

Evaluation of a £330 h.o. twin with clear BMW antecedents

Russia's 650 Ural M63

WHEN a "new" country enters the motorcycle scene it is natural that there should be a number of questions about its products. When it offers machines at half the price of its rivals, these questions take on greater significance. The potential buyer is going to want to know if corners have been cut to produce at such a competitive price. He is going to want to know if spares will be available, how much they will cost and who will be able to do repairs for him. He is also going to ask how good is the machine. In the case of the Ural, riders are also going to ask if its resemblance to the older BMWs is more than skin deep. The machine poses enough questions for a writer to keep going all night. Some we have answered, we think, about others we are not so sure. First, let us look at what is perhaps the most intriguing point of all. The Ural's uncanny resemblance to the BMW. Coincidence? Far from it.

Little is known of the Russian motorcycle industry but it is not unreasonable to think, concerning the machines now available in Britain, that, lacking the experience to design quickly "straight

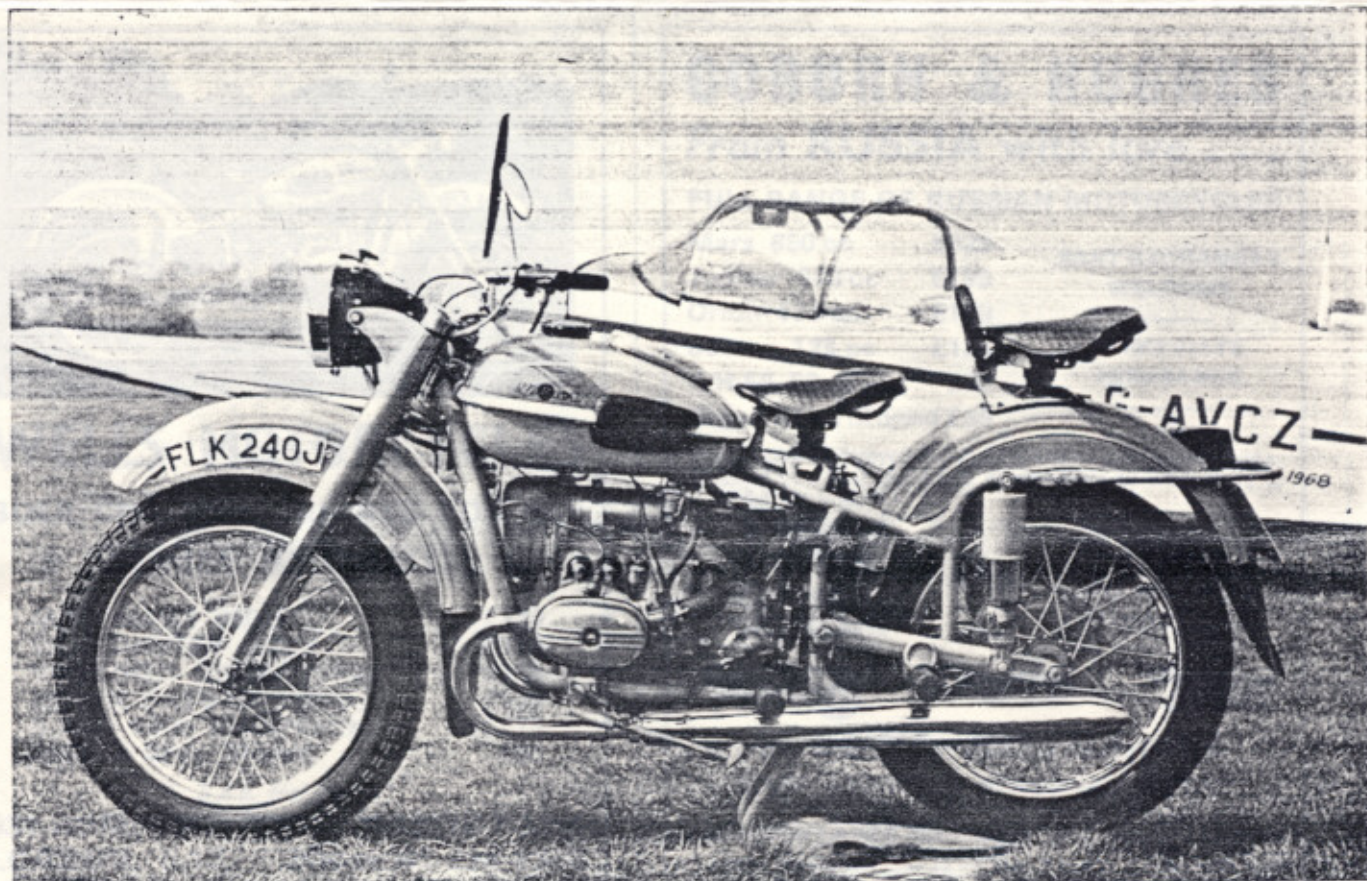
off the board", they examined the established products of other nations and decided to make replicas of the best of them. From the design used here we would say that the period in question was the early 1950s. The Russians did not confine their efforts to the flat-twin concept, though, for currently on view in this country are a 50 c.c. moped that just has to be a close relative of the NSU Quickly, a 125 copy of the Bantam (which was a copy of the DKW—take your pick which one the Russians used), and 175 and 350 derivations of older Jawa/CZs.

