the pivot boss.

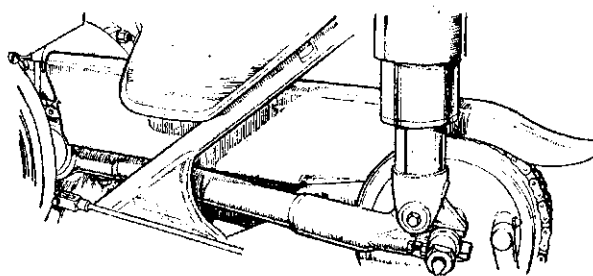
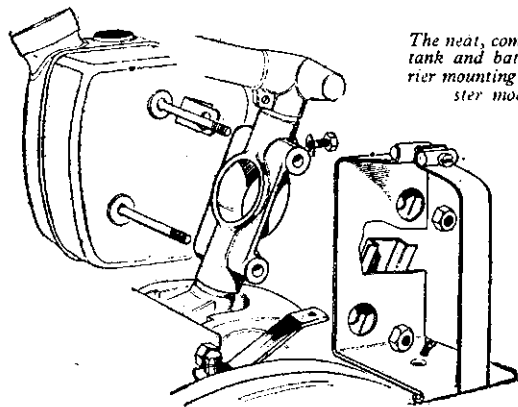
Solid-frame roadsters are fitted as standard with a saddle, the suspension of which is improved by the adoption of barrel-type springs which have a more progressive action than the previous parallel pattern.



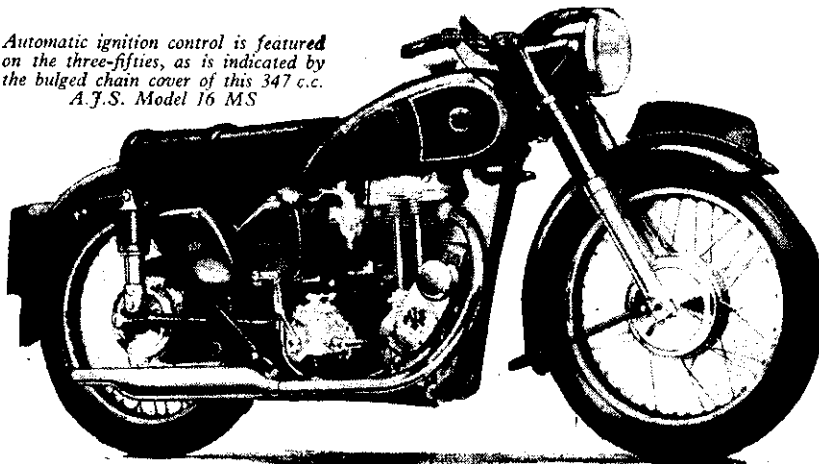
*The neat, combined oil tank and battery carrier mounting on roadster models*

*On the rear-spring machines the rear chain guard is deeper than on previous models*

*Above: the G3 L Matchless is a three-fifty with an attractive specification*



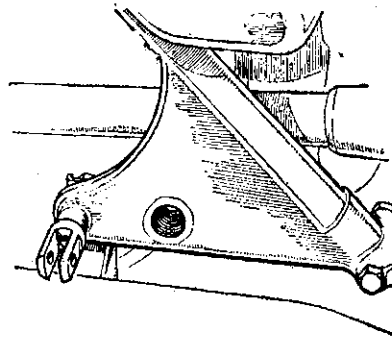
Automatic ignition control is featured on the three-fifties, as is indicated by the bulged chain cover of this 347 c.c. A.J.S. Model 16 MS



Rear-end appearance of all the models is enhanced by a full-width, light-alloy rear hub which, in appearance, is similar to the front hub. The rear component, however, does not embody the brake drum, which is still in unit with the rear sprocket. On rear-sprung machines only, the hub is quickly detachable, in which form it has a pull-out spindle and the drive is transmitted through five large-diameter pegs. The new hub shell is heavily ribbed internally and, like the front hub, has straight spokes.

On the rear Teledraulic suspension units fitted to the springers, the bottom spring abutment is no longer screwed to the slider. The abutment, now a shell moulding, is located instead by a circlip. An internal modification to the damper assembly has eliminated cavitation of the damper fluid which sometimes occurred under arduous conditions.

Attachment of the lower end of the sub-frame on rear-sprung models has been strengthened by lengthening the lugs and employing a second, upper bolt fixing in addition to the long bolt running through the bridge member which carries the rear-fork pivot. The cradle-tube extensions which formerly supported the silencers and carried the pillion footrests are replaced by shapely, box-section brackets (fabricated from pressings) which are welded to the sub-frame tubes. The brackets embody a threaded boss for the attachment of the lower rear connection of a sidecar chassis.



