

A low centre of gravity and a smooth running engine made the 740 c.c. side-valve B.M.W. a pleasure to swing round fast bends

"AMBLESIDE" TESTS



B.M.W.

Experiences with an Out-of-the-Ordinary Side-valve Machine from a Famous German Factory



THERE is something indefinably fascinating about riding a machine which is out of the ordinary.

Particularly is this the case if it emanates from a foreign country. We in England are rather liable to have very fixed ideas as to what goes to make a motor cycle and what does not, and therefore, when I was told to take over one of Germany's leading motor cycles for a few days, I was more than excited at the prospect of broadening my views.

The machine in question was the 740 c.c. Model R.12 B.M.W., a product of that famous stable, the Bavarian Motor Works, of Munich. British readers are familiar with the name of this German *marque*—not only has it wrested from us the International Trophy in the International Six Days Trial for two years in succession, but it also holds the world's maximum speed record for motor cycles. From this it will be gathered that, although unorthodox to our eyes, the B.M.W. is a well-proven design with a definitely outstanding performance.

Two Carburettors

Briefly, the R.12 is a touring model, a side-valve. It has the B.M.W. flat-twin engine arranged transversely in a pressed-steel frame. The engine, clutch, and gear box are in one unit, and the final drive is by shaft to the rear wheel. The complete engine unit is undeniably a masterpiece of design and pleasing to look upon. The R.12 is fitted with two Amal pump-type carburettors, and has cast-aluminium cylinder heads and fully enclosed valve gear. A point worthy of notice is that the finning around both the inlet and exhaust ports is separate from that of the cylinder barrels. A large petrol filter combined with a two-way tap is part of the equipment.

No air lever is fitted to the carburettors, yet starting, once the knack had been acquired, was easy, in spite of the fact that the kick-starter works outwards on the near

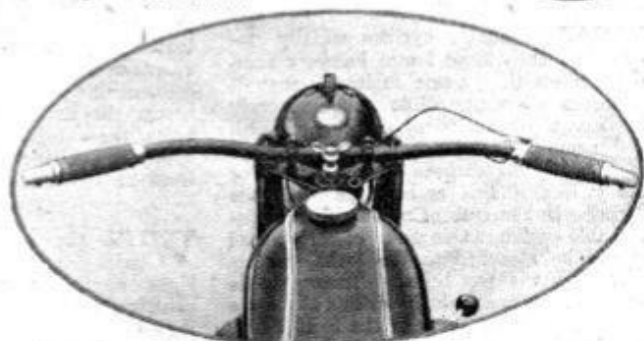
side. Towards the end of the test I found myself able to start the B.M.W. without having to rise from the saddle.

When once warm, the engine had the most glorious tick-over that I have heard for a long time; its extreme silence evoked interest wherever I happened to be.

The engine was particularly sensitive to the adjustment of the carburettors. This was most noticeable if one float chamber had been flooded without the other for starting purposes. One cylinder would begin to fire unevenly, with the result that the whole engine unit would tend to



(Right) Telescopic, oval section, forks and a streamlined rubber mounting for the head lamp are features of the B.M.W.



Cleanliness is one of the many features of the B.M.W. and the handlebars are not exempted. The only cable visible is the control for the head lamp dipping device

Transverse Twin

swing the frame from side to side. The misfire would disappear within two or three seconds, after which no noticeable vibration could be felt. In fact, the engine appears to be perfectly balanced and vibrationless throughout its range.

