

THE MACHINES THE ARMY USES

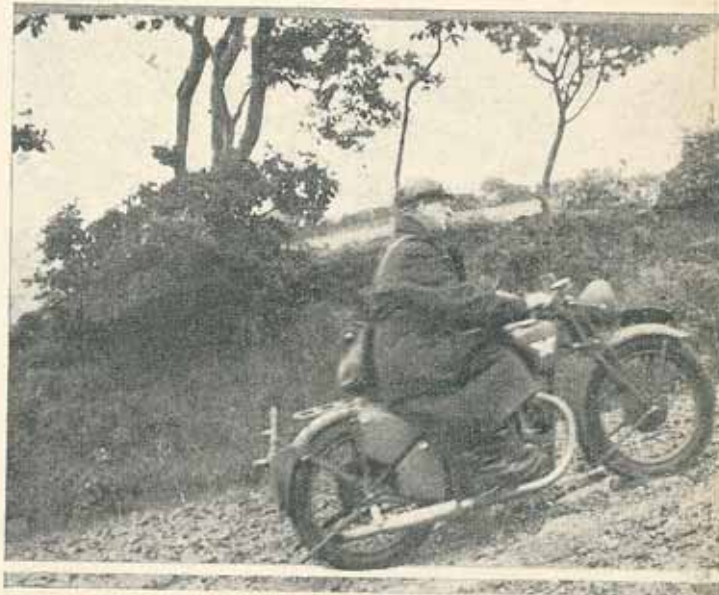
The 350 c.c. Overhead-

A Gruelling Test of a Standard Motor Cycle Taken Straight from a Large Batch About to be Delivered to the Army : A 364-mile Day that Included Cloutsham, Beggars' Roost, and Many Another Famous Hill

By ARTHUR BOURNE,
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In between the bends on Cloutsham, as it is to-day. Notwithstanding a bottom gear as high as 15.56 to 1, the Matchless got up



WHAT are the machines the Army uses really like? Are they good—machines that the civilian enthusiast would love to own and tend? Some of us know, or think we know, the answer; they are very good. Indeed, many letters received over past months have contained thinly veiled envy of the Army riders' lot—of the machines they ride, often brand-new machines, which, in peacetime, in numerous cases, they yearned to possess, but couldn't, perhaps for reasons of £ s. d.

The series of articles, of which this is the first, aims at revealing exactly what the Army motor cycles are like and to give, in illustrations and sometimes words, material which may help those who ride them and interest others, whether men about to be D.R.s or motor cyclists who cannot join up for the simple reason that their work in a civilian capacity is too important to the nation.

What Sort of Test

The first question for anyone about to test an Army machine is, "What sort of a run, or runs, will give a true impression?" Each particular model has been tested in innumerable ways by the Army before any orders were placed. What sort of test can a poor Pressman devise? Secondly, what form of illustrations will be most interesting and helpful? This second question is fairly easily settled, for probably never has there been a more popular and valuable technical series than "Modern Engines" with their unique drawings by *The Motor Cycle* artists.

Much of the work for which Army machines are used is the conveying of despatches from one map reference to another and for convoying vehicles. Despatches—how far will a D.R. have to ride as a maximum? Fifty

valve "G3W0" Matchless



The first of a short series of articles revealing exactly what the motor cycles used by the Army are like, and illustrated with valuable, unique drawings by "The Motor Cycle" artists

(Right) On Doverhay. The wheel marks that appear on the original picture have been dotted in to reveal the path taken on the short but very steep section in between the two hairpin bends

