

# SORTING OUT... CAMMY AJAYS

with Phil Heath



The "Cammy Ajay" as the well known chain driven overhead camshaft AJS machines are affectionately called started life like the International Norton, the KTT Velocette and the Excelsior Manxman - as works racing machines for the T.T.

But the production Ajay never had quite the same aura as those other famous ohc machines. Possibly because they had far less a following amongst the private owner racing fraternity, although they were always available in full racing trim.

The first ohc AJS to see the light of day was probably UK 3051, which Jimmy Simpson tested at Brooklands in April 1927. This was in preparation for that year's TT because Ajays, like Nortons, decided to replace their long established - and successful - pushrod ohv jobs, with

a new racer having an overhead camshaft motor. Both 350 and 500 bikes were built and the riders besides Simpson were Rowley, Gough and Parkinson.

They had quite a lot of trouble in practice, mainly lubrication, but Jimmy Simpson put up the fastest practice lap at 66 mph and finished 3rd in the Junior race. He dropped out of the Senior on the 4th lap while lying third. George Rowley finished 9th. However, although the TT debut was not a howling success, they did have several continental successes in that year.

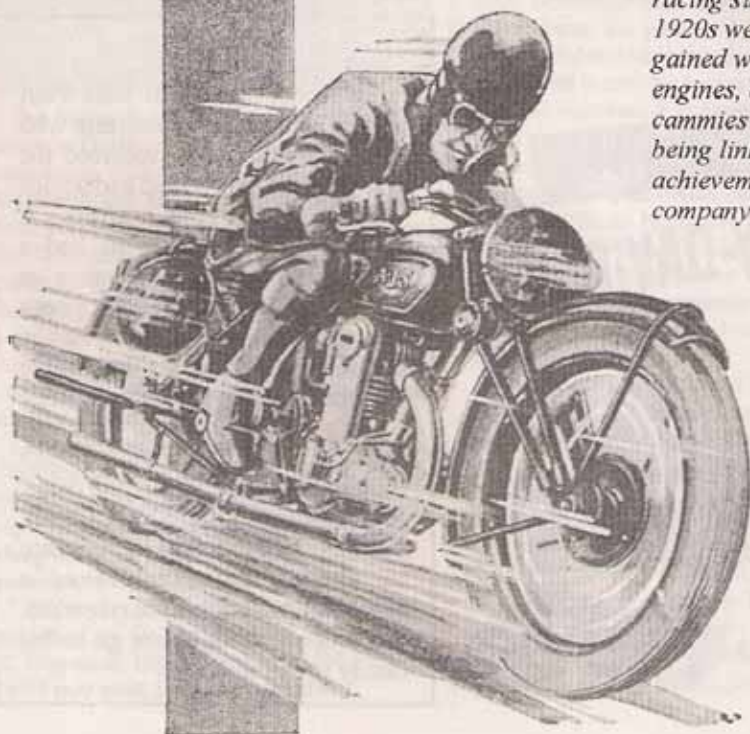
## *Both 350 and 500 ohc models in the 1928 range*

When the 1928 production range was announced in the October of 1927 it included both 350 and 500 ohc models. Like all AJS productions of the time they were given model numbers, 7 for the 350 and 10 for the bigger bike; each in turn carried the 1928 year code letter K in front of the numeral. It should however be noted that the company had used model numbers 7 and 10 before, for special racing versions of the 1927 pushrod motors.