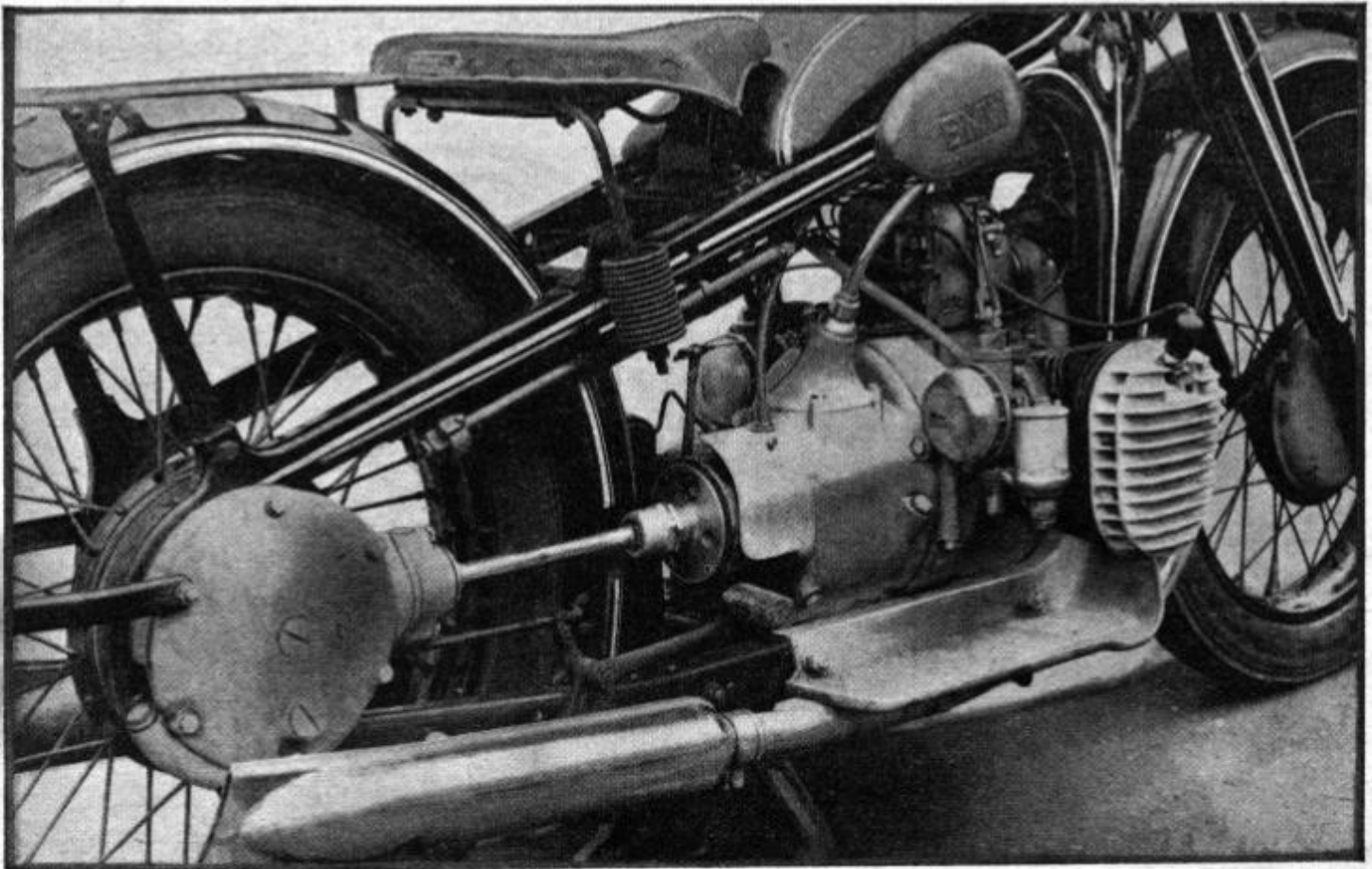
I found myself completely at home within a few yards of taking over the machine. The riding position just fitted me, though I doubt if a taller man would find the leg position quite so comfortable on account of the proximity of the air cleaner of the off-side carburetter to one's right shin-bone. Possibly the fitting of footrests in place of the footboards would obviate this minor point. Incidentally, the footboards are cast in some extremely tough aluminium alloy, which will withstand the machine toppling over on its side without damage.

The gear change is simple, and similar to that of a car. It has an H-type gate combined with the rubber knee-grip mounted on the side of the frame. While it was always possible to engage the gears without using the throttle, a completely silent gear change called for a blending of the engine revolutions with those of the gears. The clutch was delightfully light and smooth in action, although on withdrawal it produced a curious metallic ring.

Of the steering I find it hard to avoid writing too much. The latest type of B.M.W. forks are fitted. They are telescopic in action and automatically damped hydraulically. Apart from appearance—no thin tubing, no external springs, no grease nipples, and no visible working parts—the forks are also perfect in action. When moving slowly in traffic the low centre of gravity of the machine, and possibly the wide handlebars, helped me

(Right) A surprise for the uninitiated! The tool box of the B.M.W. is to be found inside the gear box casting. Note the very complete tool kit

(Below) The engine-gear box unit is a masterpiece of clean design, while the shaft-drive is noteworthy in its successful application to a surprisingly fast motor cycle



"Ambleside" Tests a B.M.W.—

to steer a straight course without a wobble. At speed, road shocks were conspicuous by their absence. Over rough ground the B.M.W. could be driven as straight as a die. I say driven, because one feels as if one is sitting inside the machine, rather than sitting on the spacious saddle. Always there was a peculiar self-centring action about the steering.

At no time during the test was it possible to detect any effects of the transverse engine mounting upon the steering. Taking fast bends at over 70 m.p.h. to the right and to the left was precisely similar to a chain-driven racing model. I even tried accelerating and decelerating, without any trace of side thrust. The only time it was possible to detect any side thrust was if I suddenly opened the throttle when the engine was ticking over in neutral. Then, and only then, did the machine show a momentary tendency to swing to the right. Once the engine was turning over at a reasonable speed any further acceleration had not the slightest effect.

When I took it over the B.M.W. was brand new, and in consequence I ran it in carefully. At thirty-five miles an hour the fuel consumption was 81 m.p.g.—an extraordinary figure for a 740 c.c. engine. Later, at cruising speeds of over 60 m.p.h., the consumption increased to approximately 62 m.p.g. I should here add that a deep gauze filter is fitted to the petrol tank's filler cap orifice. Arranged spirally inside this gauze and reaching to the bottom of the tank are a series of numbered tabs ranging from 1 to 15. These actually represent litres, and it is possible to see at a glance by means of the level of the petrol how much fuel is in the tank, which, incidentally, holds close on three gallons.

Over 80 m.p.h.