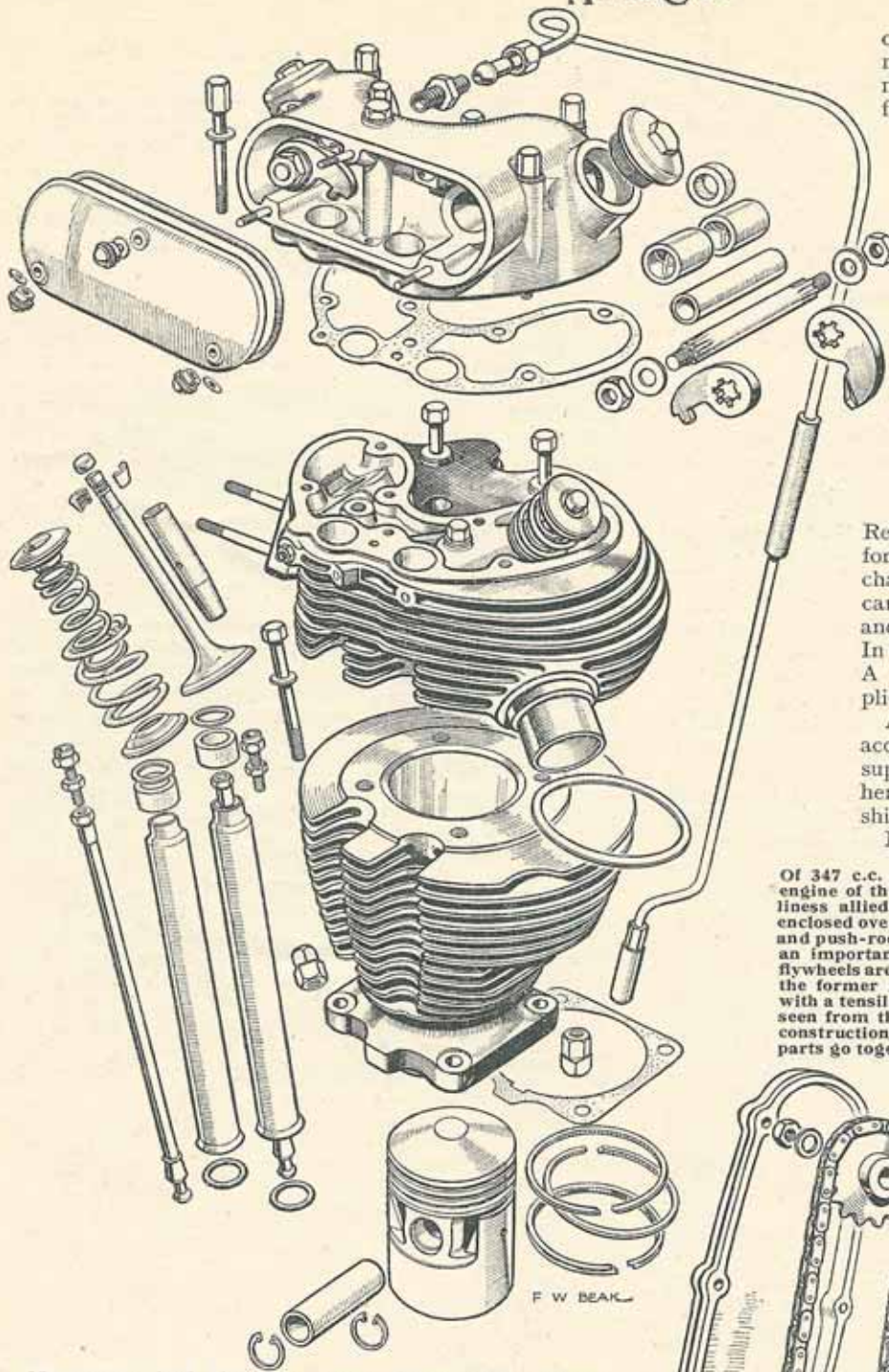
(Left) Just below the famous "hump" on Beggars' Roost. The machine actually made a restart at this point



miles, one hundred, two hundred? This caused one line of thought. What sort of going might they encounter *en route*? Might there not be lanes near journey's end—perhaps some cross-country work? Could there not be a hill, perhaps like Cloutsham or Doverhay or Beggars' Roost?

The two thoughts seemed to blend. A day's outing was indicated! First, there would be a 160-mile run down to Porlock, presumably about as long a non-stop trip as a D.R. would have to tackle; then a circular tour embracing some of the choicest hills Exmoor has to offer, and, finally, another 160-mile journey to round off the day. That, it seemed, should reveal most things about the machine, and give one the longed-for opportunity of revisiting some of the finest and best-known trials hills in the land. Would they have altered or be just as they were for the 1939 Land's End and Beggars' Roost trials?