The fabricated sidecar lugs on the sub-frame form silencer and pillion-footrest supports

Rear-chain protection is improved on the spring-frame machines by a downward extension of the guard side valance to the level of the fork arm. In addition, the mounting of the guard is neater—achieved by the elimination of external bolts.

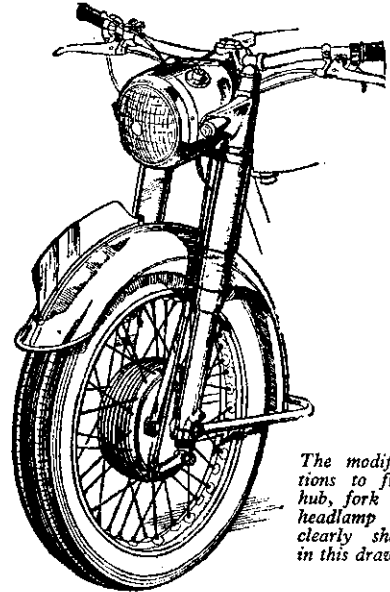
The rear-sprung mounts also have a modified attachment of the tail of the rear mudguard. Only one nut is employed on the top of the guard instead of two; of spigot type, the nut engages in a keyhole slot in the tongue on the tail.

On the lighting side, sounder earthing of the battery positive lead is provided, the cable being taken to a small ear in the angle between the top and seat tubes of

the frame. Permanent cleats for the rear-lamp lead are spot-welded to the inside of the rear mudguard, the tail of which carries a red reflector.

Ribbed front tyres of 3.25 x 19in are standardized on all the roadster machines; tests have revealed that the latest ribbed tyres give better steering than a studded tyre, and without the rather rapid wear which characterized some earlier ribbed treads.

Very few alterations have been needed to the competition models. A T.T. carburettor is featured on the rear-sprung scramblers, which also have a dual-seat with an upturned rear end. The lower run of the rear chain is protected from mud by a shielding strip welded to the

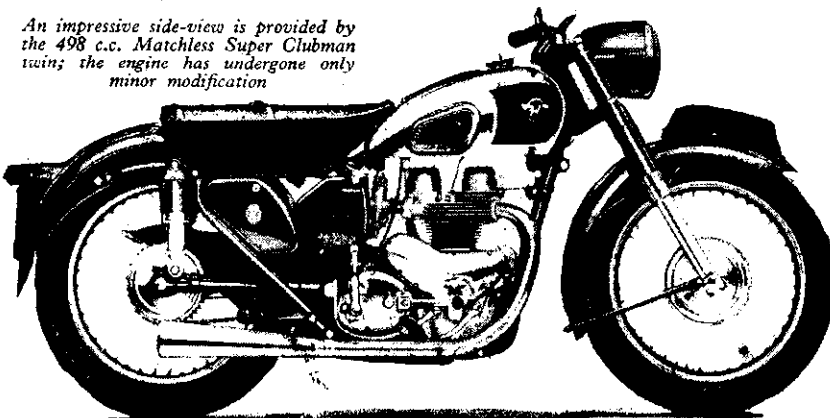


The modifications to front hub, fork and headlamp are clearly shown in this drawing

inside valance of the chain guard. Finally, a 2.75 x 21in front tyre replaces the 3.00in-section tyre on the solid-frame trials machine.

Those popular racing mounts, the 7R A.J.S. and the G45 Matchless, continue in the range, but the specifications will not be announced until after the winter's development work has been completed.

An impressive side-view is provided by the 498 c.c. Matchless Super Clubman twin; the engine has undergone only minor modification



	Basic Price	Total Price
	£ s	£ s
A.J.S. 16/M, 347 c.c.	142 0	170 8
Matchless G3/L, 347 c.c.	142 0	170 8
A.J.S. 16/MS, spring frame	163 10	196 4
Matchless G3/LS, spring frame	163 10	196 4
A.J.S. 16/MC, competition	152 10	183 0
Matchless G3/LC, competition	152 10	183 0
A.J.S. 16/MCS, competition, spring frame	176 10	211 16
Matchless G3/LCS, competition, spring frame	176 10	211 16
A.J.S. 18, 498 c.c.	156 10	187 16
Matchless G80, 498 c.c.	156 10	187 16
A.J.S. 18/S, spring frame	178 0	213 12
Matchless G80/S, spring frame	178 0	213 12
A.J.S. 18/C, competition	167 0	200 8
Matchless G80/C, competition	167 0	200 8
A.J.S. 18/CS, competition, spring frame	191 0	229 4
Matchless G80/CS, competition, spring frame	191 0	229 4
A.J.S. 20, 498 c.c. twin	200 0	240 0
Matchless G9, 498 c.c. twin	200 0	240 0
A.J.S. 7R, 348 c.c. o.h.c. (racing model)	325 0	390 0
Matchless G45, 498 c.c. twin (racing model)	325 0	390 0
Lighting extra, competition models	8 5	9 18