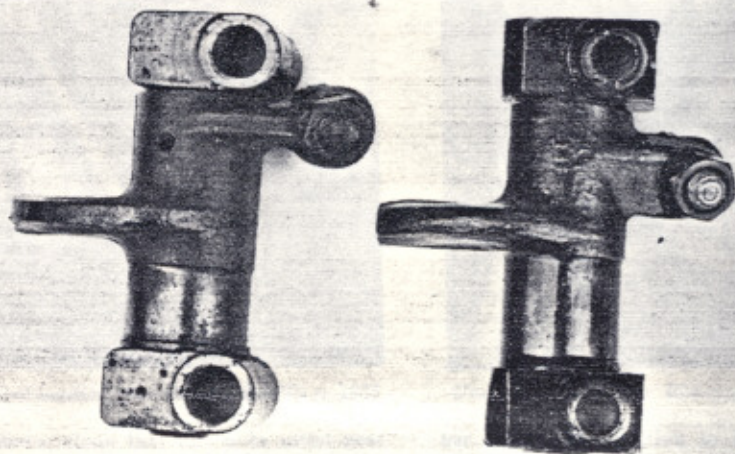
Let us look a little more closely at the ancestry of the Ural. It doesn't need much imagination to place it as a close relative of the pre-Earles-fork BMW; but to look to the R67 for help is not the answer—not in the engine room at least. It goes back further than that. Right back to the 1930s when BMW made the model R66, which was a 600 c.c. overhead-valve. Our research has shown the Ural engine to be very close indeed in construction to the R66. Unfortunately we were unable to find an engine drawing of the R66 in the time available but we

have reproduced here drawings of the R71, a 750 side-valve version of the same marque.*

Study the two engine drawings and note the similarities. Crankcases are identical except that the front timing cover on the Ural is cut short, a logical step for it was wasted space on the R66. Note how the sump covers have the same kink in the left-hand side to clear the oil pump. Note, also, how both oil pumps pass through the left side of the crankcase, appearing at the top by the dynamo. Both are identical in construction, both use the same large nut for fixing to the top of the crankcase. The oil pump is in a separate drawing for the Ural and in place on the BMW. Note how the rear main bearing and housing are removable from the rear of the engine on both machines. The R66 was one of the last BMWs to use this

*Bear with us, reader, when you look for these drawings—and don't find them. Lack of space, pressing printing schedules, this excuse, that . . . have meant that we have been unable to print them. So please accept our word for it when we detail the similarities. Ed.





Left: Interchangeable rocker blocks from BMW R60 (left) and the Ural. Above: Ural headlamp shell, as on earlier BMWs

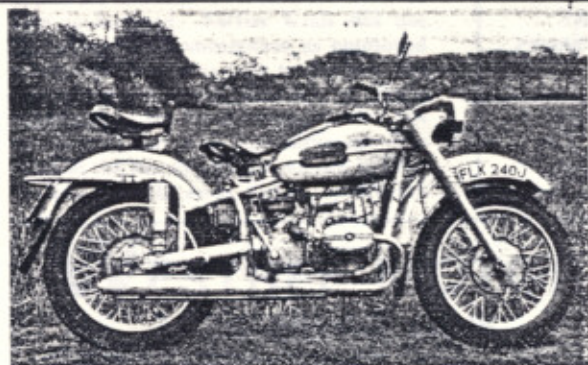
method. Turning our attention to the crankshaft . . . see how both use oil-thrower plates for lubrication of the big-end eye and have the crankshaft pinion mounted on the front. It needs a little mind-juggling to sort out all these items on the drawings for, unfortunately, the two factories never co-operated when doing the drawings and the Ural has its drawings broken down into smaller units. Bearings are obviously in the same place (it would be difficult to put them anywhere else) and the flywheels seem to be very similar. Where the Ural does differ is that it uses a two-plate clutch. The clutch-operating mechanism, not shown, is virtually identical. The dynamo was mounted on top of the BMW crankcase