(Left) Yealscombe, or "Exford" as it is often called, was at its slipperiest. The rounded slabs of rock that can just be discerned in front of the machine were coated with treacherous slime



of course, picked upon one which had not been O.K.'d. The chain adjustment had been noted down as not perfect—apparently the dynamo chain was a fraction sloppy. Anyhow, that was adjusted while I looked on, tanks filled up, trade number plates fitted (as the machine was to be in my hands straightaway by the terms of the arrangement and getting the machine registered would have taken time) and the tool-boxes packed with the wonderful array of equipment that each Army rider has as "issue." This last is worth quoting. In addition to an extremely full kit of tools there are: A spare plug, roll of insulating tape, three tyre levers, a neat rattle-proof box of Coventry or Renold chain spares, padlock and chain for the machine (not a very sturdy chain), two webbing straps for the carrier (super ones), tyre repair outfit and a first-class chain rivet extractor. In the tool-bag are various spare nuts. A tyre pressure gauge is not now supplied in the kit—they are issued later.

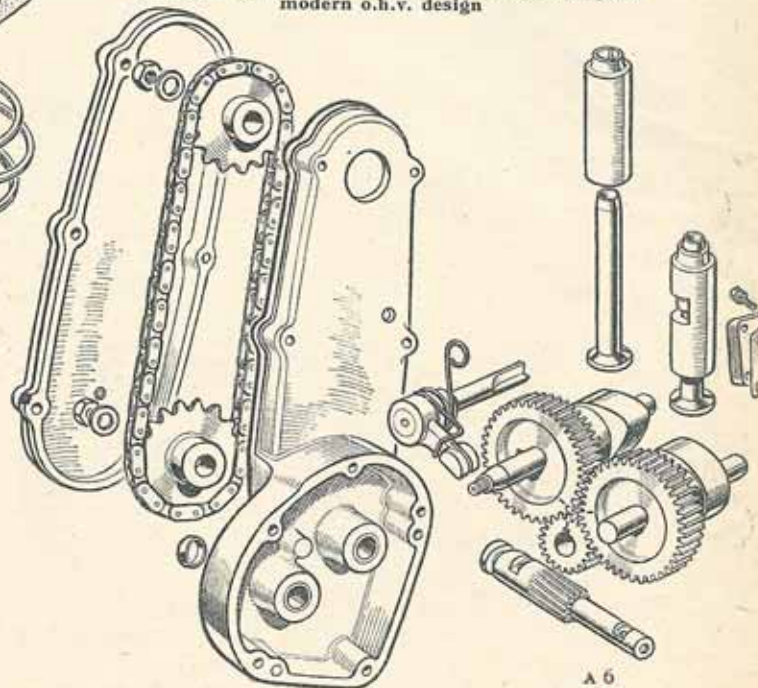
All this kit goes in two really large, accessible tool-boxes. No dusters are supplied for wrapping round the tools; hence on arrival home I used one old shirt and one worn-out pyjama coat!

No alterations were made to my very

Of 347 c.c. (69 mm. bore and 93 mm. stroke), the engine of the WO/G3 Matchless is notable for its liveliness allied with excellent slogging power. Fully enclosed overhead valves, with coil-type valve springs and push-rod operation, are employed. Sturdiness is an important feature. Both the connecting rod and flywheels are similar to those of the 500 c.c. Matchless; the former is made of 1 per cent. chromium steel with a tensile strength of 45-55 tons/sq. in. As will be seen from these special drawings, showing the detail construction of the WO/G3, and exactly how all the parts go together, the engine is a first-class example of modern o.h.v. design

No sooner had the idea taken shape than arrangements were made for the machine, the first to be tested in the series. The decision was that I should visit the Matchless factory the following morning, point to any one of the many machines coming through and say, "I'll have that!" Thus would the machine be straight off test and, assuming the resident Government inspectors passed it, would, but for me, be packed off immediately and perhaps even by the time these words appear in print have been in the hands of an Army motor cyclist.

On arrival at the factory I went straightaway to the inspection department. There were rows of machines, all in their drab khaki paint. I said, "That, please!" and,



The Machines the Army Uses—

which is sitting, rather than poising on the footrests, I found that on bumps I came down on top of the regulator. Slight raising of the saddle would obviate this, and also I suggest improve the riding position.