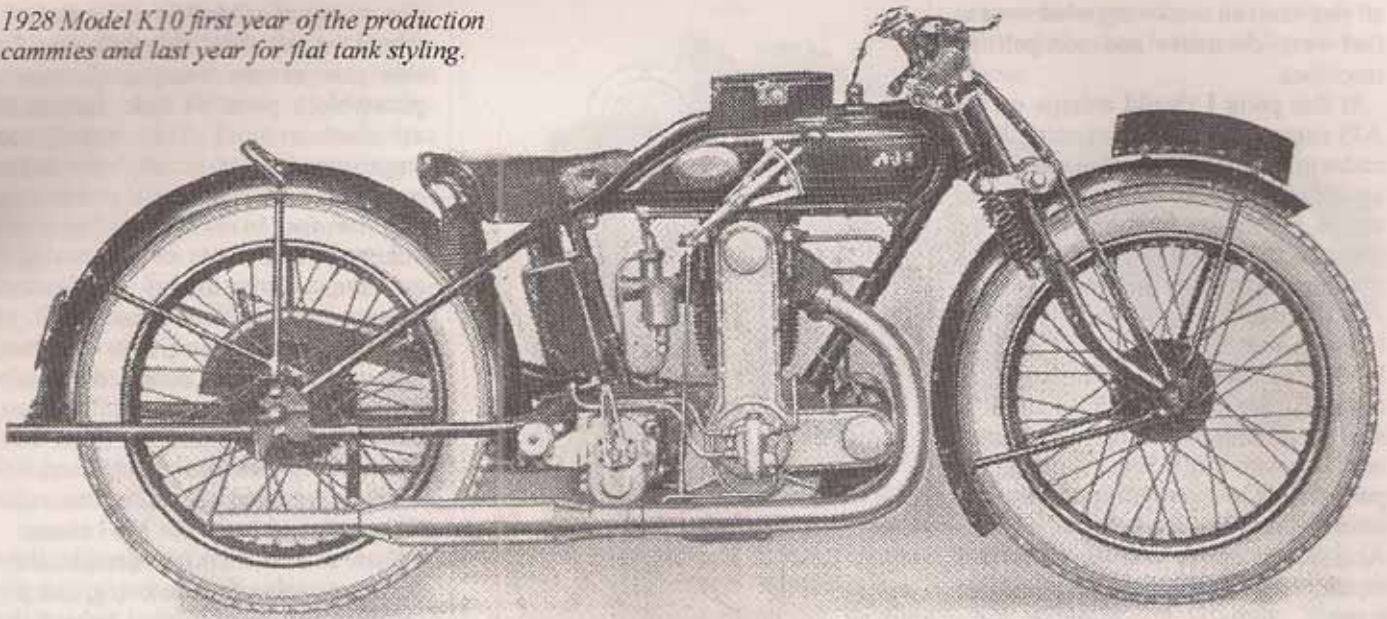
The production cammy K7 and K10 closely followed the TT bikes although some improvements were made to the cylinder head and port design. The chain driven overhead camshaft arrangement is so well known it hardly needs my description. With the Weller steel tensioner blade, it remained a feature throughout the life of the models, as did the vernier arrangement for fitting the drive sprockets to both camshaft and magneto - a great facility when it came to the task of timing.

Like the rest of the AJS range, the magneto was out at the front of the

*The wonderful run of racing successes in the 1920s were principally gained with ohv engines, but the cammies were soon being linked to these achievements in the company's advertising.*



1928 Model K10 first year of the production cammies and last year for flat tank styling.



engine, but lubrication was dry sump - a first for AJS. The gearbox had close ratios, but no kickstart was fitted. Fuel tanks for 1928 were still "between the tubes", it was another year before AJS caught up with the saddle tank fashion, but there was a tank top tummy rest cum toolbox on the cammys.

For the TT in '28 the works reverted to pushrod power, although the ohc bikes again did well on the continent; Wal Handley winning both the Belgian and Austrian 350 GPs, with George Rowley 1st in the Austrian 500.

For 1929 all the range went over to saddle tanks, with the cammies retaining a toolbox on the tank top; coloured tank panels were adopted (in magenta) for this year only, as if to underline this styling change from the traditional AJS lines and all-black colour. The year code letter became M, hence M7(350) and M10 (500) were now the designations. Another major change was to be seen in the front forks, where the old twin side spring Druid design now gave way to a single centre spring type. Narrow racing type mudguards and lighter pattern hubs, the rear without the q.d. feature on the rest of the range, graced the M7 and M10.

It was back to the cammy motors for the '29

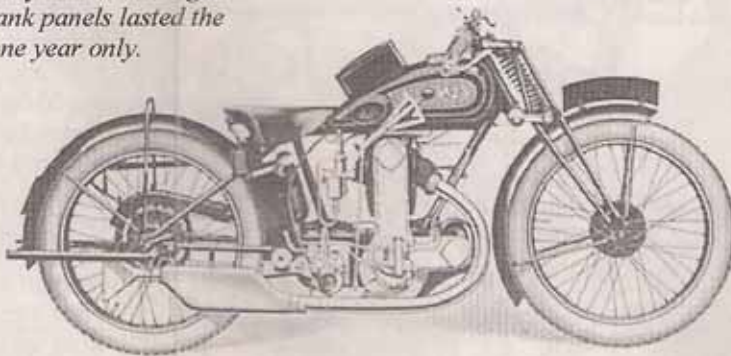
TT, the works engines having extra ribbing to the crankcase and an extra oil pump at the back of the cambox for scavenging. In the Junior race Wal Handley finished 2nd to Freddie Hicks (Velocette); another Velo ridden by Alec Bennett coming 3rd. But in the Senior, Handley crashed on Lap 1 and the only Ajay finisher was Frank Longman, way down in 16th place.

