

AJS & MATCHLESS Postwar Singles

The bedrock of AMC's postwar production was their line of road singles from which came the off-road variants. The models had prewar roots, and wartime service so offered the solid, reliable performance, coupled with a first class paint finish, of a workhorse, at a time when it was essential. Their history and subsequent development is traced here in words and pictures.

Roy Bacon has over 40 motorcycle books to his credit and is acknowledged as a leading authority on the subject. A chartered engineer, he comments on design, as well as describing history he has lived through.



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1945-1969

Roy Bacon

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MOTORCYCLE MONOGRAPHS 11



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Front Cover: The Matchless Clubman G3L for 1949 as shown on the front cover of *The Motor Cycle* late the previous year

Back Cover: The AJS model 18S for 1954, with sprung frame and jampots, as advertised in the motorcycle press.



Road test of a 1962 Matchless G80 which was also tried with a sidecar attached. The same registration number was to appear on a test AJS as well!

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Introduction

The AJS and Matchless heavyweight singles of the post-war years had their origins in models of the mid-1930s. After the war, they continued, with limited alterations, for some two decades, gradually becoming obsolete as fashions and needs changed.

Although customers for their very British style of somewhat staid motorcycling faded away over the years, the reputation of the names remained high, thanks to the fine build quality and excellent paint finish of their products. From 1945 to 1966, both AJS and Matchless road models represented the epitome of the British single with its heavy flywheels, low engine speed and great pulling power.

Alongside the road models, there were competition versions. At first, these differed in no more than minor details, which any clubman of the day could devise for a road machine. Later, the competition models became more specialised and, in time, split into two streams, these being for trials or scrambles use. One scrambler continued alone to carry the Matchless name up to 1969, before the marque vanished. However, the name was revived in the late 1980s with another concept.



Gordon Jackson on a big AJS during a 1960 scramble; a type of event in which he was competitive, although he was better known for his trials riding skills.

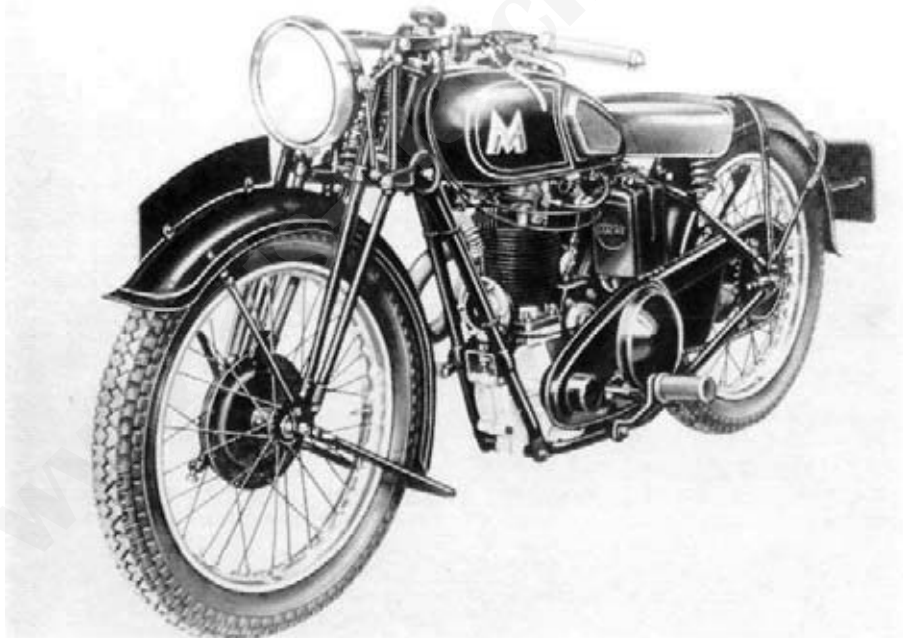
Prewar origins and wartime service

Both the AJS and Matchless companies had their roots in the dawn of motorcycling and followed their own paths up to 1931. Then they amalgamated, AJS going into liquidation and being taken over by Matchless.

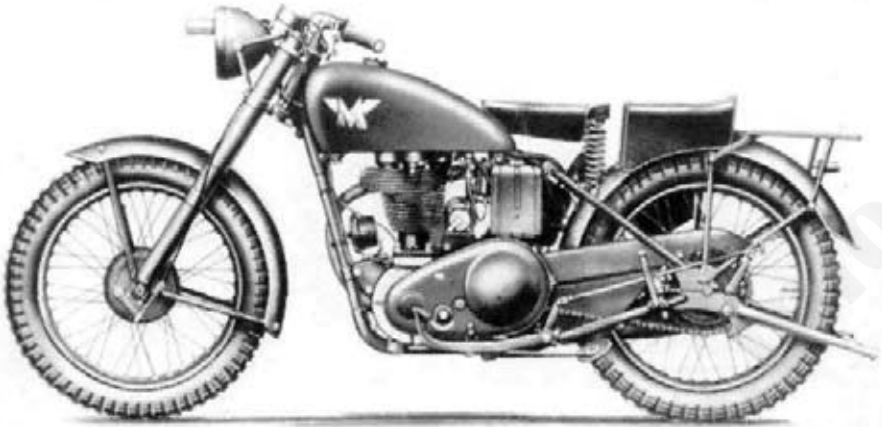
AJS had been founded by the Stevens family and first won in the TT races in 1914, and then in 1920, 1921 and 1922. They rode the crest of that wave through the 1920s, but

over-extended as the decade ended with the Depression. The technical enterprise remained, however, with an overhead-camshaft engine appearing in 1927 and a transverse V-twin in 1931, but then the money ran out.

The Matchless firm was founded by the Collier brothers who were soon successful in the track and road races of the early Edwardian era. They moved on to Brooklands



The start of the singles line came with this 1935 Matchless G3 which set the style and general design.



In 1941, the G3 gained telescopic front forks to become the G3L and served the services well.

and the new TT races when these were first run, enjoying equal success and three TT wins in the first four years of the event.

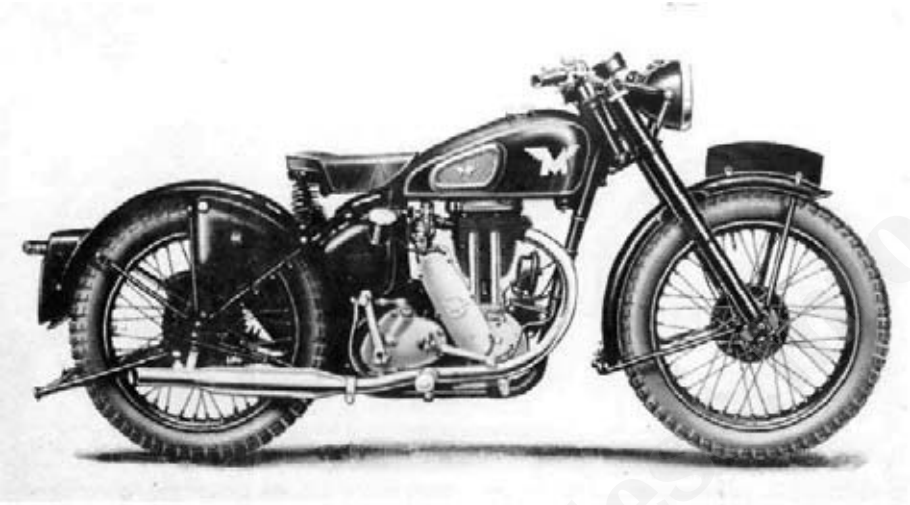
During the 1920s, they had more success in reliability trials and built up a good range of machines to sell to the public. For 1930, they introduced the V-twin Silver Arrow, and the next year the much more exciting V-4 Silver Hawk, which had an overhead camshaft engine despite the hard times.

They were successful enough to be able to absorb AJS, whose production they moved from Wolverhampton to their works at Plumstead, in South London. The AJS models survived the transfer well enough, although the overhead-camshaft models dropped out of sight for a year or two, and the range continued with little change for a while. The Matchless models did the same and, as with many firms during those difficult times, the com-

pany kept to a simple range of singles and V-twins. The exotic Silver Hawk was listed up to 1935, but found few customers as riders were so hard up.

The first signs of real amalgamation appeared in 1935 when Matchless introduced their G3 Clubman and AJS their similar model 16. Both had 348 cc engines, and the AJS ranks soon included larger and smaller versions plus twin-port and side-valve models. Matchless followed suit in 1936, so that in a short space of time little was left from the past, other than the massive V-twins that were sold for hauling sidecars.

In 1937, the Sunbeam company was taken over by Matchless and, with AJS, the three firms were registered as Associated Motor Cycles or AMC. The combination did not stay together for long, and in 1943 the Sunbeam name was sold to the BSA group, but the AMC name remained at Plumstead. From then on, it was

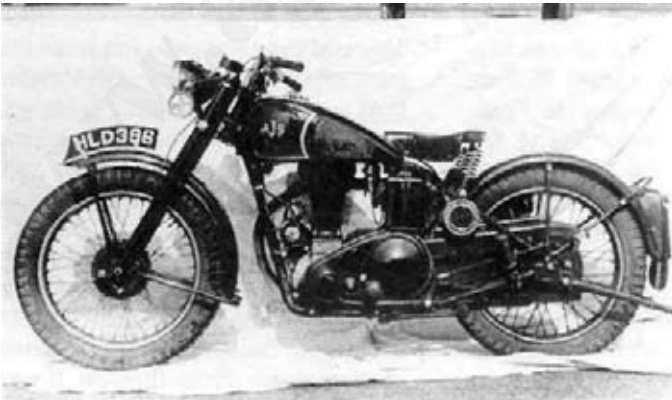


At the end of the war, the G3L was given a coat of black paint and ran on for the civilian market.

used to refer to the two marques as a pair, this becoming more and more acceptable as their ranges became common. This was well in hand by the end of the 1930s, while for 1940, the Matchless models adopted a frame with single downtube, which was very similar to the one AJS had used for some time.

During the war, AMC produced some 80,000 machines, all but a few

being in the Matchless form. The only real difference lay in the position of the magneto, which went ahead of the cylinder on the AJS and behind it on the Matchless. Both had the dynamo behind the crankcase, above the gearbox, so it was difficult to remove in the former case, and even more so in the latter. The early war-time machine was the Matchless G3 of 348 cc with



Drive side of the model 18 AJS which was as for the other singles with the infamous pressed-steel chaincase.



Harry Louis of *The Motor Cycle* with a competition AJS and Jock West of AMC on a road model in the Isle of Man for the 1947 TT.

overhead valves, four-speed Burman gearbox, rigid frame and girder forks. This was built up to 1942, but from 1941, AMC also produced the G3L, which was lighter and fitted with telescopic front forks. It became a Forces' favourite, for it was fast enough to cope easily with convoy duty, while the new forks gave it comfort and roadholding denied to

other makes.

The G3L was used for an experiment with rear suspension in 1944, but otherwise continued to be built unaltered until the end of the war. Thus, it was fully developed for peace-time use and went over to this with minimal change, other than colour.

Postwar start

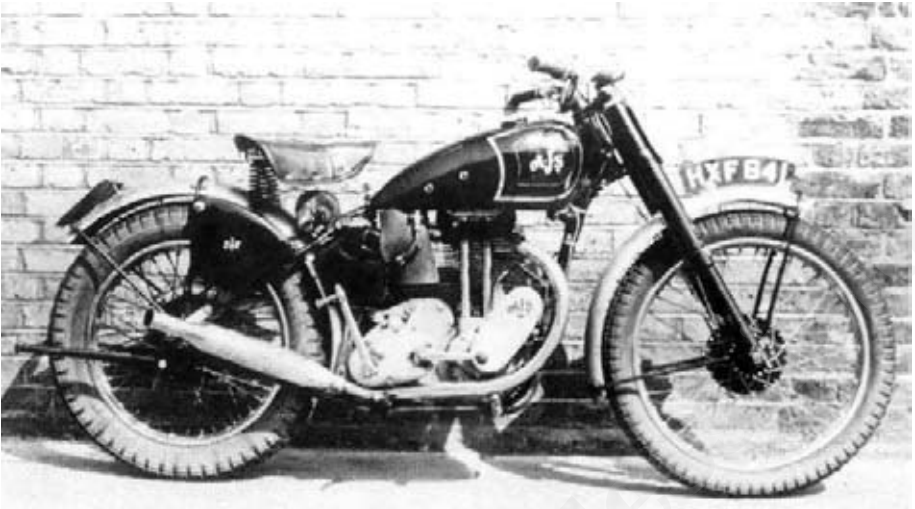
After the war, AMC continued and extended the practice of duplicating its models in the ranges of both marques. At first, there were some features to distinguish one from the other but, in time, these disappeared until the process was simple badge engineering. The only exceptions were the road racing machines and the final Matchless models.