Brakes, effortless bend-swinging, gear-changing, engine—all were exactly as one could wish. On main-road hills the machine swept upwards, the engine maintaining its revs in a manner that seemed almost "o.h.v. five-hundred."

The first part of the run had been covered—those "despatches" had now to be delivered!

After those at the garage had said: "What, have you come prospecting for the next Easter Trial?" I set off for the hills. It seemed a bit cruel, putting a machine that only had two hundred miles on the speedometer to tackle the Exmoor trials hills. We would start with an easy one—in other words, Porlock. The Matchless took the hill in its stride. Bottom gear for the two hairpin bends, and second, 10.26 to 1, in between and for about a couple of hundred yards above the second bend; then third gear, 7.4 to 1.

In Teeming Rain

Over the top and on to Lynmouth in teeming rain that was causing the few cyclist tourists to shelter. Countisbury, which has lost all its signs except one saying "Bank it!", provided its usual excellent test of brakes. Those on the Matchless were smooth and relentless. I purposely went down with the throttle shut to see if there was a sign of the plug trying to oil up. There was none, and immediately the Matchless was taken up Lynton. The hill is different. The hairpin bend has disappeared; in its place is a wide banked S-bend, not unlike those one finds on Continental passes, the most recently built ones.

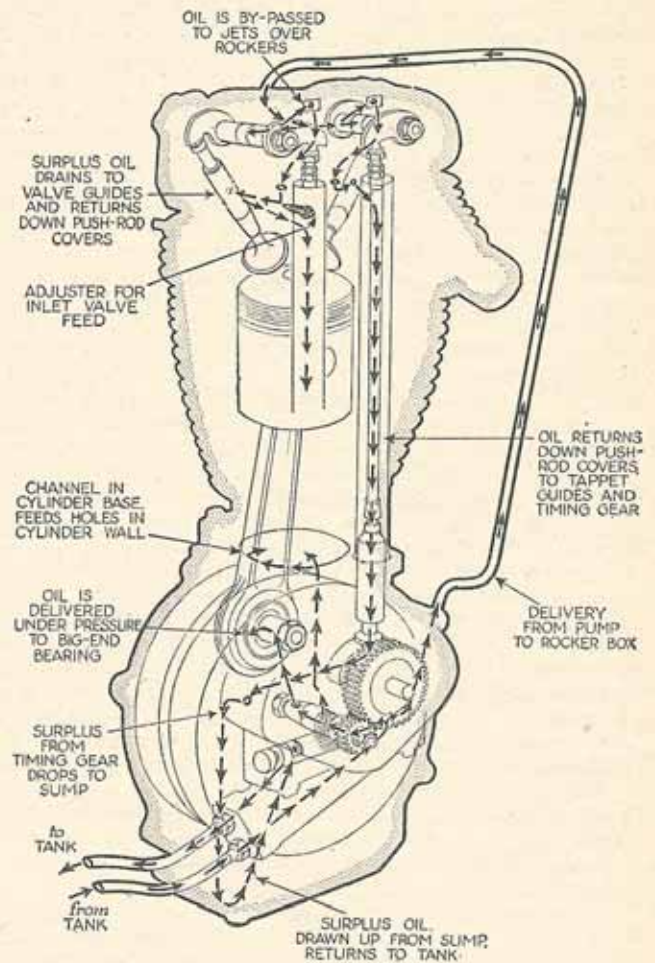
Almost immediately above what used to be the hairpin, the Matchless took second gear and climbed comfortably upwards. Then the hairpin to the right, which the M.C.C. observed in one Land's End, and into Lynton for the climb of that other and more difficult test hill, Station Lane. There was not all the loose that was encountered by competitors in the last Land's End Trial, but still the same gradient and a fair coating of slime.

Bottom gear (15.56 to 1) was, of course, needed, but with this engaged the machine went up with the greatest of ease—merely a few short bursts of throttle, one for each patch that looked as if it might be slithery.