Considerable changes were wrought to the cammys when the 1930 range was announced. The frame became a three-stay affair, the additional third stay running from the rear wheel fork end to the bottom of the engine plate. A Sturmey-Archer gearbox replaced the maker's own box; close ratio again, without kickstart and still having hand change. Dimensions of the 500 motor

were amended, now at 79mm x 101mm bore and stroke, rather than the 84mm x 90mm of before. At 74mm x 81mm, dimensions of the 350 were unchanged. Breathing in both cases was through a two-jet carb and sparks came from a racing Lucas magneto, both features that were also continued unchanged. Braking was revised, with a massive 9" drum on the rear wheel, a 7" stopper up front. The R7 and R10 models were listed as racing machines and came with straight through exhaust pipes; stated to weigh 290 lbs and 316 lbs respectively, they were priced at £77 for the 350 and £85 for the 500.

For some reason Ajays didn't list or mention either R7 or R10 in their sales catalogue, nor will you find any reference to them in the descriptions of the 1930 range which were printed in "The Motor Cycle" and "Motor Cycling" during the autumn of 1929. All that AJS did was to publish a small leaflet specifically for these two models, detailing the features of each. Actually, this wasn't the first time they had done such a thing, back in 1927 the H7 and H10 pushrod racing models were treated to a similarly exclusive leaflet. One wonders why this was, it would appear that they weren't

1929 and a complete restyle, but the magenta tank panels lasted the one year only.



The A.J.S. 3.49 h.p. Overhead Camshaft Machine, Model M 7. Price £62 : 0 : 0

all that keen on marketing what were in fact very desirable and competitive machines.

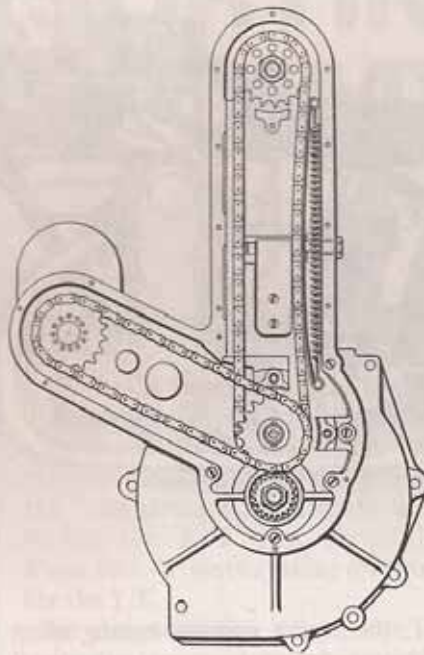
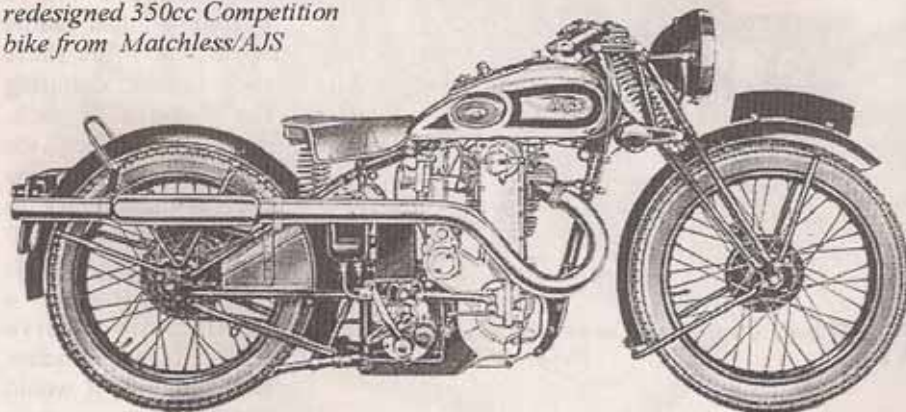
At this point I should enlarge on the AJS company's manner of using letter codes to denote the year of manufacture, as already mentioned earlier in this article. For 1930 they decided upon the letter R, thus the 350 camshaft model (retaining its model number 7, year on year) naturally became the Model R7; likewise the 500 was tagged as R10. Fine at the time but, as folklore now tends to have it, that magical letter R is said to stand for "Racing" - it doesn't and it never did!! What's more, the perpetrators of the myth compound the error by referring to any 500 cammy Ajay of whatever year as an R10. I repeat, only the 1930 models were so termed.