until the late 40s but Ural have opted for the practical but more bitty method of mounting the voltage-control regulator in an easy-to-reach box on the right side of the frame. BMW squeezed it all in the end of the dynamo. Lastly, in the crankcase area the camshaft with timing pinion on one end and oil-pump drive gear on the other are identical.

An interesting "comparison" was made just after we took delivery of the Ural. The engine was rather noisier than we would have expected and we decided to investigate the right-hand-cylinder tappets. The locknut had loosened and allowed a 1/4in tappet gap to develop, unfortunately putting a kink in the push-rod. While trying (and failing) to

straighten this, it was necessary to remove the rocker block. Out of curiosity we tried the same item off the BMW and it fitted exactly on the Ural and could have been used to run the Ural. This is not the only item on the two machines that is interchangeable, and BMW owners could find a cheap source of spares here if they have a mind.

The gearbox, too, is not without signs of BMW influence. It is the older three-shaft type, whereas the later BMWs had four shafts. The footchange mechanism is in a detachable housing of the exact dimensions of the one used on the R66. Also retained is the unique auxiliary hand-change lever on the right side. This, too, is interchangeable. The Russians, I



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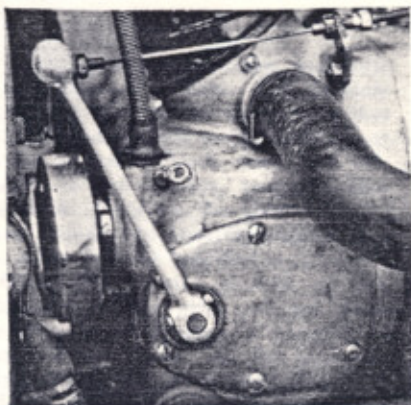
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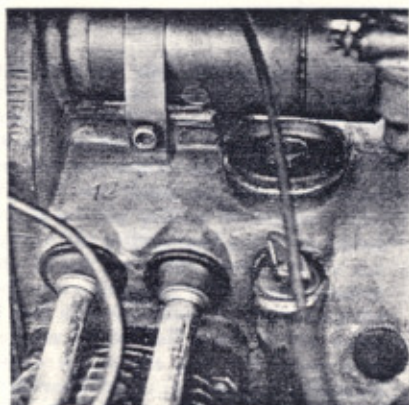
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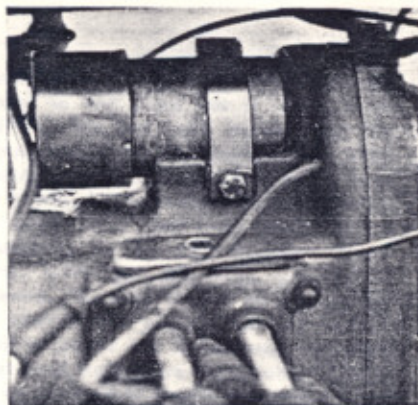
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Ural auxiliary gear-change; BMWs to 1955



Ural crankcase, with R66-type oil pump



BMW R66 with dynamo above the engine

believe, claim that this is to assist gear-changing when towing a plough or similar! I believe them. The air filter is a very effective unit (on account of the dirt in the fields, we imagine!). It is unlike that used on the BMW but the housing it fits on is identical. The carburettors have a float chamber that is pure Bing but the body is very much different, using a square-section throttle slide and chamber. Also different are the air-filter pipes. The path they take is the same but rubber has replaced the chrome pipes on the BMW. Rubber is certainly less painful if one hits one's shins on the pipes.