To enthusiasts and clubmen of the time, it was well known that the machines were all built on the same line at Plumstead, using the same detail parts in most areas. Despite

this, each marque had its adherents, and the firm fostered this by advertising each range separately, and by running two competition teams in both trials and scrambles. The first post-war AJS models were announced a week ahead of the Matchless ones, and each range comprised two very similar singles. These were of 348 and 497 cc, the AJS ones being coded as the models 16M and 18 respectively, while the Matchless versions were the G3L and G80 Clubman. All were based heavily on the wartime G3L and, thus,



A 1948 AJS road single undergoing a test during trials carried out in 1955 before the general introduction of the annual MoT.

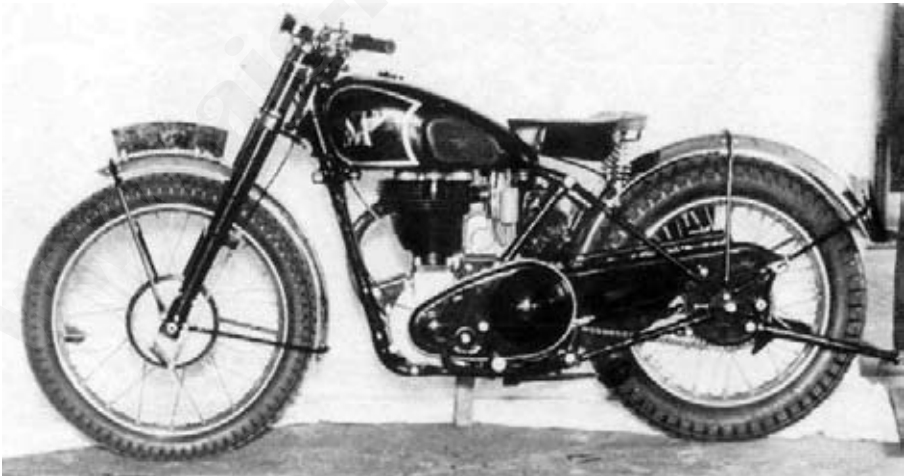


Hugh Viney's AJS as used for the 1948 Sottish Six Days Trial, the second year of his hat-trick of wins.

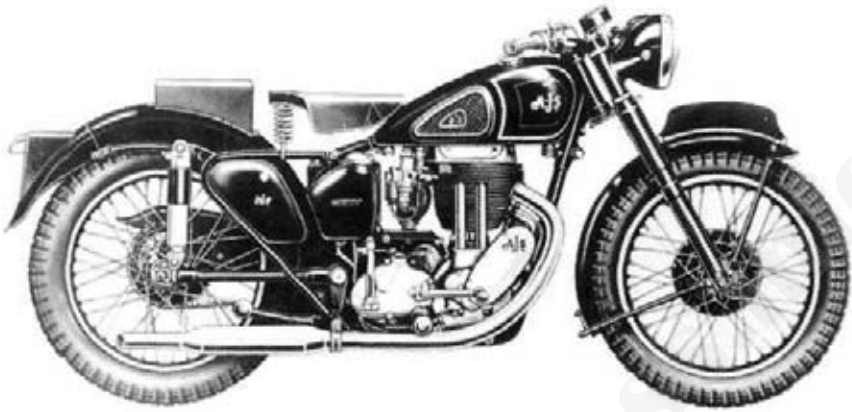
could trace their roots back to 1935. All were to continue to use a coding system of number plus letter suffix for AJS, and letter 'G' plus number plus similar suffix for Matchless. To avoid repetition, the machines are henceforth listed with the AJS ma-

chine first and by model type only; all Matchless models start with the 'G' anyway.

The single-cylinder engines used by the four models were all based on a 93 mm stroke, which was combined with a 69 mm bore for the



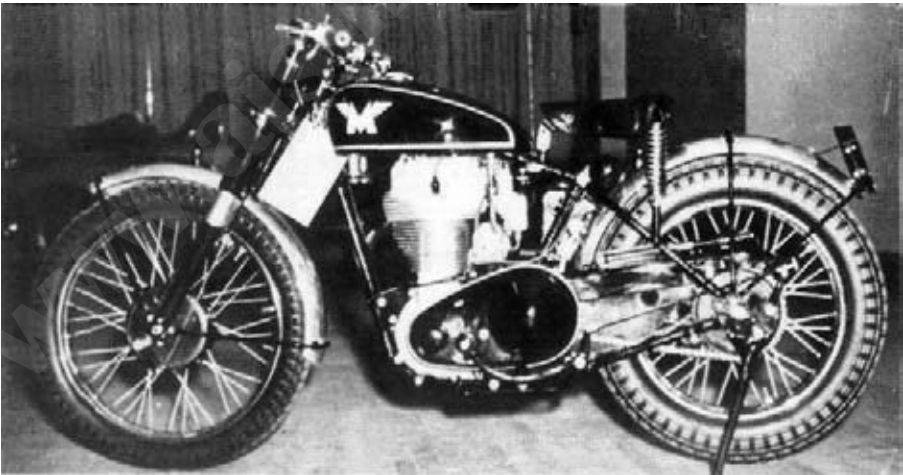
Drive side of a 1948 competition Matchless which was little altered from the standard machine.



First of the sprung models was this 1949 AJS model 18S with candlestick rear units.

smaller and an 82.5 mm bore for the larger. Their construction was in the traditional British style with overhead valves, separate gearbox and dry-sump lubrication, which kept the crankcase small and compact.

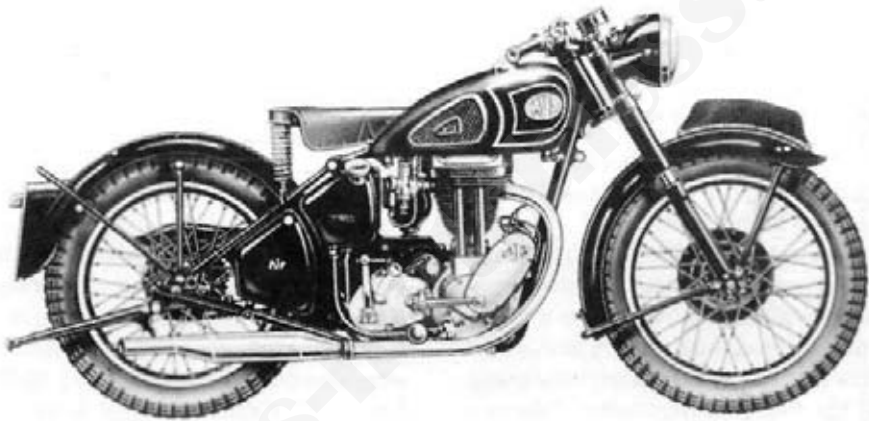
The built-up crankshaft had flywheels whose balance weighting varied between the engine sizes to cope with the different piston weights. The detail parts were common, the drive-side mainshaft being a keyed, parallel, fit in the



The competition Matchless with alloy engine at the 1950 New York show; smaller petrol tank also reduced the machine weight.

wheel where it was held by a nut. For the timing-side shaft, there was a taper fit and a nut, but no key. The crankpin was a parallel fit in both wheels, and had the bearing sleeve pressed on to it and nuts to hold it in place. This form of construction allowed the use of a tough pin and hard sleeve without heat-treatment problems, or the need to radius the edge of the pin-hole in the wheels. Later one-piece replace-

sleeve pressed into the big-end eye of the connecting rod. The rod was bushed at its small-end for the fully-floating gudgeon pin, which held the three-ring piston and was retained by circlips. The piston was conventional, with a split skirt, and the compression ratios were 6.35:1 for the 348 cc engine, and 6.0:1 for the 497 cc one. The ratio of the larger engine was set with a single compression plate under the cylinder

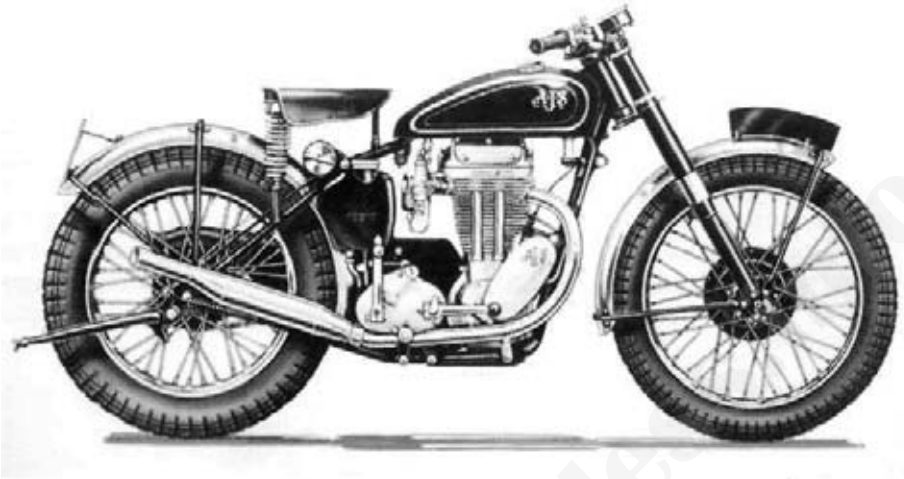


Rigid model 16M for 1951 with little change from its postwar restart or prewar introduction.

ments could have problems on both counts, as the heat treatment to combine the right degrees of toughness and hardness was tricky to get correct. In addition, this form needed a radius in the shoulder corner, and without a matching radius for the pin-hole, there could be a clash, high stress and pin breakage.

The big-end bearing comprised a light-alloy cage with three rows of rollers that ran in the hardened

der; in later years, and for the competition engines, these were often used to arrive at the desired figure. The crankshaft turned in a pair of ball races on the drive side and in a bush and a roller race on the timing side. These bearings were housed in the crankcase whose light-alloy castings met on the engine centre-line, there being an array of bolts to clamp the two halves together. There were different crankcases for the two engine sizes, but both had a



The competition AJS single with alloy engine and cylindrical toolbox as seen in 1951.

timing chest incorporated in the right-side case with the oil pump housing beneath it.

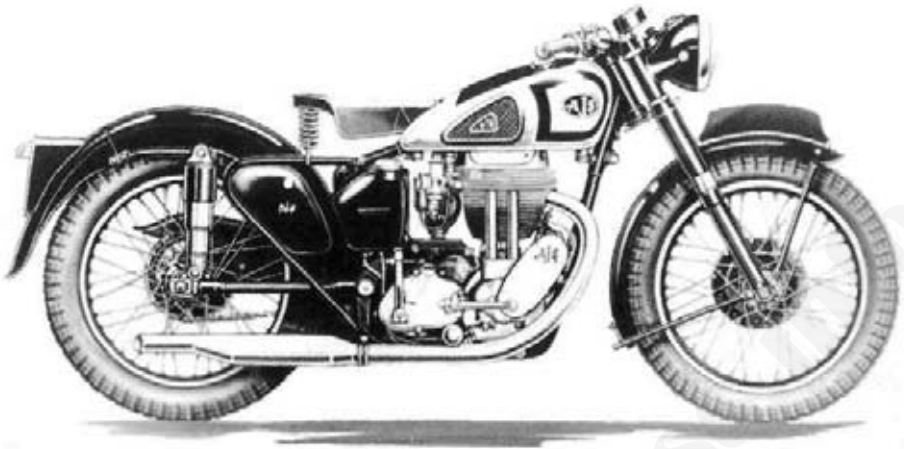
The top face of the crankcase was machined to take the cast-iron cylinder, which was held on four short studs by long nuts. The cylinder fins were regular, except where cut away for the two pushrod tubes, and ran down most of the length of the barrel. At the top, the cylinder was spigoted into the cast-iron head, with a gasket to seal the joint, and four bolts held the head down.

The top of the cylinder head was machined to take the rocker box, which sat over the single well cast into the head. This well ran round the valve guides, which were pressed in to a dimension. Each valve had a cap and was controlled by duplex coil springs that had a seating located on the guide and were retained by a collar and col-

lets.

The rocker box was a light-alloy casting with a side cover held by three nuts. It was bushed for the rocker spindles, each of which had a separate arm splined to each end and retained by a nut. The assembled box was fitted on top of the head with a gasket to seal the joint, and the pushrod tubes ran down from the box to the crankcase. Inside the tubes were the pushrods, which had adjusters at their upper ends, and which sat in tappets that moved in guides pressed into the crankcase.