In later years, when the AJS marque had fallen under the control of the AMC combine, the letter R was used to indicate series racing models, but I'll come to that matter as we go along. As far as the Wolverhampton AJS models are concerned then, 1930 was the R model year.

The works Ajays in 1930 didn't have much luck, being outpaced by Ridges and Nortons, but mention should be made here of the 250cc ohc AJS on which Jimmy Guthrie won the Lightweight TT that year. This was a "one off" effort and the 250s weren't to be raced again. Nor was a production model introduced; I believe that two or three works machines were built and one of these achieved fame on the southern Grass Tracks later on.

When introducing the 1931 programme, again there was no mention of the camshaft models in the main catalogue, but a leaflet was issued, exactly as in the previous year, this time

*Model 33-7 "Trophy" the redesigned 350cc Competition bike from Matchless/AJS*



*Collier Brothers revamped the cammy Ajays, but retained the chain driven overhead camshaft, placing the magneto drive to the rear of the cylinder. The patents under which this well known AJS feature was made were held by John Weller, MIAE, of Great Bookham in Surrey and utilised a flat spring blade tensioning device pressing against the slack run of the chain. It was first fitted to A.C. racing car engines in the early 1920s and remained an integral part of AJS/Matchless camshaft designs through to the G50 Matchless racers of 1958-63 and the Seeley machines which came after them.*

describing the Models S7 and S10. About the only detectable difference for this new season being a chromium plated/black panelled tank, instead of all-black enamel. This wasn't too surprising as events quickly unfolded to reveal a number of financial problems at A.J. Stevens (1914) Ltd, leading to the voluntary liquidation of the company and the acquisition of the famous marque by Matchless motor cycles in November 1931. The Collier Brothers, who were Matchless, soon had the main range AJS models back into production, but not so with the cammies and there was to be a gap before both 350 and 500 versions appeared again, this time as the "Trophy" models for the 1933 season.

These were entirely new designs, their most noticeable feature being that the magneto was now located behind the cylinder barrel. However, just to

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***Entirely new designs for 1933, but watch out - there was still some old stock about***

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confuse historians, some of the old type machines with forward mounted mags were put on the market at the same time and sold by the multi-outlet retail business of Gray's. As far as I know these were the only "new" machines ever offered by Gray's, who specialised in secondhand bikes. For the record, Gray's advert ran thus - "Brand new (S7) Special 3.48 h.p. o.h. camshaft AJS.s, run-in and supertuned by famous AJS expert, hand made polished engine, 14 mm plug, TT head, special oiling, chain oiler, racing gearbox, racing saddle, down draught Binks, racing twistgrip, TT mudguards, ribbed front tyre, racing Lucas magneto, big bore chromium exhaust, 85-90 mph guaranteed; 45 guineas, exchanges, deferred terms (18 months). Limited number only, unobtainable elsewhere; on view at - ..."

These must have been built from what was left over at Wolverhampton, using parts intended for an updated S7. They were quite a bike - I know, because I bought one. They were sold without a guarantee and Matchless didn't really want to know anything about them. Unfortunately, I did have two recurring spots of trouble with mine and swapped

it the following year, at Gray's, for a 500 TT OK Supreme. What happened, once or twice, was that the drive arrangement for the cambox scavenger pump, situated on the top of the camshaft drive cover, became displaced resulting in loss of drive and therefore no return of oil from the cambox. Soon everything was covered in oil! The other trouble was with exhaust valves which kept getting bent or warped for no apparent reason - perhaps they were using up a batch of valves made of the wrong material?