Coming to the cycle parts, the frame is not R66 but that which was fitted to the later R67/R51/3 series. Study of the drawing will show that the bottom lugs that used to be on the R67 have disappeared, to enable swinging-arm suspension to be used. Earlier Urals did use the plunger rear suspension as employed on the R67 and it is easy to see how the conversion has been effected. A slight difference in the Ural's frame is that the top bracing bar does not curve upwards to meet the steering lug, as on the BMWs, but goes straight on to join a top bracing

bar that is in addition to the normal. Note the square engine bolt holes. They are exactly similar on both machines.

The only other part of the Ural that has a definite line of ancestry to BMWs are the seats. The front swing saddle is much the same to look at but relies on a rubber block to do the dirty work, rather like the swing saddle used on later BMWs. The R66 uses an adjustable spring (nine different combinations of weight and height), a system that remained in use up until 1955. The rear

saddle of the Ural is undoubtedly the ugliest of its type ever designed, and was when an identical one was used on a BMW! It is a replica of the rider's saddle shape, with a large handle that digs in the driver's back all the time.

To move on to the rest of the machine. The mudguards must rate among the largest ever produced on a motorcycle. Their sheer bulk makes the Ural look a far larger machine than it really is, for its weighs only (only?) 430 lb. At least, that is what the book says. We never had a chance to try the machine on a weighbridge but from our position it seemed a very heavy 430 lb. The 3¾ gallon petrol tank has a large rubber strip around it. It seemed to serve as protection but did little to enhance the looks of the machine.

Suspension is by telescopic front fork and swinging-arm at the rear. Although the forks *could* have been BMW, equally they *could* have been half a dozen other makes, for it is difficult to make a pair of front forks look other than what they are. The rear suspension is fairly straightforward, with the swinging-arm pivoting above the line of the front footrests.

Everything about the Ural is designed

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for efficiency and convenience, with little or no concession to looks. It is certainly one of the most robust motorcycles that we have tried, but was undoubtedly below par in its finish. Urals come into this country in two colours, turquoise blue and black. Ours was the blue, a bright, snazzy colour that certainly ensured that one could find the machine in a crowd. Unfortunately it also showed up the deficiencies in the paint job and paint was seen to be peeling or chipped in over a dozen places. As the Ural was only a few weeks old it was, perhaps, a little early to know how the chromium plating will withstand our climate. It comes into the country liberally coated with anti-rust that, we gathered, is the devil of a job to remove.

It is inevitable that, coming from a country with a mind (if not a designer!) of its own, some of the sizes should seem strange to our eyes. Tyres, front and rear, are a very deep block tread, 3.75 x 19in. The headlight, too, has a funny size to it, using a six volt, 32/32 bulb. The headlight shell is another item that could serve a useful purpose for BMW owners. . . .

That just about wraps up our case for plagiarism. There is no doubt at all in our minds that the Ural is a dead copy of a BMW. The question is, does it matter? Others have tried before and failed (e.g., Marusho, née Lilac) but with the sort of market the Russians have available I do not think that will happen in this case. The designs the Russians decided to use are all from machines that have become extinct. What they have done is to offer people the opportunity to buy a rugged, robust and, it is hoped, reliable machine at a price they can afford. What they have not offered is a rival for the up-to-date, super-tuned (and often impractical) fast bike of today. Nor do they pretend to. They surmise that there are considerable numbers of riders around who have no interest in owning an increasingly complex, so-called superbike—who wish to buy an underpowered motorcycle simply because it is underpowered, and consequently, more reliable.

Looking at the Ural is not the best way to enjoy it. It is one of the least handsome motorcycles on the market today but its sheer ugliness becomes an attraction because it is so obviously a functional machine designed to be ridden and not looked at. The longer one rode the machine the less irritating its strange blend of lines became, and the more one began to appreciate its undoubted virtues.

Many who sit astride the Ural will hardly get off to a good start for they will find that the seat height of 33in stretches even average legs somewhat. It is an aspect of the Ural that is giving the importers some concern, too, for I understand that they intend to import some dualseats from Italy which will not only bring *terra firma* within footing distance but tidy the line up a little too. That is in the future, though. The Ural we

tested had no such advantage and we were faced with the slightly unhappy situation of being able to put only one foot or the other on the ground. And even that not firmly, but by stretching a little. If we think we had problems, what about the pillion passenger? The height of the pillion saddle is a whopping 36in. It left my wife pleading to be put down every time she wished to dismount and had also the effect of subjecting the passenger to the full force of the wind, as even the tiniest girl will tower over the driver's head. It became debatable whether my wife would succumb first to either exposure or altitude.