A cam went below each tappet, the camshafts being gear driven from a pinion mounted on the crankshaft. The shafts themselves differed, one being short while the other extended through the wall of the timing cover to drive the magneto by chain and two sprockets. For the AJS, this

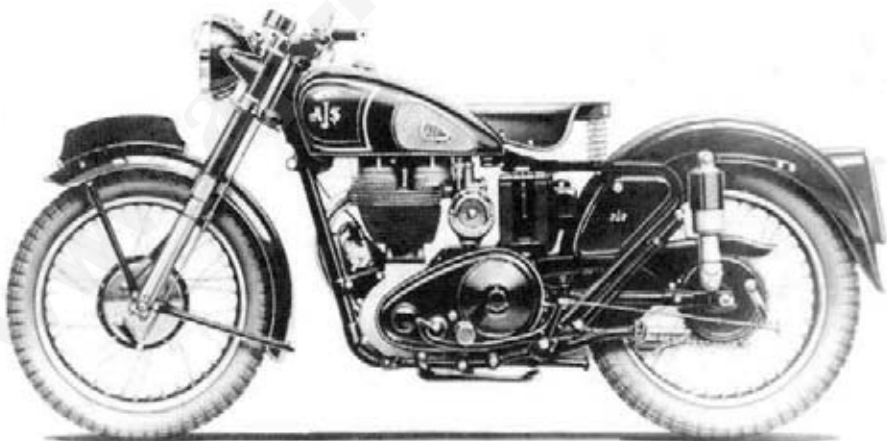


Jampots for the rear suspension on this 1951 model 18S AJS which still had a saddle rather than a dualseat.

longer shaft went at the front and carried the exhaust cam, while for the Matchless it was to the rear and had the inlet cam. In practice, the two camshafts were common to both marques, at that time, and were simply switched over as necessary. In either case, the exhaust tappet

guide was cut away so that a valve lifter could reach through it to the pushrod. The lifter turned in a hole in the crankcase, was held in place by its return spring and was connected by cable to a handlebar trigger.

The timing cover varied to suit



Still a saddle for this 1952 model 18S which had a revised gearbox and small access cover in the chaincase.

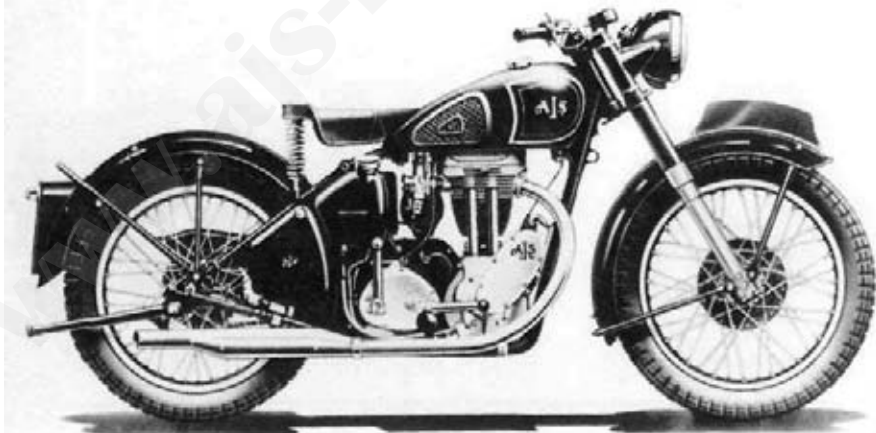
the marque, for it included the inner wall of the magneto chaincase. This wall ran to front or rear as needed, but the main section was essentially common to both types. An outer cover enclosed the chain, and was shaped and marked to suit, while the magneto was mounted on a platform to the front (AJS) or rear (Matchless) of the cylinder and above the engine mounting plates. The magneto was a standard Lucas component with manual advance from a lever mounted on the handlebar.

Lucas also supplied the 6 volt E3 dynamo which was unique to AMC, as it was chain driven. This drive was taken from the left-hand end of the crankshaft, a sprocket being machined as part of the main engine one, while the chain ran inside the primary chaincase. The dynamo was clamped in the engine plates, behind the engine and above the gearbox, so it could be rotated to

set the chain tension.

Removal of the dynamo was a major task compared with machines that used the mag-dyno where the generator came off really easily. On the AMC models, it meant opening up the primary chaincase to gain access to the sprocket. On the AJS, it was feasible to pull the gearbox back to allow the dynamo out, but Matchless owners were faced with a more difficult job. Their rear-mounted magneto obscured the dynamo and forced them to remove the whole of the primary drive to gain access to the dynamo. To follow the AJS path was only feasible if they removed the inner timing cover first and, thus, lost their ignition timing. Owners came to dread charging problems!

The engine was lubricated by a dry-sump system supplied by an external tank. The oil pump was a two-diameter rotating plunger, which was driven by a worm cut



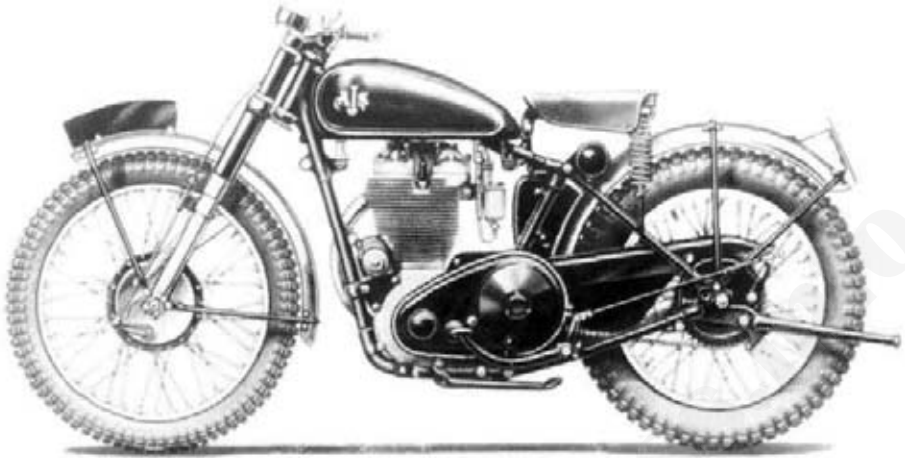
An underslung pilot light was one of the few changes for this 1952 model 18 AJS along with the revised gearbox.



A dualseat for the 1953 Matchless G80S enhanced its lines as well as improving rider comfort.

into the timing-side mainshaft. The plunger lay along the timing chest, just below the crankshaft, and had a cam-track cut into it near one end. A fixed pin engaged with this so that the plunger was forced to move to-and-fro as it rotated. The combination of the two movements provided both feed and scavenge pumping, the latter of greater capacity thanks to its larger plunger diameter.

There was no pressure release valve, so the oil from the feed pump went straight into the crankshaft and the big-end. There was also a feed to the cylinder wall with a ball valve in it so that the bore received more oil when the engine was cold. Once the engine had warmed up, less oil was passed this way, but more was splashed up from the big-end.



The competition model 18C for 1953 when rigid machines were still popular for trials work.

A pressure feed was taken from the front end plate of the pump for the rocker box. This line fed into the box where an adjustable needle valve controlled its flow, after which the oil drained down the pushrod tubes to lubricate the cams and timing gears. Engine breathing was by a simple flap-valve, which was fitted into the rear of the drive-side main-bearing housing in the crank-case.

The engine was supplied with fuel

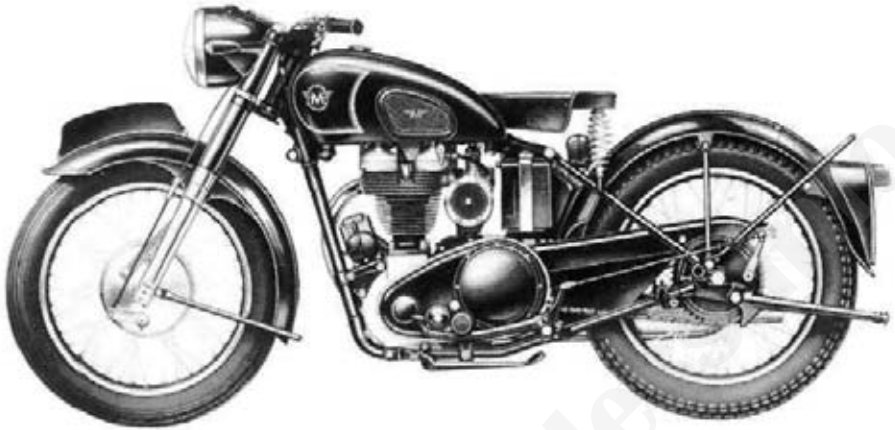
by a flange-mounted Amal carburetor with separate float chamber. For the 348 cc engine, a type 76 of 1 in. bore was used, while the 497 cc engine was fitted with a type 89 of 1-3/32 in. No air filter was listed, even as an option, at that time. On the exhaust side, there was a pipe that ran down to a tubular silencer on the right. For the smaller engine, the pipe ran above the footrest, but for the larger one, it went below it. All models were fitted with a



Nice 1954 model 16MS being shown by the French Monneret family who had much to do with AMC for many years.



A 1954 Matchless being craned off its work trolley at the factory prior to road testing.

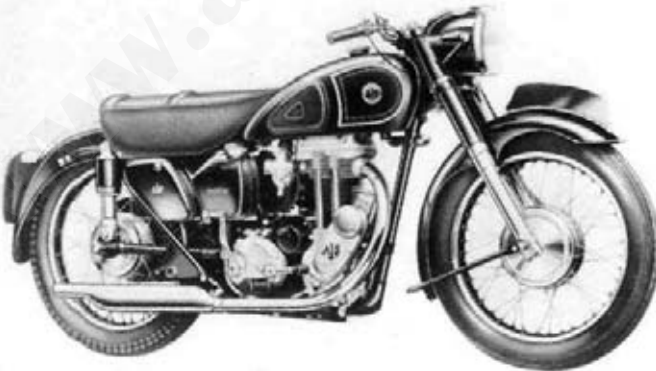


The last year for the rigid models was 1955 and this is the G3L with full-width hubs front and rear.

separate four-speed Burman gearbox with footchange. This was driven by a single-strand primary chain and multi-plate clutch, while the engine sprocket incorporated a two-lobe, cam-type shock absorber. The primary drive was enclosed by a two-part, pressed-steel case, which had a seal at the joint and a band

that ran round it with a clamping screw at the rear. It was very prone to leaking oil and was to plague owners for many years.

The clutch plates were clamped together by four compression springs. The friction plates had fabric inserts pressed into their cut-outs, there being four plates for the



By 1955 this 16MS had pilot lights and auto-advance ignition as well as the new hubs.

350s and five for the 500s. The clutch chain wheel ran on free rollers, while the centre was splined to the gearbox mainshaft. Clutch operation was by means of a lever on the right and a long pushrod that ran across to the pressure plate.

The gearbox was in the traditional British style with the clutch out-board of the final drive sprocket and both on the left-hand side of the machine. The sprocket was splined

to a sleeve gear, which was concentric with the mainshaft, while the layshaft went below them. The gears were moved by selectors fitted to a barrel cam which, in turn, was rotated by the positive stop mechanism. A gear pedal went on the right-hand side, as did the kickstart lever. The kickstart turned a quadrant, which meshed with a ratchet gear on the extreme end of the mainshaft, and was returned by a clock



A 1955 Matchless single with its traditional lines that were due for some changes for the next year.

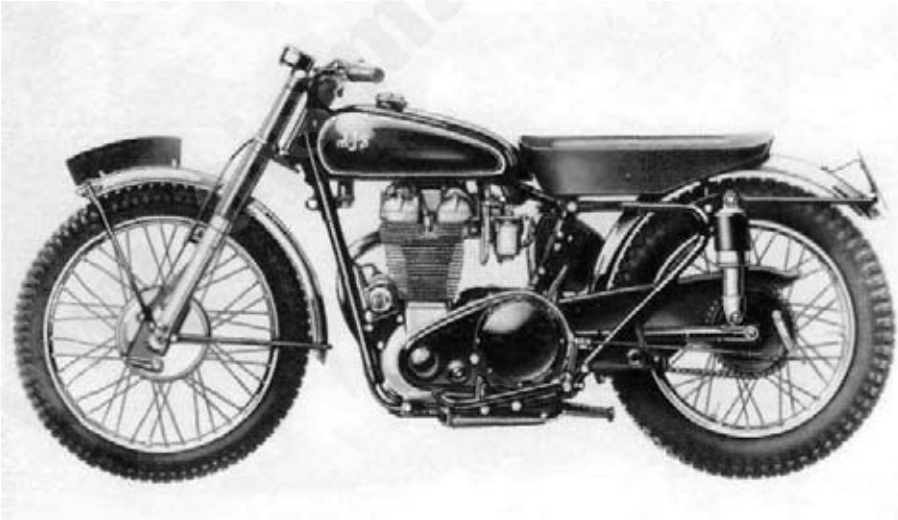
spring. The whole gearbox mechanism went into a light-alloy shell, which was fitted with inner and outer covers on the right.