Next on the list, it almost goes without saying, was the alleged 1 in 3.6 Beggars' Roost. I use the word "alleged," because the famous "hump" seems to have grown flatter with the years, or possibly it is that machines have got better. Anyhow, war does not seem to have made much difference to the surface of the old "terror." There are still the huge quantities of loose stone on the lower stretches. On this occasion there was also a meandering path which could be taken instead! Not too good a path, maybe, because the hill was wet and the path looked as if it might be sticky.

The path was taken. In any case, there would be plenty of loose on at least one of the hills that were to be included later on! Again the Matchless spurned a really steep climb—so much so that I decided to do a restarting test immediately below the hump. This would at least show whether the clutch was capable of putting up with abuse. It was, and is, for the machine, albeit with considerable use (or misuse!) of the clutch, duly got off the mark, and in the matter of a couple of yards I was able to put my feet on the rests.

So far, excellent! But there had not as yet been any mud, nor water, nor anything with real rocks. So down Lynton, up Countisbury, and back to the A.A. box above



Very special attention has been paid to the lubrication of the bearing surfaces, including, of course, that most important of all bearings, the piston. In this special diagrammatic drawing is revealed the paths of the various oil feeds

Porlock. Here sharp right, and over that rough, short cut to the Exford road.

There are hummocks on this short cut, and grass and heather if you like to keep to it. Everything was wet—very. A good opportunity of bucketing the machine about a little, and seeing how she handled on cross-country sort of going. There was not a skid, never a sign of the machine trying to get the upper hand. The only thing was that at the far end it was found that the speedometer had ceased working. The driving "dog" at the bottom end of the inner cable had come off.

Then to Exford for Yealscombe or, as it is often called, "Exford." This would provide a good watersplash and rounded slabs of rock set on a very steep gradient—slabs that on this day of rain would certainly be greasy. On the way, however, I passed the end of another old favourite, that cul-de-sac Edgcott. There should be mud here, I thought, as I turned back. There was, though not a lot. However, there were the usual rutted rock steps and plenty of slime—a very good test of ease of handling.

The Matchless went up the bank and down the bank, and up to the summit. While not a lightweight, it is light enough to be really "handable" under such extreme conditions. Several times I felt in my bones that it was *finis*, but no! back to heel the machine came, in spite of clumsiness on my part.

The splash at Exford was not deep, so I did not adopt the correct dodge at this point and travel down stream, making a sharp turn in the middle of the stream a dozen yards below the foot bridge, but rode straight across and, with malice aforethought and to the consternation of several small trout, into the deep hole near the far bank. There were sizzles and the muffled sound of an exhaust well below water, but no sign that the engine might stop. Every vital part is set high, and gone are those air holes at the bottom of the Amal's mixing chamber; instead, there is a duct in the air intake—which means that when an air filter is fitted all air goes through the filter.

Yealscombe was at its slimiest, what with rain, hens scratching about and mud carried from the field. Again, however, the Matchless demonstrated its ease of handling. Was there no hill that aided and abetted by me would bring it to a halt? I thought of Cloutsham, the next on the list, and the vile state it was in last summer—so vile that it looked as if someone had scattered the huge stones from half a dozen walls on to it. I recalled how glad I was not to have to tackle it—one of the few hills that have always been kind to me.

This was a thoroughly bad frame of mind to get into. However, Cloutsham it was to be, so over the "tops" to Cloutsham Farm, down the "by-pass" and hairpin left on to the hill. Knowing the ropes, if not the rocks, I kept well out at the first hairpin. Already there had been some hoppy-twitch and a slither or two. On the bend the clutch had to be used to aid the engine as well as in the negotiation of the hairpin—a bottom gear of only 15.56 to 1 and a 350 c.c. engine, it was asking a lot. No, I did not cleave through the rocks above, but perched on one of them, as a photograph bears silent witness.

Should I go on and risk damaging the machine, or should I say that with my weight, my clumsiness and my stage fright it would be very much wiser to go in search of lunch and much fairer to a certain very good motor cycle? Besides, the weather was very, very wet.