The first impression upon sitting on the Ural with the engine running is that one has been placed aboard one of those massive WD 750 c.c. side-valve Indians that abounded after the war. It was an impression that was constantly to re-occur to me as I drove the Ural. In other terms the machine did not really look like a BMW, at least not the turquoise one we had. If comparisons must be drawn then it would be better perhaps to think of the Zündapp "Green Elephant". To hear it running, though, soon convinced one of its parentage. Have you ever heard a pre-1940 BMW running? That is *exactly* how the Ural sounded. A subdued whoofle from the exhaust but, by today's BMW standards, quite a clatter from the engine. Not as much as, say, from the average vertical twin, but enough to be heard. It was not an unpleasant clatter and who wants a machine as quiet as a modern BMW anyway? One only worries because one cannot hear those contact-breakers crashing together.

Starting the big twin was by the method employed on most flat-twin shaft-driven motors, by transverse kickstarter. The one on the Ural terminates rather too close to the frame for starting from astride the machine to be easy or comfortable. There was quite a vicious kick-back, suggesting that perhaps the ignition timing was a little out. It certainly ought not to be contrary with a compression ratio of only 6.2 to 1. An air control is built into the left-hand air pipe but that was not needed during the test. All that was necessary was medium flooding and a confident kick.

Ready to drive away for the first time, I found the impression of the Indian very strong . . . the large, very large, handlebars, deep rumble of the engine. . . . Easing the Ural silently into gear by the heel and toe gearchange I was in for the first of a number of shocks. The clutch was at least as good as that on a BMW and was so light and smooth as to be a joy to use. Naturally I had heard all about the Ural's lack of power and was prepared for, as the road testers say, a leisurely getaway. Obviously a large handful of throttle was needed and I let the clutch out and took off like a scalded cat. My face must have registered surprise, delight and then panic as a corner approached and I went to slow

down. Heavy braking just about got me round in one piece but it was a close thing! We had been warned that the front brake on our model had been damaged in transit and was below par. So it was, but it is clear that even when in good order the front brake leaves something to be desired. Our brake then, below par, left even more to be desired. We have not had an opportunity to analyse the reasons for the brake's lack of power but it has been suggested that hard linings are the trouble. If this is so the cure is simple and ought to be applied quickly.

To return to the initial acceleration that so surprised us. The Ural is a detuned touring machine, designed and sold as such, yet it had an out of character acceleration. Why? The clue came at 60 m.p.h. The Ural was revving hard at this speed, and that did not seem quite right. Returning to the garage a rough count was made of wheel revolutions to drive-shaft revolutions. So that was it, a ratio of approximately 4.25 to 1 was calculated. Sidecar gearing. Using the only guide we had, a BMW solo ratio would be round about 3 to 1 and sidecar about 4 to 1. The Ural, with its 650 c.c. engine, would obviously be happy with a much higher (i.e. lower ratio) rear drive but it is primarily a sidecar machine in Russia and is offered with only the sidecar gearing.

There are swings and roundabouts in this matter of sidecar gearing. It means that an improved rate of acceleration is available, that the machine will pull happily in top gear from a low speed; but the price one pays is worsened fuel consumption (we could not get better than 58 m.p.g. driving gently, and less than 50 m.p.g. driving hard) and possibly increased engine wear because the engine is revving higher than it might for any given road speed. Also, of course, the danger of over-revving is increased. On our model the valves would float at 50 m.p.h. in second and 65 m.p.h. in third. Top speed was just over 80 m.p.h. One imagines that this could be improved by solo gearing but all-out speed, to buyers of the Ural, is the one thing that they will not be concerned with. One interesting benefit from the sidecar gearing is that the machine will pull away from a standing start in top gear. Effortlessly. At 5 m.p.h. in top it was near to the proverbial "firing every other lamppost".

A road-tester can sit down and write pages of technical analysis and reasons why he likes or dislikes a particular machine but, ultimately, only one thing counts. What is the machine like to ride? I had half expected to find that in copying the BMW so closely the Russians might have missed out on that magic ingredient, *character*. Not a bit of it. This machine was as pleasant and smooth to ride as it is possible to have. The engine has no unacceptable vibration periods and will cruise along happily for hours at 55-60 m.p.h. At this speed it

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650 URAL

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sounded a little busy maybe, but so smooth.