A rigid frame held the engine and gearbox in front and rear plates, these differing between the marques to suit the alternative magneto location. The frames were of the tube-and-lug type, brazed together into front and rear sections. The front combined the top, seat and downtubes, while the rear comprised the upper chainstays and the lower rails, which ran from the downtube to the rear wheel.

For the front suspension, AMC continued with the Teledraulic forks they had developed for the wartime G3L. These had external springs, which were concealed by shrouds, and hydraulic damping. The lower legs were in light alloy and had

separate caps to clamp on the front wheel spindle. The forks turned in cup-and-cone bearings, and no steering damper was offered, even as an option.

Both wheel hubs were spoked to 19 in. rims and turned on special taper-roller bearings. These bearings were not the usual items as, for each wheel, the spindle formed the inner race for both and carried the two roller cages and rollers to make a single assembly. Only the two outer races were separate, one being located with a spring ring in the hub, while the other was adjustable by threaded ring and locknut to set the bearings. The front wheel had a solid spindle that ran across between the fork legs, but the rear wheel spindle was shorter and hollow with a longer spindle that ran through it to the rear fork lugs. This



The smaller sprung competition model 16MCS of 1955 which had to carry the same weight as the larger single.



Works rider, Bob Manns, about to take the first of the 1956 Matchless G3LC trials models out for its road test.

unusual construction had been used by AMC for some time and provided an excellent wheel bearing, albeit rather more expensive and critical in adjustment than most.

Both hubs had a separate $6\frac{1}{2}$ in. brake drum. That at the front had a small flange for the fixing screws that held it to the hub, but the rear drum had more of an inner wall and incorporated the rear wheel

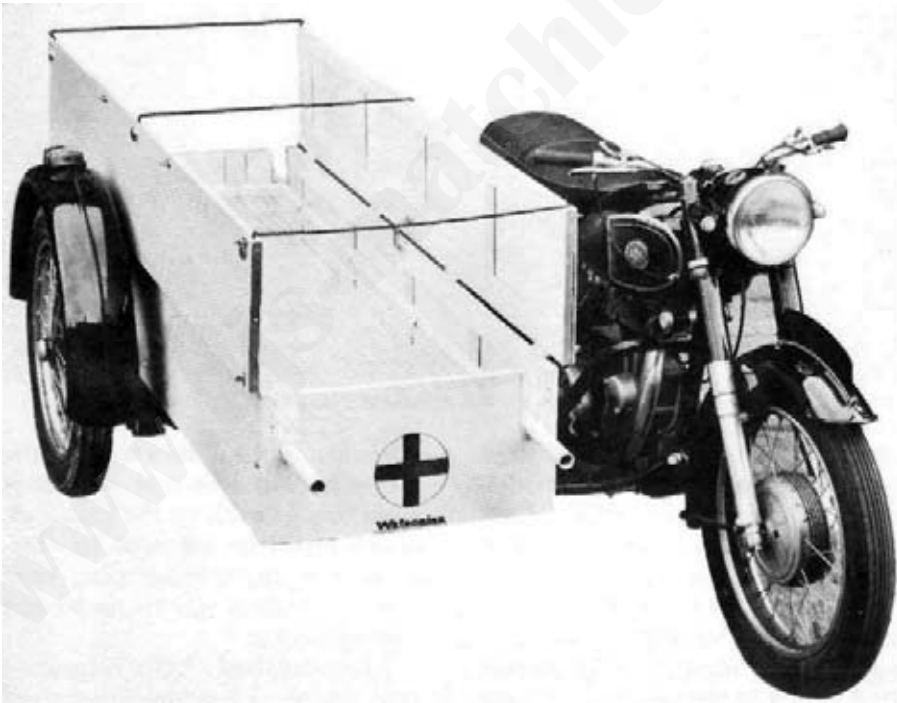
sprocket. Both brakes were of the single-leading-shoe type, and each shoe had a collar, at the cam end, which could be adjusted to compensate for brake lining wear. Rear brake operation was by pedal and rod on the left.

All models had a 3.25 x 19 in. front tyre, and the 348 cc machines used the same size at the rear. For the 497 cc models, the rear tyre was 3.50 x

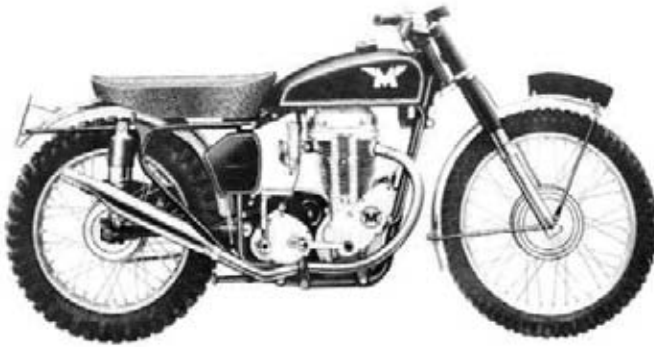
19 in. and the wheel was not quickly-detachable. Neither mudguard was valanced but, as was usual, the rear stay of the front mudguard doubled as a front stand, while the rear section of the rear mudguard could be detached to assist wheel removal. In addition to the front stand, there was a rear one and a prop stand, with ample foot, which flew back if the weight was taken off it. A lifting handle was provided to help manoeuvre the machine on to the rear stand, and there was an optional rear carrier to replace it if desired. The oil tank went under the saddle on the right-hand side and

was matched by the battery carrier on the left. A toolbox went behind the oil tank, above the upper chainstay, while a pillion pad and footrests were available as options. The 3 gallon petrol tank had twin taps, kneegrips and marque transfers, these last being the AJS letters or the 'flying M' for Matchless.

Controls were conventional, both air and ignition levers being mounted on the handlebars which, thus, were quite crowded with clutch, front brake and valve lifter levers as well as the twistgrip, horn button and dipswitch. The main light switch, with the ammeter, went



An AJS single hitched up to a Watsonian ambulance sidecar for the Iraqi Ministry of Health to try out in the narrow streets of Baghdad in 1956.



The scrambles G3LCS of 1956 with the new short-stroke engine with pushrod tunnel integral with the barrel.

into a small panel mounted in the back of the headlamp shell. Four stays supported the shell from the fork yokes, and the upper yoke carried the 80 mph or 140 kph speedometer, the choice depending on the country for which the machine was destined.

The finish was in black for most parts, including the wheel rims, and

only the exhaust system, pushrod tubes and some minor details were chrome-plated. The petrol tank was lined in gold for AJS models, and in silver with a black pinstripe for Matchless versions, while the marque name transfers were coloured to match.

Thus, with little real alteration from their war-time production,

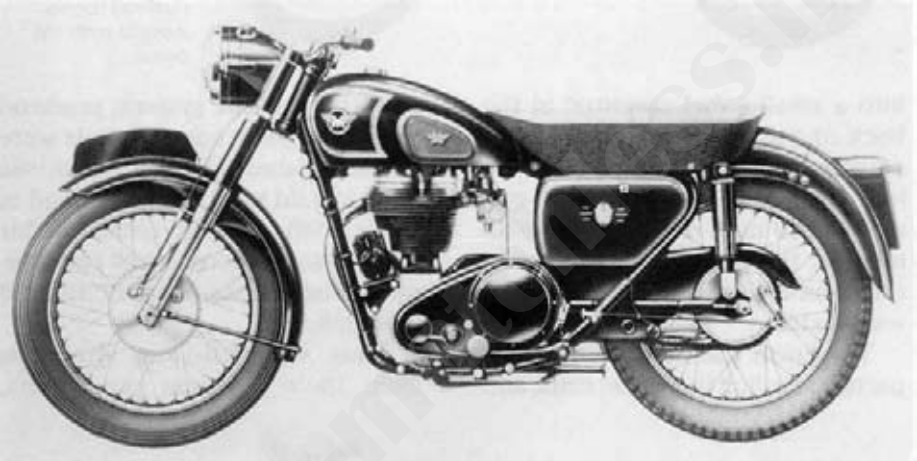


By 1957 the AJS 16MC trials model was fitted with the AMC gearbox and Girling rear units.

AMC were back in business and had a two-model range for both marques. This soon doubled in size, for 1946 saw the introduction of competition versions of each model, which had a letter 'C' added to their model type. Therefore, the smaller machines became the 16MC and G3LC.

The changes for competition use were minimal, most parts being as

rod for all was shortened by ½ in., and a two-start oil pump worm and plunger were adopted. During the year, the timing-side roller bearing was omitted and the bush made longer to compensate. The road models were given a flare to their chainguards, while the 348 cc exhaust pipe copied the 497 cc one to run under the footrest. The Matchless tanks were fitted with a chrome-



The road Matchless G80S of 1957 with long, thin toolbox to match the oil tank.

standard. The silencer was upswept and the lights became optional, while light-alloy mudguards, still in black, were fitted. The control cables were duplicated and the wheels had heavy-gauge spokes. The tyres were of a trials pattern and the sizes were altered to 2.75 x 21 in. front and 4.00 x 19 in. rear. The gearing was lowered, but the standard 3 gallon petrol tank was retained, as was the finish.

The eight models continued much as they were for 1947, but with some engine alterations. The connecting

plated 'flying M' badge in place of the transfer, and this finish was also applied to the handlebars and wheel rims. The rims were further decorated with black centres lined with gold for AJS and silver for Matchless.

The main change for 1948 was to 7 in. brakes for both wheels, the front brake adopting a two-bolt anchor for its backplate. The handlebar clamp was changed to four bolts to secure it, and there were fork modifications and an adjustment to the saddle springs for alter-



Gordon Jackson discussing his prototype 1959 trials machine with Harry Louis of *The Motor Cycle*.

ing the seat height. The competition models had their front tyre section increased to 3.00 in., and the finish was brightened a little more. For export, the singles had chrome-plated petrol tanks with painted and lined panels, the Matchless colour being red, which was matched by the wheel rim centres, both areas being lined in silver. This finish harked back to that used in the late 1930s and showed that the

early post-war austerity was beginning to be beaten, although there was still a long way to go.

During the year, the 348 cc engines began to use the 497 cc bottom half, so these became common in most respects. The flywheel diameter of the larger engine became the standard, but the balance weighting still differed to match the two sizes of piston.



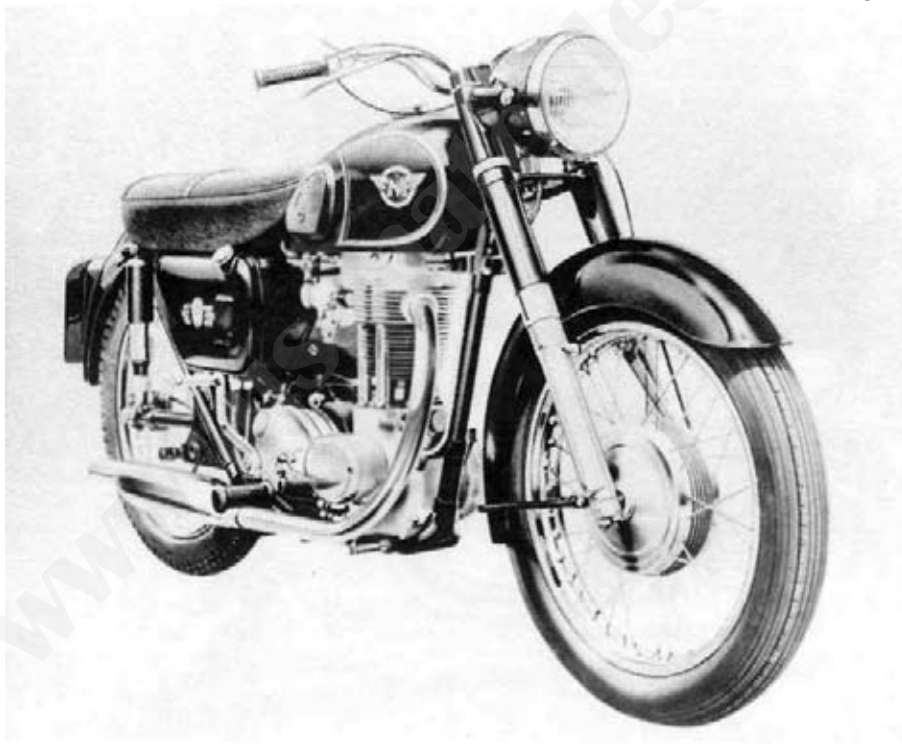
The works Matchless singles used in the 1958 ISDT standing outside Angus Herbert's shop in Sevenoaks during a run out with the press men from *Motor Cycling*.

Spring-frame models

The range of machines was increased to twelve for 1949 with the addition of versions with pivoted-fork rear suspension. They were distinguished by the addition of a letter 'S' to the model type and only built for the road. Thus, the AJS machines were the 16MS and 18S, while the Matchless models were the G3LS

and G80S.