The new "Trophy" models were introduced in October 1933 in two distinct forms - Competition and Racing - and in both 350 and 500 engine sizes. The Competition variants had an upswept exhaust pipe with tubular silencer, crankcase shield and compression ratios of 7.5 (350) and 6.0 to 1 (500) respectively. For the Racing models it was a straight through pipe, two pairs of footrests, giving a choice of riding position and alternative pistons providing ratios of 7.5, 9.0 or 11.0 to 1. Both variants had 14 mm spark plugs, chrome plate tanks with black panels lined gold, Sturmey-Archer 4-speed gearboxes with positive stop footchange and, a q.d. rear wheel. Speedometer and rev counter to match could be supplied as extras; standard prices being £65 for the 350 and £70 for the 500.

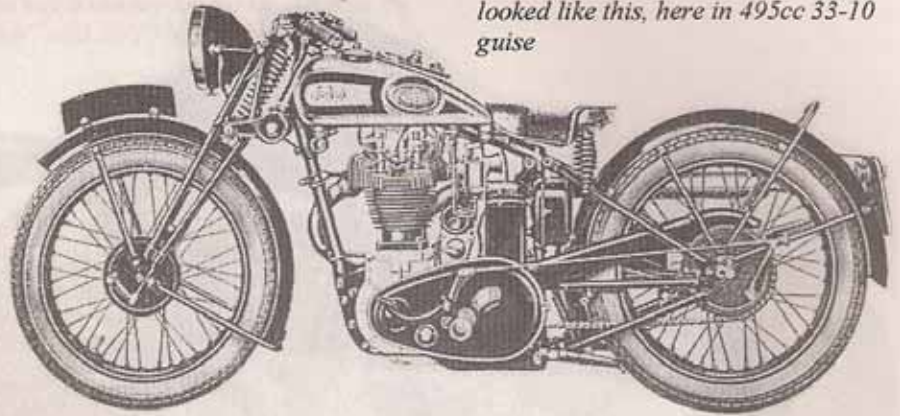
For 1934 there were no significant

changes, but the works bikes entered in the TT that year had hairpin valve springs, plus vertical finning to the cylinder head. These modifications were subsequently to appear on the 1935 production models, although the vertical head finning was only used on the 500, not the 350! Another feature first seen in 1935 was the use of check springs on the front forks.

In 1936 the vertical head finning appeared on the 350s too and a new gear type oil pump was adopted. In the TT, Harold Daniel finished 8th in the Junior, with George Rowley one place behind.

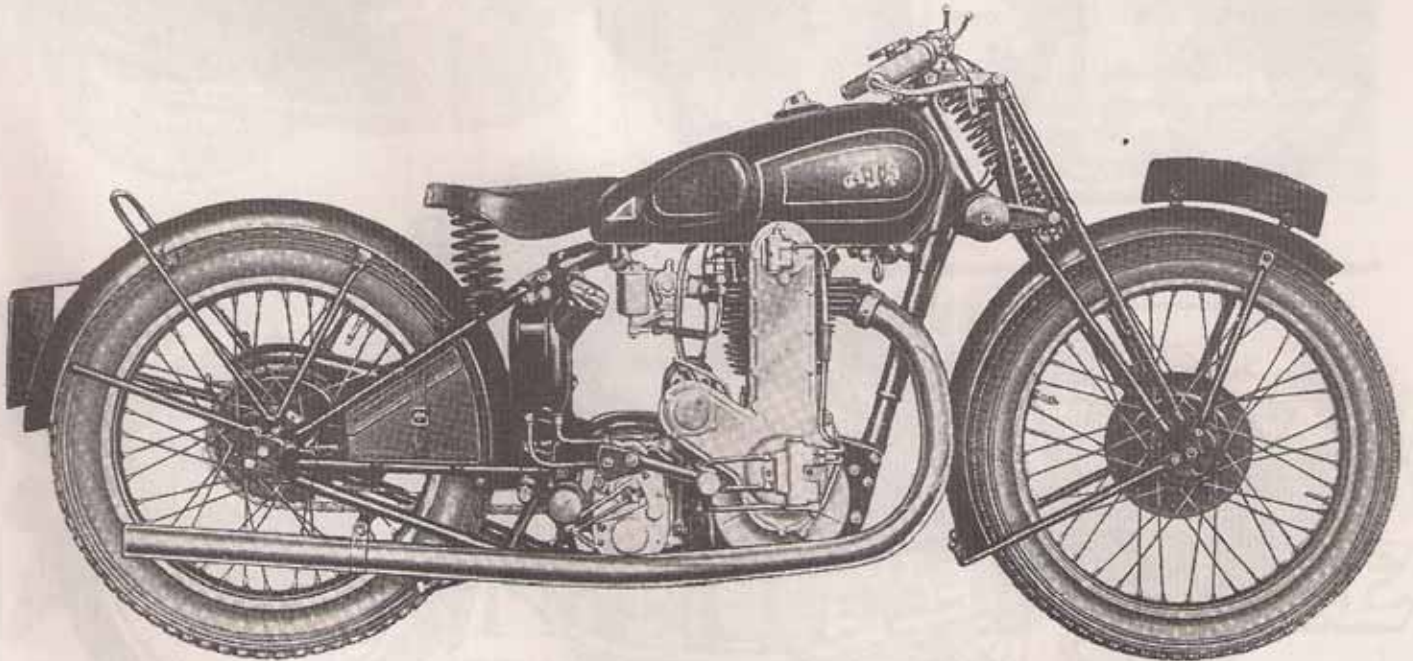
The next year (1937) the cammies seem to have been neglected, they weren't included in the range announcements, nor in the sales catalogue. However, it had been