While I had the machine in my possession I took the opportunity of riding down to Bournemouth, and from there on to Shaftesbury. All the way down it rained steadily, yet not once did I suffer a skid. The brakes are really powerful and exceptionally smooth and light in operation. The rear brake is heel operated, but requires so little pressure that any personal antipathy towards this type of control was immediately forgotten. Apart from the usual cable and rod adjustment for the front and rear brakes respectively provision is also made to reset the position of the brake shoes.

The mudguarding was *par excellence*. At the end of the trip the engine was spotlessly clean, while the projecting cylinders and heads showed only a faint trace of mud on the edges of the cooling fins. On another occasion I covered ten miles through London over wet roads at 20-30 m.p.h. and not a trace of mud was to be found on either my shoes or legs. This I put down to the wide and deeply valanced front mudguard, which is attached to the rigid tubular fork members, and therefore does not move with the front wheel over bumps.

English riders are apt to look upon a side-valve engine as being powerful but not particularly fast. On several occasions I took the R.12 B.M.W., which is a touring model, up to speeds over 80 m.p.h., but could not better 82 m.p.h. In third gear, which is practically silent, 71 m.p.h. was the maximum, while 58 m.p.h.

and 40 m.p.h. were the respective maxima in second and bottom gears. In connection with the above speeds I should say that although a very excellent steering damper is fitted, it was not used. The acceleration figures are equally outstanding. From 20 m.p.h. to 45 m.p.h. the B.M.W. took just over 4s. in second gear (8.4 to 1), in third gear (5.8 to 1) it took 6s., while in top (4.35 to 1) the time taken was 10s.

Perhaps by now you will have gained some idea of the real kick I obtained in riding this machine. Mile after mile could be covered at really high speeds without hearing the engine or exhaust. Only by turning my head was it possible to detect a faint whine from the transmission, while I am still uncertain as to whether the barely perceptible hum was the exhaust or the tyres. The pleasure of swinging the B.M.W. into and out of fast bends has to be experienced to be believed, even though it is a heavy machine—actually it weighs 406lb.

Just as the performance at high speeds was admirable, so was it the same when riding on congested roads. The minimum non-snatch speed in top gear was 14-15 m.p.h. Under 20 m.p.h. a certain amount of rattle from the transmission became audible. In third gear the non-snatch speed was considerably lower—not much more than a fast walking pace.

Intriguing Features

I will mention now some of the little points to be found on the B.M.W. which intrigued me immensely. The Viegeler speedometer is mounted in the Bosch head lamp in the position where the ammeter is normally fitted on British machines. At night the speedometer is illuminated and can be easily read. The head lamp lights when the switch is depressed and turned. The actual depressing of the switch brings in the coil ignition, but when the machine is parked the lights can be left on if the switch knob is pulled out; this action switches off the engine and, incidentally, the Bosch horn. If at any time the accumulator should fail, a small slotted nut on the off-side of the dynamo-distributor unit can be turned with a coin, and this enables one to start and run the engine direct off the dynamo. While it will not kick-start in these circumstances I found the engine fired on pushing it in second gear. Once firing it would run reasonably slowly.

Another feature is the small bolt which is sealed by the makers and prevents the new owner from opening the throttle more than a certain distance. This is removed by the agents after the machine has been run in. But quite the *pièce de résistance* of the B.M.W. engine-unit is the tool box. On part of the gear box casting, which you would normally think to be full of gears, is a circular inspection plate locked by a key. On opening this cover you find a large tool chest, which also holds a grease gun and a puncture repair outfit of generous dimensions.

I could go on eulogising this machine for a long time. It is a machine which is luxuriously equipped and excellently finished, as befits its price, which in England is £115. With regard to the finish the machine was subjected to all kinds of weather, yet when I came to hand it back to A.F.N., Ltd., the B.M.W. concessionaires, there was not a sign of rust to be seen—nor, for that matter, was there a solitary oil leak.

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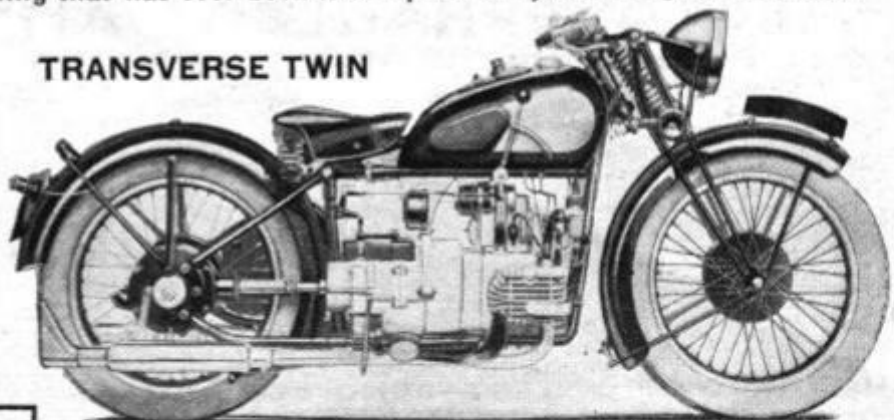
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