The gear-change is, if anything, slightly quicker than the BMW's but there is still the engine-speed clutch, of course, and BMW technique is needed to achieve a quiet change. Unlike the BMW, the Ural would not play ball unless the clutch was used. The heel-and-toe gear-change lever was a mixed blessing for, although it has undoubted advantages in protecting a rider's shoes, the heel part needed, for me, an awkward twist of the ankle and I soon resorted to using my toe for all changes. This was not without its problems for the lever is flat metal, brake-pedal style and soon began to attack the leather on my shoes. There will, on balance, be more Ural owners buying BMW gear-change levers than the other way round.

Handling of the Ural is acceptable rather than race bred. It is not intended that the bike should be pushed too hard, and within limits it is quite happy. The high riding position and well-sprung seat tended to leave the rider floating along quite happily but the suspension played little part in this comfort. Following riders could see no movement in the rear units at all, although they were on the softest setting, and much the same applied to the telescopic front forks. The combination of hard suspension and high riding position suggested that the Ural was designed for much larger men than myself but, overall, I had no complaints about general handling and comfort. At the end of a 100-mile ride, though, the saddle, having had little help from the suspension, was beginning to make itself felt.

Once one became used to the Ural needing to be driven into bends it was possible to motor it smartly although one had to work quite hard to maintain rapid progress. Some will find that leaning the bike into the corner while swaying the reverse way oneself will pay dividends but I have ridden enough miles on older style (i.e., plunger) BMWs to know that it is not as dangerous as it feels when well cranked over. It couldn't be! The same applied to the Ural. To ride it quickly is really a matter of mind over matter. I enjoyed it. My wife, perched precariously on the saddle, tended to grip her own private handle a little tighter though.

The electrics on the Ural are apparently, well made with the six volt 60 w dynamo providing ample power for the 32/32 w headlight. The headlight beam was not quite as good as most present-day 12 volt systems. It would be surprising if it were. It was quite adequate for the type of driving for which the Ural is intended. Ignition is by coil with the coil inside the front timing case. The rest of the ignition

equipment is carried in this case also, which makes a very waterproof home.

The Ural performed admirably during the short time we had it at *Motorcycle Sport*. It is one of those machines whose character remains hidden until the rider really starts to look for it. The engine was not as oiltight as one would expect from a BMW, which is, perhaps, an indication that with the best will in the world, the basic engineering standards of the BMW are not something one can copy on the cheap. Is it fair to expect the Ural to be as good as a BMW? I think not. It sells at £329, far and away the cheapest large-capacity machine on the market in this country today; indeed, it is less than half the cost of many.

One would have to be very naïve to expect to get the same quality for £329 as for over £1,000 even allowing for what is possibly an unreal price due to USSR government subsidy. The question we had to ask was "Is the Ural at this price the best value-for-money machine around today?" Criticize the finish and people will say "What do you expect for the price?" It just about sums up the attitude to the Ural. It is a rugged, unsophisticated workhorse that should give many years of solid, unexciting service. Its biggest drawback undoubtedly is its poor finish but it has the advantage of using a very sound basic design. The conclusion one draws from all this is that if the prospective buyer is prepared to accept the mediocre finish and brakes, hard suspension and sidecar gearing he will find considerable advantages, too. It is smooth, comfortable and will be cheap to repair should much go wrong. On the face of it we don't think much will go wrong and would think that many riders will find the Ural good value for money.

This just leaves us space to comment on the set up in this country. Fred Wells Motorcycles of Romford Road, London, E12, were kind enough to make the Ural available to us and could not have been more forthcoming and helpful. They are well aware of the problems with the brakes and are experimenting with different linings. They have, perhaps, been overwhelmed with the enthusiastic response of the public since the Russian machines were announced and this has stretched their resources somewhat. They have firm orders for nearly 300 Urals and a number of dealers more than willing to sell and service them. The spares situation would appear to be very good, with the Russians insisting on a percentage of spares with the first order. Prices are cheap, too; for example—£3.87 for a silencer and £7 for a set of crankshaft journals (these will be fitted in the Fred Wells workshops using their own press).

The Ural is fitted with sidecar lugs on the right side and the first sidecar, an apparent copy of the old Steib TR500, is due in the country soon. We hope to have the opportunity to sample this.

B. P.

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