*From the nearside the 1933 Trophy looked like this, here in 495cc 33-10 guise*

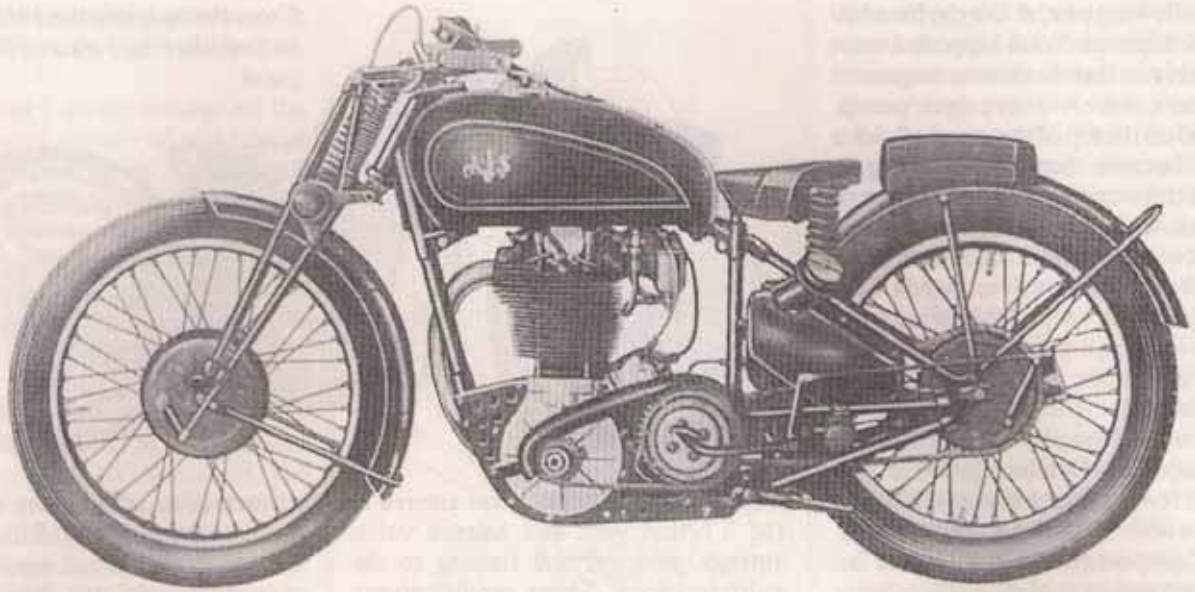


announced a little earlier in '36 that a special racing model of the 350 would become available and, sure enough, this promised model was displayed on the AJS stand at the Olympia Show in November '36.