Both sizes of engine were modified for all models by the adoption of hairpin valve springs. This meant a new cylinder head for both engine sizes plus a common rocker box. The opportunity was taken to move the exhaust valve lifter up to the rocker box, where it was out of sight



Road going Matchless G3 for 1959, the year the machine codings changed. Alternator and coil ignition replaced the magneto and dynamo from 1958.



A trio of 1959 model 16C trials machines with their small brakes and shortened subframe. Virtually their final form.

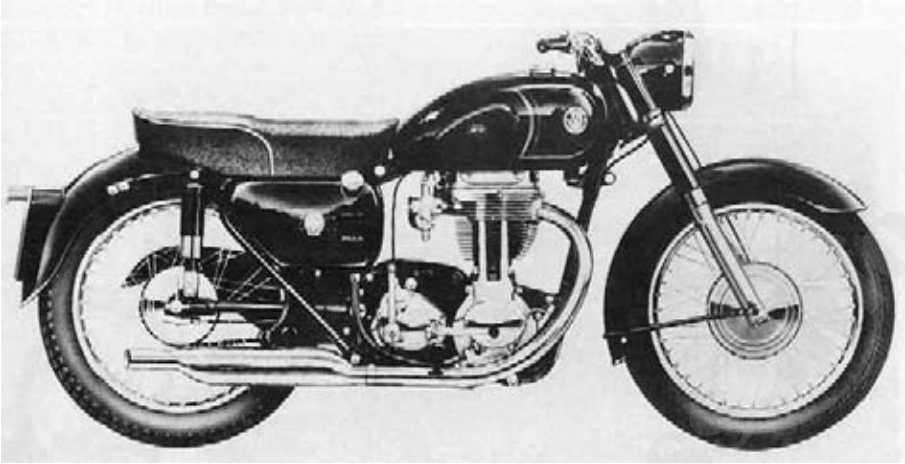
and where its operating cable was no longer in danger of being burnt on the exhaust pipe. The engine fins were made deeper, and an air filter option was made available for the first time.

The rigid frame continued much as before, but with sidecar lugs, and the front section was common to both rigid and sprung road models. The rigid rear remained as it was, while the sprung type had two side rails, a bridge and subframe. The rails ran along each side, from the bottom of the downtube, under the engine and gearbox, to extend to the rear to support the pillion rests and silencer. The rear subframe had a loop on each side, which ran back from the seat nose to the rear unit top mounting and then down to the rails. The bridge was a massive, light-alloy casting that linked the

frame members and carried the pin on which the rear fork pivoted. Thus, this fork straddled the bridge and required the pin to be pressed out when dismantling the parts to replace the fork bushes.

The rear suspension units were made by AMC and, due to their slim lines, were later known as 'candlesticks'. Each had covers to enclose the compression spring and was hydraulically damped, but the volume of oil was to prove critical and insufficient to give the damping facility any real length of life. The units had clevis ends, top and bottom, which made them unique, and made it awkward for owners to change to proprietary types.

The sprung models had twin toolboxes, one being tucked into the subframe corner on each side, and were fitted with a centre stand,



The 1960 model 18 with new, duplex frame and smaller headlamp shell but still much as in the past.

while retaining the saddle for the rider. For all models, there was a quarter-turn petrol filler cap, rectangular form of rear lamp, dynamo control unit mounting on the side of the battery carrier, and option of a steering damper. For the competition models alone, there was an undershield to protect the crankcase. The finish remained as for 1948, other than the chrome-plating of the new rear lamp body.

There were more changes for 1950, with a new silencer with offset inlet and outlet pipes, standard taper-roller bearings in the rear wheels, a five-spring clutch for the 497 cc models, and a torque stay for the front brake. The road models were given ribbed mudguards and longer carburettor bodies, while the toolbox on the rigid machines was repositioned between the chain-stays on the right-hand side.

The competition models received

more extensive alterations, for they changed to an all-alloy top half held down by four sleeve nuts that were screwed on to long studs in the crankcase. The cylinder head had the valve seats cast in place, and the barrel an iron liner, while no gasket was used between the two. The engines were fitted with Lucas 'wader' magnetos, and both capacities drove through the five-spring clutch. On the outside, the appearance was much improved by a slim 2¼ gallon petrol tank, while the toolbox became cylindrical and was mounted under the saddle. The headlamp was made quickly-detachable, and the finish for all models was as in 1949, except for the chrome-plating of a minor detail of the front forks, and the use of a transfer for the competition Matchless petrol tank.

The finish stayed as it was for 1951, but an oval tank badge was

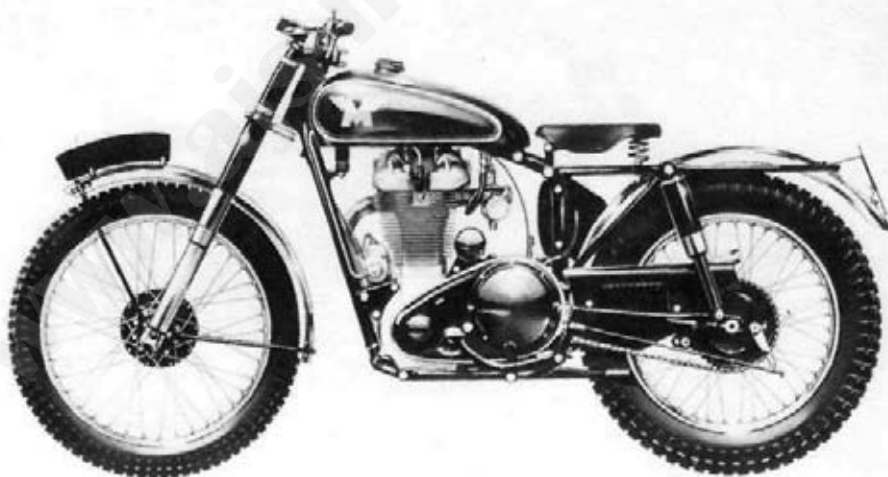
used by the AJS models, and the metal Matchless 'M' for the competition versions of that marque. This side of the range was doubled by the introduction of sprung-frame versions, which were coded by the addition of a letter 'S' to the 'C' and the basic model. The results were the AJS 16MCS and 18CS, while the Matchless equivalents were the G3LCS and G80CS.

All the models with rear suspension had new rear units that year, these being of a larger diameter with greater oil capacity. They soon became known as 'jampots', and the name not only stuck, but became that used for the magazine put out by the British AMC owners' club. All the road models changed to a light-alloy cylinder head, but kept the iron barrel. In addition, the horn button was screwed into the right-hand side handlebar, so its wiring

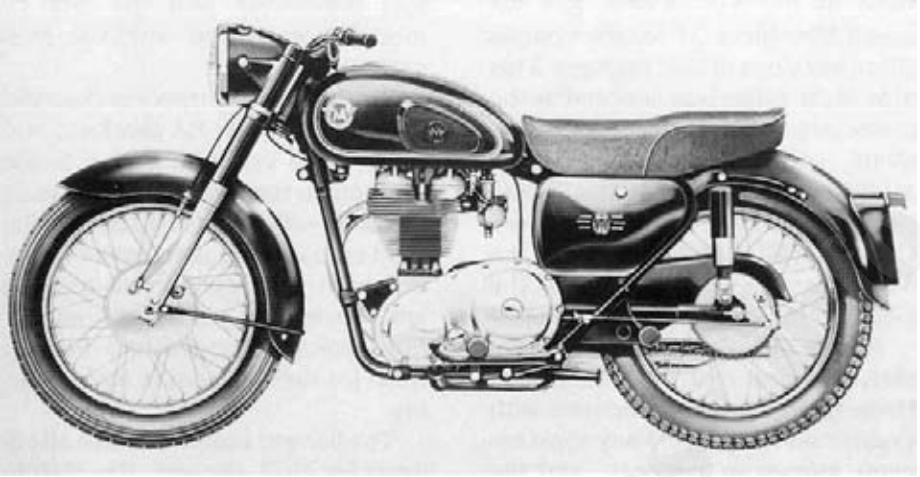
was concealed, and the 348 cc models were fitted with the five-spring clutch.

The competition models changed to a Burman type BA gearbox, and the sprung versions had a single toolbox on the right, the item being common with the road machine. The rigid competition machines continued with their cylindrical toolbox and, during the year, the competition engines changed to a flanged bush for the timing-side main bearing.

The flanged bush went into all engines for 1952, the year the Matchless finally copied the AJS and had its magneto moved to the front of the engine. In this, it did not completely follow the AJS, for the arrangement of the inner and outer timing covers differed, as did the line of the engine. The 497 cc road engine lost its compression plate,



Apart from the seat, this 1960 machine is the final form for the Matchless G3C

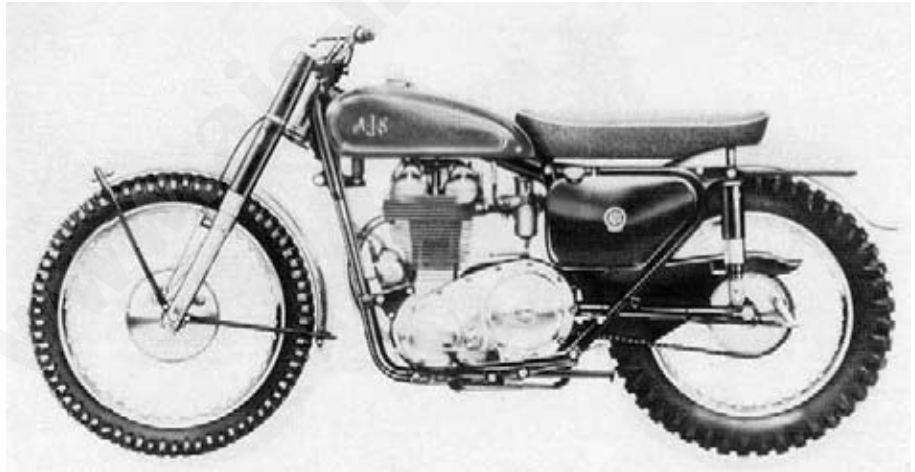


A 1961 G80 showing the cast alloy chaincase which replaced the pressed-steel type for the road models in 1958.

and the cylinder was lengthened a little to compensate.

All models changed to a new Burman B52 gearbox, which was more compact and had a ball-ramp clutch-lift mechanism. In other respects, the B52 was conventional,

as was its clutch, which had four or five friction plates as demanded by engine power and machine use. Due to the change of clutch mechanism, it was necessary to fit an adjuster screw in the centre of the pressure plate, and access to this was pro-



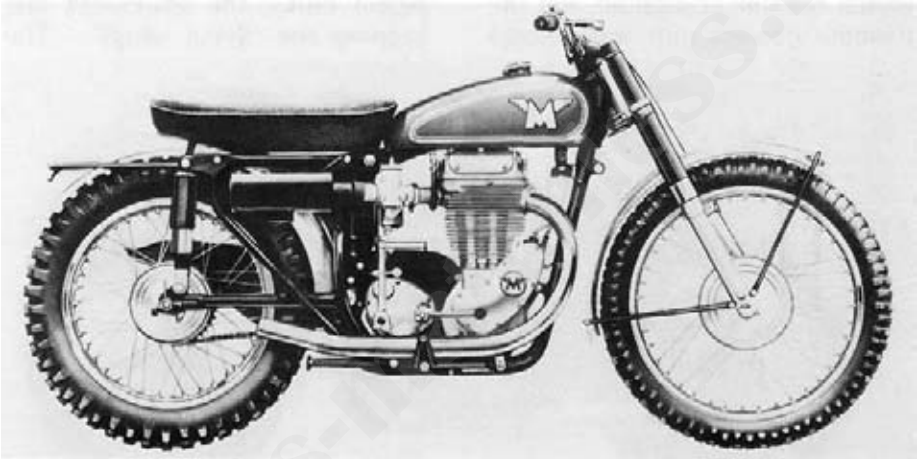
For scrambling in 1961, AJS offered this model 18CS, which took considerable strength to get the best from it.

vided by a small plate in the outer chaincase.

Other changes for 1952 included a light-alloy front brake backplate, a handlebar clamp with three bolts, and an underslung pilot lamp. This lamp was never of any use, except for parking, and was never popular with owners. It was only used because the new form of headlight was unable to accommodate a pilot bulb, but this problem did not remain for

was similar, except that the lining was in silver with a red pinstripe, and the alloy tank badge round with 'flying wings'.

Little was altered for 1953, although a dualseat appeared for all the sprung road models, and there were some detail changes, including a plastic rear lamp. The finish continued austere at home, but export machines made use of what nickel there was to revert to chrome-



The timing side of the 1961 Matchless G80CS with the oil tank on the left to allow space for the massive GP carburettor and air filter.

too long.