Some little devil said, "You won't hurt the machine—not, that is, more than something replaceable like a foot-rest or an exhaust pipe." I looked underneath at the way the lug at the base of the front-down tube curves back and the protection afforded to the crankcase. I had another shot. Still no good—only just past the hairpin. Finally, as there was a bit of a lull in the weather, I took off my coat, lowered both tyre pressures to what seemed sensible, and then the Matchless did get up. Had I been watching performances instead of endeavouring to perform, down in my notebook would have gone the laconic words: "Clutch—general untidiness."

Doverhay a Butterslide

However, the Matchless, in spite of its many handicaps and the hill being worse than I have ever seen it, had climbed non-stop to the summit.

Of course, after this Doverhay would be a cakewalk. As a matter of fact, however, it was something of a butterslide. Whether it is timber-hauling or not—one youth dragged down a young tree while I was there—I do not know, but the lower part of the hill is certainly as rough as I have known it and on the steep approach to the S-bend there was slime which, for all my reduced rear-tyre pressure, made it necessary to be wary as to the amount of throttle opening.

The approach to the hairpin had to be slower even than usual; there was not wheelgrip for much speed. Normally I would have gone a bit quicker, especially in view of the rather high bottom gear—high for this type of work—and on that extremely steep stretch between the two hairpins on which one cuts gently across from the outside of the first to the outside of the second it was, as one might

expect, necessary to give a little help via the clutch. However, up the machine went all right, taking each bend in a neat swing. That is a great feature of the Matchless; the machine can be ridden feet-up, without any wobbling, at speeds well below walking pace; it is stable at very low speeds and right up to its maximum, which is around 70 m.p.h. with the rider lying down to it and an honest 65 if a normal touring position is adopted.

A Go-anywhere Machine

This was all the hill-climbing, for it seemed that while the possibilities had not been exhausted sufficient hills had been tackled to prove that the Matchless is a go-anywhere machine! So the next thing, as I had had lunch after the visit to Cloutsham, was to set off on the 162-mile run home, to call it a day. And what a day! It was still raining, and showed every sign of continuing to do so all the way home. And Army machines have narrow guards as a rule—guards that do not readily choke up with mud; hence there is not exactly a lot of protection for one's back from water thrown up by the rear wheel.

As it happened, the weather became even worse. In places the roads were awash. However, that did not worry the ignition side, nor anything else except that wisdom demanded that the brakes should be applied periodically to make sure that they would be "there" if really needed. And in spite of the slowing effect of the weather and the heavy traffic that was encountered at times, the now-getting-on-towards-run-in Matchless only took from three minutes to three to three minutes to seven for the final run, an average of 40.4 m.p.h. Again the run was non-stop.

And so the machine arrived back, having covered 364 miles in the day and, if need be, ready for a further 364 miles the following day. The valve gear might have settled down a trifle, as is always the case with a new machine, but beyond perhaps seeing to the valve clearances and taking up the initial stretch in the rear chain, stretch which was not such that attention was essential, the machine was all ready for its tanks filling up and setting off again. Oil consumption, with the adjustable inlet valve feed set generously, worked out somewhere around 1,800 m.p.g. Fuel consumption, in spite of a new engine and the over-40 m.p.h. averages, was roughly 65 m.p.g.

At times on the return journey the machine was driven really hard, both in top and on the indirect ratios. The gears are particularly well chosen. The upper ratios—top, third and second—are nicely close together and suit the engine admirably, while bottom is low enough for pretty well anything an Army rider is likely to tackle on duty. And the Burman box is so quiet on the indirect ratios that it is impossible to tell, except by engine revs, which gear is engaged. It is not too easy to tell between top and third on revs, because the engine is so exceptionally free from fuss and any semblance of a vibration period.

There was some pinking unless one was gentle with the throttle or made use of the stubby, and therefore not very sensitive, W.D.-type ignition lever. I must add that I was using pool and not Army petrol.

Anything up to about 58 m.p.h. is a comfortable speed with that desirable margin of throttle in hand. Higher speeds are "comfortable" from the handling point of view, as I have inferred. Indeed, very few machines handle as well as this lively well-made three-fifty. To say that this is the nicest three-fifty I have ridden might be an exaggeration, for one recalls many three-fifties. I will say, however, that this standard, picked-at-random machine is a gem of a motor cycle. The man issued with it and the hundreds who are issued with precisely similar machines are lucky. Even as many will envy me my day out, I envy you!