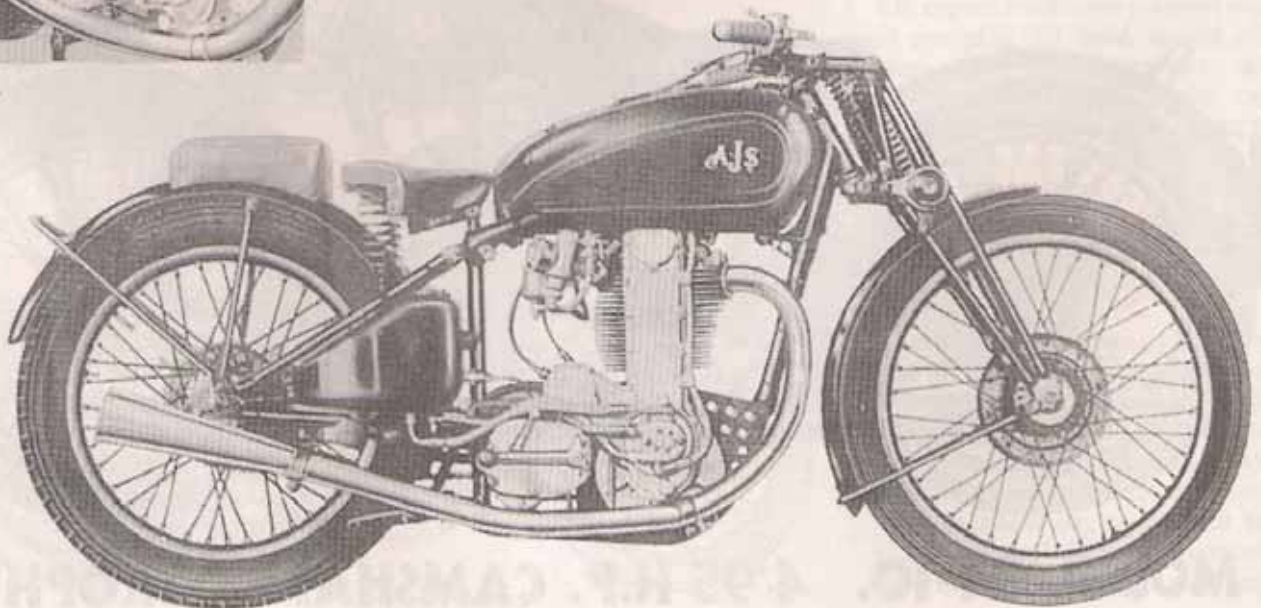
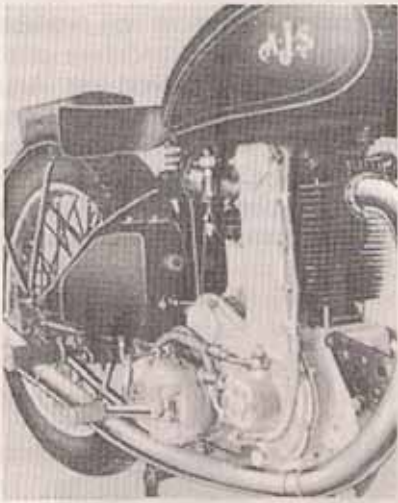
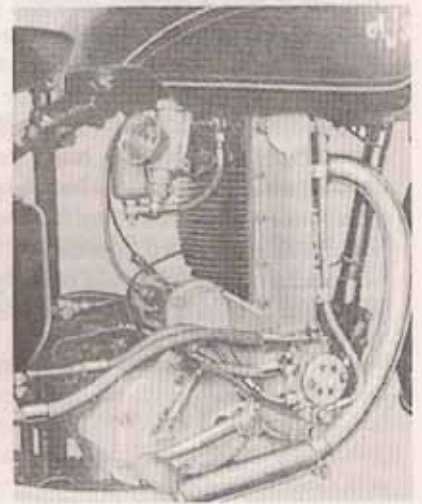
This machine was described as a new model, to all intents and purposes for racing only and, as if to confirm this fact, the maker's couldn't deviate from the specification. In other words they wouldn't fit a silencer, nor a kickstart, no electrical equipment was available and quite obviously, they did not intend it to be suitable for road use. As a consequence of this, the model was coded 37/7R, being in AMC parlance, the year code (37), model number (7) and racing application (R). So, this time the R did mean racing and this is why