The 1952 finish was affected by the shortage of nickel at that time, which restricted the use of chrome-plating. In its place, AMC used what they called an Argenised finish, which gave a matt aluminium effect and was applied to the wheel rims and some other details. The painted parts remained in black, the AJS tanks being lined in gold and fitted with a new die-cast badge forming the marque name. The Matchless

plating for tanks and wheel rims.

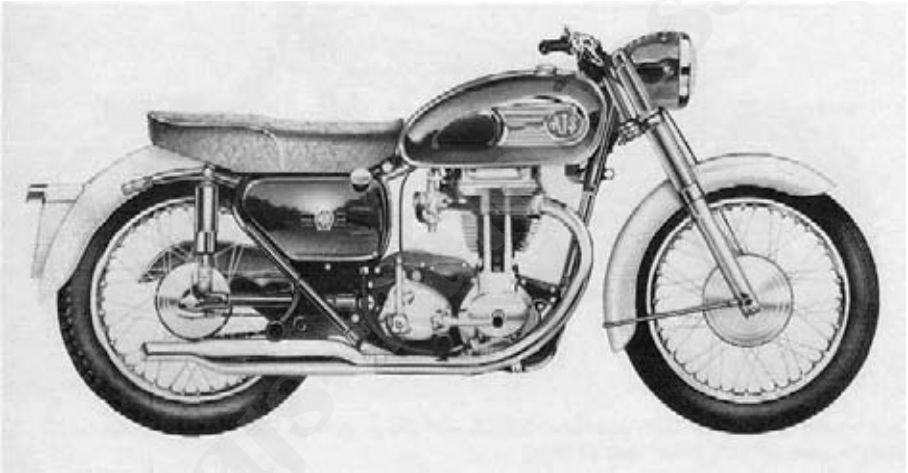
More happened in 1954, when all models were fitted with larger carburettors and the inlet ports were opened-up to suit. The sizes went up to 1-1/16 in. for all the 348 cc engines, and to 1-5/32 in. for the 497 cc ones. For the larger road models, there was a rotating magnet magneto, with an auto-advance mechanism built into the magneto sprocket, and a new timing cover with a bulge to clear this. The en-

gine was modified internally, the timing-side mainshaft being made a parallel press-fit in the flywheel.

For the cycle parts, there was a new full-width front hub with some cooling fins, but still with a 7 in. brake within. The underslung parking lamp was replaced by twin pilots, one on each side of the headlamp and equally ineffective. The access cover in the outer chaincase became a dome so that the whole clutch became accessible, and the dynamo control unit was moved

while that for the 497 cc sprung machines remained at 3.00 in. The petrol tank was fitted with a wing-nut filler cap.

The home-market finish remained as it had been for 1952, except that the wheel rims were chrome-plated once more, the road versions also having lined, painted centres. The new front hub was left in its natural finish and there were round plastic tank badges for the road model petrol tanks, the Matchless one keeping the 'flying wings'. The



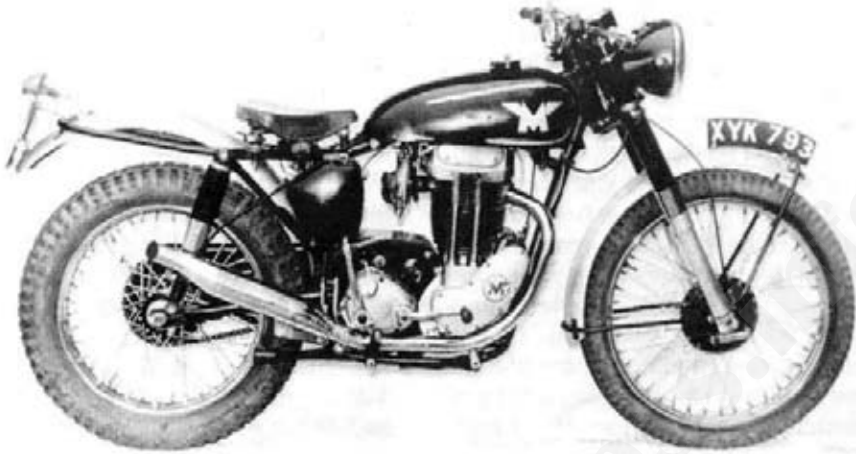
Little changed on the model 18 AJS for 1962, other than to the tank badges and the finish options.

under the seat. The road model mudguards were flared, and the petrol tank size for the 497 cc models was increased to $3\frac{3}{4}$ gallons.

On the competition side, the new front hub and clutch access dome were adopted, along with an all-welded frame front half for the rigid models and a dualseat for the sprungers. The front tyre sections went back to 2.75 in. for the trials models,

competition tanks reverted to transfers in gold for AJS and silver for Matchless, both looking extremely smart.

It was all change to the carburetors for 1955 with the introduction of the Monobloc type. The 348 cc road models were fitted with a 1-1/16 in. type 376, while the 497 cc road machines used a 1-5/32 in. type 389. The same sizes went on to the rigid

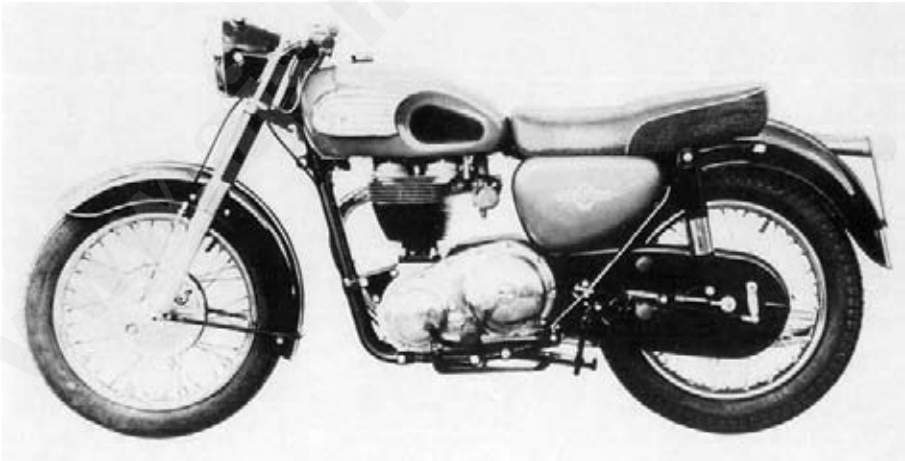


Matchless G3C for 1962 fitted with the optional lighting system that was still offered for the competition models.

competition models, but the sprung ones were fitted with TT carburetors of 1-1/16 in. and 1-3/16 in. sizes to the two engine capacities. The 348 cc road engine copied the larger version with a change to a rotating-

magnet magneto with auto-advance, so also required the same timing cover outer with the clearance bulge. There was a new silencer for all models.

On the cycle side, the full-width



Final year for the true AMC singles was 1963 when this model 18 had a more rounded shape to its toolbox and oil tank.

front hub was replaced by another with the cooling fins in a barrel profile. It was joined by a full-width hub at the rear, which was also in light-alloy, and this offered a quickly-detachable facility for the sprung-frame models. The diameter of the front forks was increased and the frame modified to provide a hole for the air filter hose, while pressed-steel pillion footrest lugs were added for the road springers. The headlamp shell was made deeper so that it could accommodate the speedometer as well as the ammeter and light switch. The $3\frac{3}{4}$ gallon petrol tank

went on to the 348 cc road models, and the finish for all was unaltered, except for leaving the rear hub in its natural finish.

This brought the AMC range to a watershed, for all the rigid models were dropped at the end of 1955. It was springers only from then on, plus new short-stroke engines for scrambles use. This was to signal the beginning of the separation between the two competition functions of trials and scrambles. In time, this would lead to the use of 348 cc engines only in the former, and 497 cc ones in the latter.

Revised engines

In all but one case, the models that continued kept their existing type code, regardless of any other changes. The exception was the 348 cc model built for trials use, which continued as the 16MC or G3LC despite a change to rear suspension. It was a situation that lent itself to confusion, but the 16MCS and G3LCS codings were applied to

the new scrambles models, hence the decision. The problem did not arise with the larger engine, as the 18C and G80C were dropped and only the scrambles model built in that capacity, not the trials one.

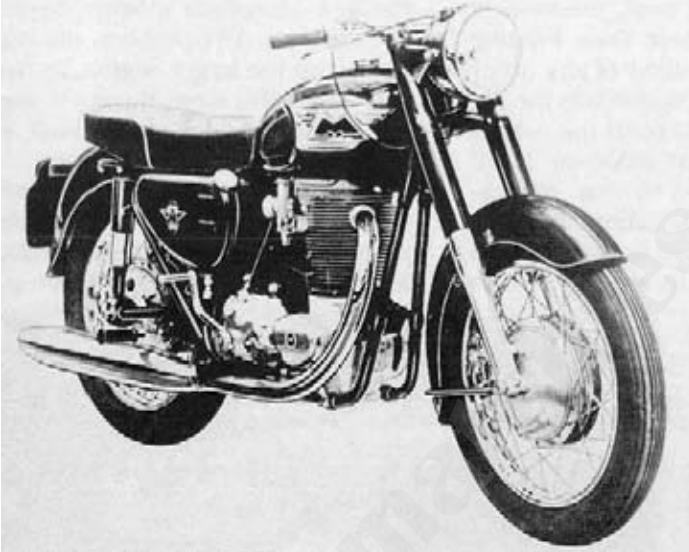
The road models continued with little alteration to the engine, other than increases in compression ratio and the addition of a magnetic oil



Lovely Matchless G80CS of 1963 which remained in the lists even though most riders had turned to two-strokes.

filter in the crankcase. The pushrod tubes were shortened so that they ran into the underside of the cylinder head, rather than higher up, and the head was altered to suit. The oil feed to the cylinder bore was dispensed with, and the magneto shield

they were, except that the front brake cam lever was moved to the top of the backplate. More noticeable was a new oil tank, which was long and thin to fit into the subframe corner on the right-hand side of the machine. It was matched on the left-



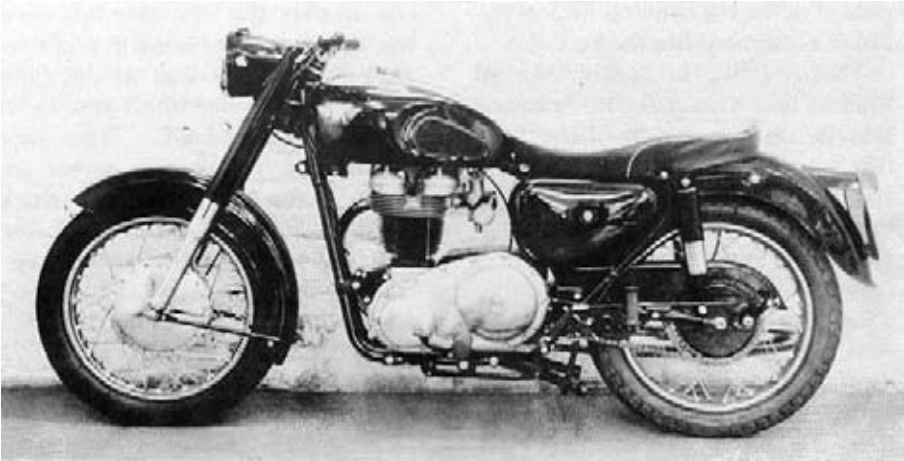
For 1964 the singles were fitted with Norton Roadholder front forks, and Norton hubs and brakes as on this G3.

no longer fitted.

The gearbox remained the Burman B52, and the primary chain-case the two-part pressed-steel assembly. The frame was altered mainly in respect of the seat tube. This became vertical and incorporated the rear fork pivot lug, but the rear loop and twin side rails remained much as before. The rear fork continued to pivot on a pin pressed into place, but the absence of the separate bridge made assembly and dismantling that much more awkward.

The forks and wheels stayed as

hand side by a combined toolbox and battery carrier with a front panel to join this to the oil tank. This cleaning up process was extended by the addition of a cover over the chain adjuster above the gearbox, and by grouping the controls and cables. The front mudguard was tidied-up by the deletion of the front stay, and the rear stay no longer doubled as a front stand, the centre stand being considered adequate for all needs. The finish stayed as before except for a small increase in the diameter of the AJS badge. The 348 cc trials model retained



Last year for the road singles was 1966 when this Matchless was built, still much as in its original image.

the all-alloy engine in a new frame with pivoted-fork rear suspension. Its wheelbase was reduced by mounting the fork pivot ahead of the seat tube. The frame itself was still built-up, as the others, although each part became a welded assembly. The machine continued with a saddle and was fitted with a single toolbox in the left-hand subframe corner.