**MODEL 34-10. 4.95 H.P. CAMSHAFT "TROPHY"**



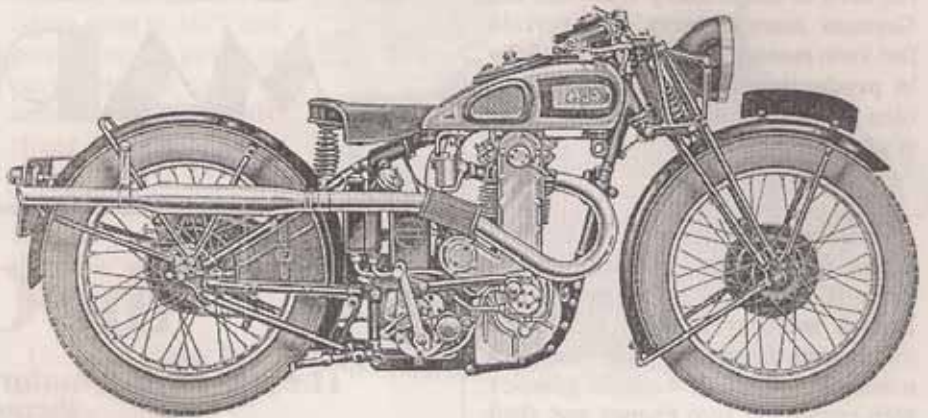
*From the maker's 1938 advance catalogue - well, leaflet really - this is the racing Model 7R. The 500s and all road-going versions were dropped from this season. The remote float mounting isn't shown, although it was introduced in this year*



the post-war "Boy Racer" the AJS 7R was so named.

The engine was similar to that used in the TT and had both alloy head and barrel, the driveside mainshaft ran in a four row roller bearing, the piston gave a compression ratio of 8.5 to 1 and, unlike previous practice, no alternatives were listed. BTH racing magneto and TT Amal carb were specified and, as before, Burman supplied the special racing gearbox. The frame was described as "semi-duplex", with triple rear fork members and large engine plates which also carried the gearbox, as on the works TT models. Petrol was contained in a beautiful 4 1/2 gallon tank, finished in black and gold; the separate oil tank having a full one gallon capacity. Finally the exhaust terminated in a megaphone, so it certainly did look like a real racer! Price was 85 guineas which was considerably less than an Inter Norton to racing specification and yet there weren't to be that many of

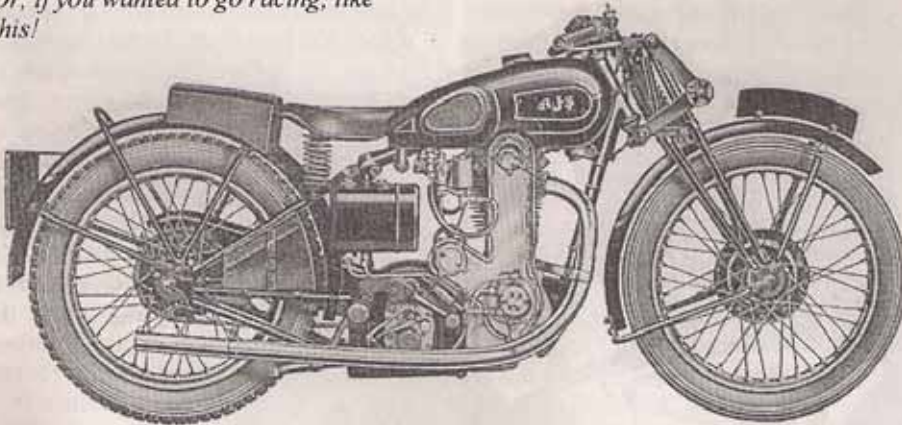
*1936 was just about your last chance to buy a cammy for the road, when the 36/7 and 36/10 looked like this*



them in private hands in the TT, nor in the Manx.

From then on no further road going cammy models were listed and no 500s at all. The 7Rs continued for 1938 and 1939 with but minor changes or improvements. A remote mounted float chamber was fitted in '38 together with a restyled wraparound oil tank. Although the works bikes in the TT had spring frames, these were not available on private owner machines.

*Or, if you wanted to go racing, like this!*



After WWII the "Boy Racer" was an entirely new design, about the only thing it had in common with the prewar models was the Weller camshaft chain tensioner and the vernier timing sprockets.

But as if to remind a later generation that the older cammies were not so bad, Ted Iffland went on campaigning a prewar 7R for several seasons putting many a "modern" Ajay to shame!

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