The scrambles models were built in both engine capacities and had new short-stroke power units. The smaller had dimensions of 72 x 85.5 mm, and the larger 86 x 85.5 mm, so the stroke was common and the capacities remained at 348 and 497 cc. The engines were all-alloy and had the pushrod tunnels cast within the head and barrel. Inside went forged steel flywheels with the mainshafts simply pressed into place, while the big-end had a stronger crankpin and a single row of caged rollers. A roller race assisted the

bush on the timing side to support the crankshaft.

Both engines were fitted with a Monobloc carburettor, the smaller with a 376 of 1-1/16 in. bore, and the larger with a 1-3/16 in. type 389. Compression ratios were quite high at 9.9:1 and 8.7:1 respectively, and sports valve timing was used. The exhaust pipe carried a silencer, but an extension was available to replace it when racing.

The frame, forks and wheels were much as for the road models, and the machines were fitted with a dual-seat and sports mudguards. Full electrical equipment, including lights and horn, could be supplied and was more often fitted for the USA street scrambler or enduro market, where the combination of the scrambles specification with a degree of road equipment was desirable. A slim 2 gallon petrol tank was fitted, but the oil tank remained

as that of the trials machine and the finish continued unchanged.

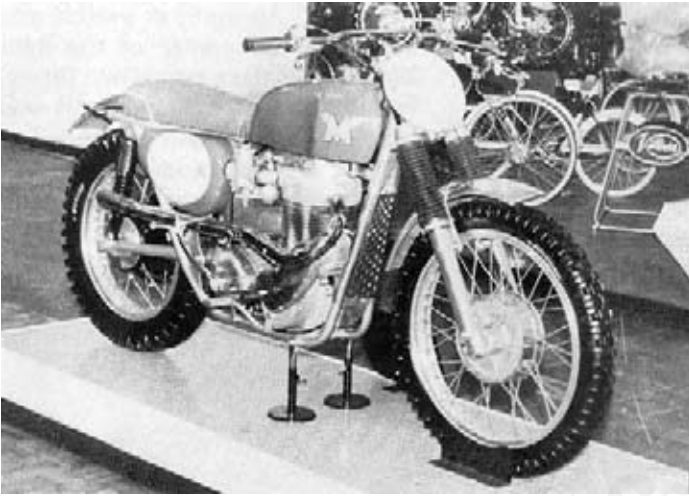
During 1956, the gearbox for all models was changed to one based heavily on the design of the type fitted to Norton machines. The reason behind this was partly the take-over of Norton by AMC back in 1953, but also a standardisation programme, which was to enable the one gearbox to be fitted to all AMC and Norton models of 350 cc or more. The new design became known as the AMC box, but essentially it was based on one first built by Sturmev-Archer in the early 1930s. This design had been taken over by Norton in 1935 and built for them by Burman, with an improvement in the gear pedal position appearing in 1949 to suit the Norton twin.

For the AMC group and the Nor-

ton models, the box internals were left as they were, but the positive-stop mechanism was made more compact, and the clutch and its lift mechanism revised. The new mechanism required a screw adjuster in the pressure plate, which meant a simple pushrod to lift it in place of the split rod with mushroom end of the past that had done so much to lift the Norton clutch squarely and assist in clean gear changes. The new clutch centre included a shock absorber, so the face-cam device on the crankshaft was no longer needed. With its removal, the clearance dome in the outer chaincase was reduced in size. The new gearbox continued on the 1957 models, all of which had their rear suspension 'jampots' changed to Girling units. AMC had finally admitted that someone else



The Matchless G80CS for 1966 and still available with lights for use in trail riding and enduros.



The Matchless scrambler became the G85CS in 1966 with cycle parts very similar to those of the successful Rickman brothers.

knew better on the subject, but even then did not fit stock items. Their Girling units might have had standard mounting eyes at the top, but the lower fixings continued as the clevises of old.

All models had styling ribs added to their oil tanks and toolbox lids, and the road models were given an option of separate chrome-plated side panels for the petrol tank. Except for this, their finish continued in black with gold or silver lining but the wheel rims were chrome-plated only, except for export Matchless models, which had red centres.

On the competition side, the 348 cc scrambles models were fitted with a larger 1-1/8 in. type 389 Monobloc and the long thin oil tank with ribs. This also went on the 497 cc model. The finish of both trials and scrambles machines was unaltered.

The basic scrambles machines led to other, more specialised, models built mainly for the USA.

Some were for flat-track events, so they had a rigid frame, light forks and no front brake, while the power came from the all-alloy, short-stroke scrambles engine with raised compression ratio, central plug and Grand Prix carburettor. Along with this were larger-capacity scrambles models with the engines stretched to 89 x 96 mm and 597 cc. Normally, these were built in the CS mode without any road equipment, but the engine was also used in some flat-track machines.

There were significant changes to the road models for 1958, as they turned to alternator electrics and coil ignition. Thus, the dynamo and its drive were dropped along with the pressed-steel primary chaincase. In their place came a Lucas RM15 alternator, which went on the left-hand end of the crankshaft with the stator located in the outer half of the chaincase. The two halves of the chaincase were cast in light-alloy

and held together by a row of small screws. An access plug went on the clutch centre-line to enable adjustments to be made, and a second plug acted as a filler hole and a means of checking chain tension. On the timing side, the engine

reflector. An ignition switch was added to the centre of the light switch to make a combined fitting, but the layout of the controls was unaltered. The finish continued as before, but all models now had chrome-plated wheel rims. The



The Rickman Matchless powered Metisse in 1962 when it was already the dominant force in large capacity scramble events.

line was completely altered, as the magneto was dispensed with, along with its drive, so the timing chest was much reduced in size. Within it went the two cams, as of old, with the inlet camshaft driving the ignition cam and its auto-advance mechanism. The points plate was mounted on the small inner timing cover and concealed by a polished outer. The ignition coil went up under the tank, and the alternator rectifier was mounted under the dual seat.

The road machines did away with the twin pilot lights for 1958, so the pilot bulb went into the headlamp

option of the chrome-plated tank panels remained available and was joined, for that one year only, by another with the panels painted. The colours offered were gold for AJS and off-white for Matchless, the plastic beading used round the edge being in blue or red respectively. These bead colours were also used with the chrome-plated panels.

Little altered for the competition models for 1958, but they were given the option of a 3 gallon petrol tank. The scrambles machines had a new dual seat, wider mudguards and an oil tank that was set in more, but otherwise continued as standard

with the same finish. They also had the option of a colour finish for the petrol tank, oil tank and toolbox - blue for AJS and red for Matchless. For the trials machine, the option only applied to the petrol tank and was in the same colours.

All models were given new codes for 1959, as the letter 'S' was dropped from them, being superfluous when all had rear suspension. This made the road models the 16 or G3, and 18 or G80, but the only change was to deeper mudguards, the front one carrying the number plate on its sides.

The changes to the finish were more complex, although the basic standard scheme in black remained as it had been for many years. The options began with the chrome-plated tank panels and continued with a colour option for the petrol tank, oil tank, mudguards and toolbox. This was in blue for AJS and Arctic white for Matchless, and included the chrome-plated tank panels, which mounted on blue or black beading. A further option provided a two-tone tank finish, and in this case a plated embellishing strip went between the colours. For AJS the tank top was blue and the lower portion in light grey, while the

Matchless top was Arctic white and the lower part in red.

The trials models became the 16C and G3C with changes to a smaller subframe, long inclined Girling rear units, and a two-part rear fork. This had the pivot pin brazed into the right-hand leg, while the left leg was held in place by a cotter pin. Not something to inspire too much confidence, although it seemed to work well enough in practice. Both brakes went down in size to 5½ in. and worked in light, offset hubs. A cylindrical toolbox was fitted on top of the rear engine mounting plates, and the finish continued in black with gold or silver lining, plus the option in blue or red as before.

The codes for the scrambles models became 16CS and G3CS for the smaller model, and 18CS and G80CS for the larger. Otherwise, they ran on as they were, with just a change to the option colour for the Matchless oil tank and toolbox from red to white. At the end of the year, and the decade, the smaller scrambles model was dropped, so the competition side split firmly into 348 cc for trials and 497 cc for scrambles. For the road machines, it was time for a new frame.

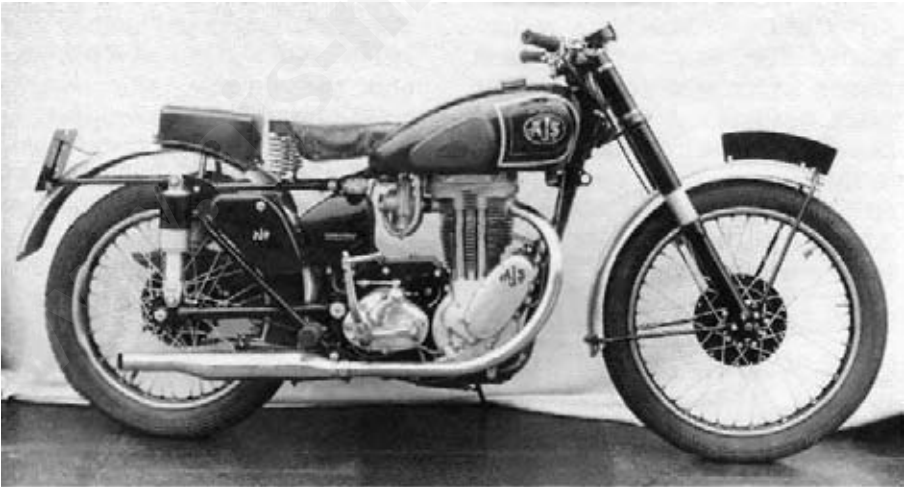
Duplex frame

All, except the trials models, changed to a new frame with duplex downtubes for 1960. This retained the separate rear loop and continued with the special Girling units with clevis lower ends, but the downtubes ran back under the engine to the seat tube, so there were no separate rails.

The engines continued as they were, but the cycle parts for the road models included a new 4¼ gallon petrol tank, two-level dual seat and shallower headlamp shell. The road model colours were as for 1959, including the options, with an additional one of the two-tone petrol

tank alone, the other items remaining in black.

The 497 cc scrambles models had their oil tank moved over to the left-hand side of the machine to make room for a 1-3/8 in. Grand Prix carburettor and its air filter. They retained the magneto for ignition, but had the option of an alternator to power the lighting system when this was fitted. Whether this was so or not, the cast light-alloy chaincase was fitted and the battery, when called for, was mounted below the air filter. The machine could be supplied with a 1-3/16 in. Monobloc in place of the GP and its air filter, in



The 16MS as prepared for the 1951 Clubmans TT with alloy engine and TT carburettor but no match for the winning BSA Gold Star.



Gordon Jackson in the Perce Simon trial of November 1960 under the eyes of Neville Goss in trilby, Bob Snelling and Ralph Venables.

which case the cams were changed to suit. The cylindrical toolbox could be fitted if required and the finish was as in 1959.

Little was altered for 1961, as the world was moving on while AMC stood still. The accent was on performance, the learner market then being restricted to 250 cc, but turning to 650 cc, or larger, twins as soon as possible. Customers for staid road singles became fewer, while the competition future lay with two-strokes, for they were simply so much easier for the average rider to come to terms with. Experts might have done wonders in trials and scrambles on four-strokes - Sammy

Miller and Jeff Smith on Ariel and BSA machines being prime examples - but few could emulate them.

So, AMC fitted shorter mudguards and larger tank badges on their road models for 1961. They added a marquee badge to the outer timing cover and reversed the option colours. Thus, the single colour was grey for AJS and red for Matchless, while the two-tone tanks were grey top and blue lower or red and white respectively. For the competition machines, there were no changes to specification or finish.

There were changes to the 348 cc road models for 1962, as the old long-stroke engine was finally re-



Artie Ratcliffe winning the Cotswold Cups trial in March 1950 with his Matchless G3LC works machine.

placed by one with dimensions of 74 x 81 mm, but the capacity still worked out at 348 cc. The revised engine had the pushrod tunnel cast into the cylinder, as on the scrambles motors, but the barrel material remained as cast-iron. The carburettor was increased in size to a 1-1/8 in. type 389 Monobloc, and the valves followed suit.

A sports version of the new 348 cc model was also offered by both marques, being listed as the 16S or G3S. For this, little was altered, other than the handlebars, which were inverted, and the mudguards and chainguard, which were chrome-plated.

Other changes common to both sizes of road model were a key for the ignition switch and a roll-on centre stand. The tank badges became much larger and were die-cast in zinc alloy. Due to their size, they became known as 'knee-knockers', a name that has survived to today.

The 1962 road model finish was still in black, but the option was for all painted parts to be coloured, with mudguards in white and the rest in blue for AJS, and Tartan red for Matchless. This attempt to jazz up the old-stagers was taken further by giving them, and all the others in the range, model names. Thus, the 16 became the Sceptre, and the G3 the Mercury, while the 16S and G3S had 'Sports' tagged on their names. The larger road models were listed as the 18, or Statesman, and G80, or Major.

There were no changes to the competition models, and their fin-

ish options were reduced to petrol tank colour alternatives in blue for AJS and red for Matchless. They did not escape the move to model names, however, so the 16C became the Experts, and the G3C the Maestro. For the scrambles machines, the names were Southerner for the 18CS, Marksman for the G80CS, and Typhoon for the G80TCS, this last being the 597 cc single built for the USA.

In practice, no-one seemed to use the model names, and owners certainly continued to refer to their machines by the old model codes.

The sports 350 did not run on for 1963, but the other models did, and all were fitted with standard Girling rear units. The road machines were given a more rounded shape to their oil tank and toolbox, went to 18 in. wheels, and were fitted with a narrower dual seat. A full rear chaincase option was listed for them, the mudguards became of D-section, the silencer lost its tailpipe, and the petrol tank was recessed on each side for the kneegrips, so its capacity went down to 4 gallons.

The road models and the scramblers changed to a new front hub, which turned on stock ball races, rather than the taper rollers of the past. The new hub had fewer cooling fins and its brake was the same diameter as before, but it accepted wider shoes and linings. The tyres for the road machines became 3.25 x 18 in. front and rear for the 348 cc, and the same front with a 3.50 x 18 in. rear for the 497 cc ones. The trials models stayed as they were,



The 1956 ISDT Matchless machines on show at Earls Court later that year, complete with German mud!

as did the general finish. The road machines were given a double zig-zag line on the petrol tank shoulder, and the option colours applied to the petrol tank, oil tank and toolbox only. The competition models lost all their finish options, so were only to be had in the standard black.

There were considerably more changes to the road models for 1964, as the effects of using standard parts became more pronounced. On the cycle side, this entailed the fitment of Norton Roadholder front forks and Norton hubs front and rear. Both hubs were full-width, light-alloy types with single-leading-shoe

brakes but, while the rear continued at its old 7 in. size, the front grew to a more useful 8 in.

The engines were changed to the dimensions first used by the 1956 scrambles motors, so the smaller had a 72 mm bore, the larger an 86 mm bore, and both an 85.5 mm stroke. They copied the old design in having the pushrod tunnel integral with the cylinder, but kept this in cast-iron, along with a light-alloy head. The bottom half was as used in the scrambles engines, with steel flywheels, a single-row, caged-roller big-end, and roller bearing plus plain bush to support the timing-side

mainshaft.

The lubrication system was altered to a Norton duplex gear pump with a direct feed into the crankshaft end, driven by a worm nut on the crankshaft. On the other end of the crankshaft, the alternator was changed to an RM19 type, and the carburettor for the 497 cc engine became the same size as that of the 348 cc one at 1-1/8 in. All models went over to a magnetic speedometer, and the finish was the same as in 1963, the AJS optional colour being Polychromatic blue.

For the 1964 trials models, there was a change to the same engine dimensions as the road 348 cc machines. To suit the intended use, they were fitted with the lined, light-alloy barrel, but no longer had a dynamo listed, even as an option. On the outside, there were shorter Girling rear units and a small pad with fibreglass base as a seat, in place of the saddle. The finish was unaltered. The scrambles singles

kept the AMC forks and wheels as of old, but the engines were fitted with the Norton oil pump. Their finish was as in 1963.

Little was altered for 1965, but the trials model was dropped, for it was totally out of place in the sea of two-strokes that now dominated the sport. For the road models, there was a small diamond-shaped tank badge for AJS, and a smaller 'M' badge for Matchless. The same machines were also offered as the Norton models 50 and ES2, with a change of tank badge, and this did nothing to endear them to any of the marque enthusiasts. There was no change to the standard finish, but the options were no longer listed. The scrambles models continued unchanged.

For 1966, the road singles ran on as they were, but late in the year their production came to an end. Thus ended some two decades of post-war production of models that were, at one time, the backbone of



A G85CS fitted with an AJS tank for Peter Gaunt to ride in the 1966 ISDT in which he won a gold medal.

the industry. Quiet, reliable work-horses, without much style or glamour, but essential for their tasks for much of that time.

Despite the problems, the competition side produced a new model, the Matchless G85CS, which alone had no AJS equivalent. It continued with the 497 cc scrambles engine fitted with a 1-3/8 in. Grand Prix carburettor. This, and the gearbox, were installed in a new, all-welded duplex frame. The forks remained AMC, as did the hubs, the front one having the fins machined off and housing the usual 7 in. front brake. At the rear, the hub was still an AMC item, but from the overhead-camshaft racing models and, thus, of conical form with an 8¼ in. drum. The rear wheel diameter went down to 18 in., but the tyre sections stayed as they were. A central oil tank was fitted, and the finish was silver for

the frame with polished light-alloy mudguards and a red petrol tank.

The G85CS stayed in production up to 1969 and was altered for 1967 by a change to a 932 Concentric carburettor. During this period, the G80CS was made available in the USA as a roadster or street scrambler with lights and a silencer. Few were built, and they were more a means of reducing the spares holding than a serious attempt at providing an additional model in the lists.

At the close of this period, the AMC singles line came to an end. A rather sad finale for machines that had played such an important part in the history of the industry, but they were revived again in the 1980s as interest in classic machines grew apace. Owners and riders once again enjoyed the fine finish and easy riding bestowed by the big flywheels and tall gearing.

Singles in competition

AJS and Matchless OHV singles played little or no part in the road racing scene, as that was left to their overhead-camshaft cousins. Elsewhere, especially in the trials world, it was a very different picture up to the early 1960s, for they had many successes in both one-day trials and the Scottish Six Days. In this last, they took the premier award no less than ten times in the 15 events run from 1947 to 1961.

Hugh Viney was their trials maestro in the early days, winning the first three post-war events and again in 1953. All these successes were on AJS machines, while Artie Ratcliffe used a Matchless to win in 1950 and 1954. Then Gordon Jackson took over and finished first in 1956, 1958, 1960 and 1961, the last being the historic occasion when he dropped only one mark during the entire week.

In the scrambles field, early works riders were Geoff Ward for AJS and

Brian Stonebridge for Matchless, both having many successes. In Europe, Auguste Mingels won the scrambles championship in 1953 using a Matchless for most events and, later in the 1950s, Dave Curtis rode the same make to many wins.

During the 1960s, the big scrambler continued, but was also used as an enduro machine with lights and road equipment added. The final version, the G85CS, was very similar to the Rickman Metisse, and AMC were also to supply Rickman with engines.

At club level, the AMC competition models played their part for many years. In addition, during the early post-war years, the ex-WD G3L was often recruited for grass track or scrambles events, where it ran well enough, usually with the benefit of alcohol fuel to keep the all-iron engine cool.

AJS & Matchless Specifications

All models had a single cylinder, overhead valves, four-speed gearbox, telescopic front forks and, where fitted, a six volt electric system.

AJS model	16M	18	16MC	18C	16MCS	18CS
Matchless	G3L	G80	G3LC	G80C	G3LCS	G80CS
years	1945-55	1945-55	1946-55	1946-55	1951-55	1951-55
bore mm	69	82.5	69	82.5	69	82.5
stroke mm	93	93	93	93	93	93
capacity cc	348	497	348	497	348	497
comp. ratio	6.35 ¹	6.0 ²	6.30	6.0	6.3 ³	6.0 ⁴
carb type	76 ⁵	89 ⁶	76 ⁵	89 ⁶	76 ⁷	89 ⁷
carb size	1 ⁸	1-3/32 ⁹	1 ⁸	1-3/32 ⁹	1 ⁸	1-3/32 ¹⁰
ignition by	mag	mag	mag	mag	mag	mag
top gear	5.93	5.00	6.18 ¹¹	5.53 ¹²	6.56	5.83
petrol - gall	3 ¹³	3 ¹⁴	3 ¹⁵	3 ¹⁵	2.25	2.25
frame type	rigid	rigid	rigid	rigid	s/a	s/a
front tyre	3.25x19	3.25x19	2.75x21 ¹⁶	2.75x21 ¹⁶	3.00x21	3.00x21
rear tyre	3.25x19	3.50x19	4.00x19	4.00x19	4.00x19	4.00x19
front brake dia	6.5 ¹⁷	6.5 ¹⁷	6.5 ¹⁷	6.5 ¹⁷	7	7
rear brake dia	6.5 ¹⁷	6.5 ¹⁷	6.5 ¹⁷	6.5 ¹⁷	7	7
wheelbase in.	54	54	53	53	55.2	55.2

¹- 1953-6.53

⁴- 1954-8.5

⁷- 1955-TT

¹⁰- 1954-1-5/32, 1955-1-3/16

¹³- 1955-3.75

¹⁶- 1948-3.00x21, 1954-2.75x21

²- 1953-6.3

⁵- 1955-376

⁸- 1954-1-1/16

¹¹- 1948-6.56

¹⁴- 1954-3.75

³- 1954-9.4

⁶- 1955-389

⁹- 1954- 1-5/32

¹²- 1948-5.83

¹⁵- 1950-2.25

¹⁷- 1948 on-7

AJS & Matchless Specifications

AJS model	16MS ¹	16 ²	16	18S ³	18	16MCS ⁴
Matchless	G3LS ¹	G3 ²	G3	G80S ³	G80	G3LCS ⁴
years	1949-61	1962-63	1964-66	1949-63	1964-66	1956-59
bore mm	69	74	72	82.5	86	72
stroke mm	93	81	85.5	93	85.5	85.5
capacity cc	348	348	348	497	497	348
comp. ratio	6.35 ⁵	8.5	9.0	6.0 ⁶	7.3	9.9
carb type	76 ⁷	389	389	89 ⁸	389	376 ⁹
carb size	1 ¹⁰	1-1/8	1-1/8	1-3/32 ¹¹	1-1/8	1-1/16 ¹²
ignition by	mag ¹³	coil	coil	mag ¹³	coil	mag
top gear	5.83 ¹⁴	5.80	5.51	5.00 ¹⁵	4.79	6.56 ¹⁶
petrol - gall	3 ¹⁷	4.25 ¹⁸	4	3 ¹⁹	4	2
frame type	s/a	s/a	s/a	s/a	s/a	s/a
front tyre	3.25x19	3.25x19 ²⁰	3.25x18	3.25x19 ²⁰	3.25x18	3.00x21
rear tyre	3.25x19	3.25x19 ²⁰	3.25x18	3.50x19 ²¹	3.50x18	4.00x19
front brake dia	7	7	8	7	8	7
rear brake dia	7	7	7	7	7	7
wheelbase in.	55.2	55.2	55	55.2	55	55.2

¹- 1959-16 & G3

⁴- 1959-16S & G3CS

⁷- 1955-376

¹⁰- 1954- 1-1/16

¹³- 1958-coil

¹⁶- 1957-6.48

¹⁹- 1954-3.75, 1960-4.25, 1963-4

²- 1962, also 16S & G3S

⁵- 1953-6.53, 1956-7.5

⁸- 1955-389

¹¹- 1954- 1-5/32

¹⁴- 1957-5.80

¹⁷- 1955-3.75, 1960-4.25

²⁰- 1963-3.25x18

³- 1959-18 & G80

⁶- 1953-6.3, 1956-7.3

⁹- 1957-389

¹²- 1957- 1-1/8

¹⁵- 1957-5.01, 1963-4.79

¹⁸- 1963-4

²¹- 1963-3.50x18

AJS & Matchless Specifications

AJS model	16MC	16C	16C	18CS	
Matchless	G3LC	G3C	G3C	G80CS	G85CS
years	1956-58	1959-63	1964	1956-65	1966-69
bore mm	69	69	72	86	86
stroke mm	93	93	85.5	85.5	85.5
capacity cc	348	348	348	497	497
comp. ratio	6.5	6.5	6.5	8.7	12.0
carb type	376	376	376	389 ¹	GP ²
carb size	1-1/16	1-1/16	1-1/16	1-3/16 ³	1-3/8 ⁴
ignition by	mag	mag	mag	mag	mag
top gear	6.56 ⁵	6.48	6.48	5.83 ⁶	7.46
petrol - gall	2	2	2	2	2
frame type	s/a	s/a	s/a	s/a	s/a
front tyre	2.75x21	2.75x21	2.75x21	3.00x21	3.00x21
rear tyre	4.00x19	4.00x19	4.00x19	4.00x19	4.00x18
front brake dia	7	5.5	5.5	7	7
rear brake dia	7	5.5	5.5	7	8.25
wheelbase in.	54	52.2	52.2	55.2	56.9

¹- 1960-GP or 389

²- 1967-932

³- 1960-1-3/8 or 1-3/16

⁴- 1967-32mm

⁵- 1957-6.48

⁶- 1957-6.12, 1959-5.80