

# **MOTOR CYCLE MECHANICS**

**JUNE 1979 60p**

**WIN  
a Kawasaki  
KH400**

**MANIACS GO MANX:**

**24-hour TT test**

**CBX ENGINE STRIP:**

**the mind boggles**

**TESTS:**

**Suzuki 425,  
Kawasaki Z750**

**153mph street  
Suzuki!**

**Honda CB750  
readers' test**









# MANIACS GO MANX



**THERE** are points for and against race track testing. On the mainland of Britain, a circuit is the only place where a bike can be taken to its handling limits in reasonable safety, without clobbering a van or a bus on the way. It is also a place where maximum speeds can be reached in safety and without the risk of prosecution. It is also easier to monitor a 24-hour test at a track, and first-aid is always nearby. Problems of an overall nature, like tyre wear, fuel consumption and so on can also be ascertained accurately.

But no matter how good a race track only test is, it is never quite enough. The motorcycle buyer is also likely to want to know about how a machine is fitted to everyday road conditions such as those he will experience himself, and he might not be so interested in absolute cornering limits as comfort and overall road performance.

There is only one place in Britain where a combination of both types of testing is possible, and that is the Isle of Man. Apart from roads which offer every ►



conceivable type of corner and gradient, it is a place where, once outside the "30" and "40" limits, a rider can do any speed he likes provided he is not a menace to other road users. It is also a place to which many readers can relate thanks to TT Week: when we talk about this corner or that, there is a good possibility that a fair proportion of readers know just where we mean.

The only way to get a fair picture of the four bikes we tested was to allow riders of differing abilities to make up the teams. So we invited Manxmen Roger Sutcliffe and "Kipper" Killip, who will both be travelling marshals this year, to join us. In addition to staffmen Peter Kelly, a long-standing TT fan, Dave Walker and Brian Crichton, there were Brian's brother Colin, occasional MCM tester Peter Hughes, and several riders from the trade represented in our test.

The bikes chosen were Kawasaki's brand-new shaft-drive Z1000ST, Yamaha's mighty XS1100, BMW's latest R65 and Honda's CB650 four. All can be described as serious sports touring mounts, and all lived up to their promises.

A trip of this nature always takes a great deal of organising, and our very sincere thanks must go out to all those who helped. The familiar figure of Shell's Keith Collow made refuelling arrangements go smoothly as usual. A tanker provided by Manx Petroleum was put at our disposal, and the only snag was that we had no really accurate measuring gauges. However, at the end of the session all the bikes except the BMW were filled to the brim before doing one final lap. Then the tanks were topped up accurately at a Shell garage to give us a last-lap average. The BMW's fuel check was over the last four laps.

Steve Thrush and John Peters came from Dunlop; Honda provided Roger Etcell, Brian Butcher and Nick Edwards; Nick Jeffery and Dave Hill represented Kawasaki, and Yamaha sent along Steve Hackett, and mechanics Kevin Giles and Peter O'Connor. Tony Yeomans, and technical staffman Alberto Criscuolo represented BMW (Alberto was the mechanic in BMW's 1973 Maudes Trophy attempt, when they put two R75s around the TT course for seven days

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and nights, so it was familiar ground for him). In addition, S and S Motors of Castletown provided riders.

Every conceivable condition was met with during the test, from busy traffic and the vagaries of Manx drivers to a menagerie of animals on the road, including rabbits, mice, sheep, ducks, dogs, cats, something that looked like a stoat or otter and — Steve Hackett swears — a wolf! Actually it was an unbelievably ugly farm dog in the Tholt-y-Will section, because Kelly saw it as well! The weather also chuckled everything at us in true Isle of Man style, ranging from brilliant sunshine to drizzle, rain, sleet, snow, and even a touch of heavy mist. The night riding was bitterly cold, with snow lying on the road from the Bungalow to Creg-ny-Baa at one stage. Even the roads gave a mixture of everything. It wasn't enough to know which way the corners went: it was just as important to be prepared to alter course as a car backed out of a driveway, or a drain-cleaning machine suddenly appeared in front of you.

It was a complete test, bringing up exactly the conditions the potential buyer might expect — and we're glad to say that it worked.

The original idea was to circulate the TT course for 24 hours, but an exploratory lap around the circuit by Peter Kelly on the road test 425 Suzuki twin (report in this issue) revealed that roadworks at the Bungalow were still in progress, having been delayed by snow, and the road was effectively closed.

Ah well, back to the drawing board! The next idea was to use the TT course as far as Sulby crossroads, then to turn right using

the spectacularly beautiful, but extremely tricky, mountain road from there to the Bungalow, through Tholt-y-Will Glen. Although this shortened the route by some 5½ to 6 miles, we lost little of the TT course except the climb out of Ramsey, and gained a really tricky little route with two severe uphill hairpins, tight little corners, sheep grids and gates. If anything, it gave us an even better test.

Although the daylight hours were fine and sunny, the weather quickly deteriorated during the evening, and at 8pm heavy snow between Tholt-y-Will and Creg-ny-Baa made it almost impossible to keep visors clear. Snow had even begun lying on the roads. However, it quickly cleared and we managed to stick to the course throughout the test, and when the sun came up on Wednesday morning, the weather again improved.

Each machine covered well over 1,000 miles during the test; there was no machine bother to speak of; and no accidents. The touring bikes all lived up to their promise, and everyone involved was very satisfied with the results.

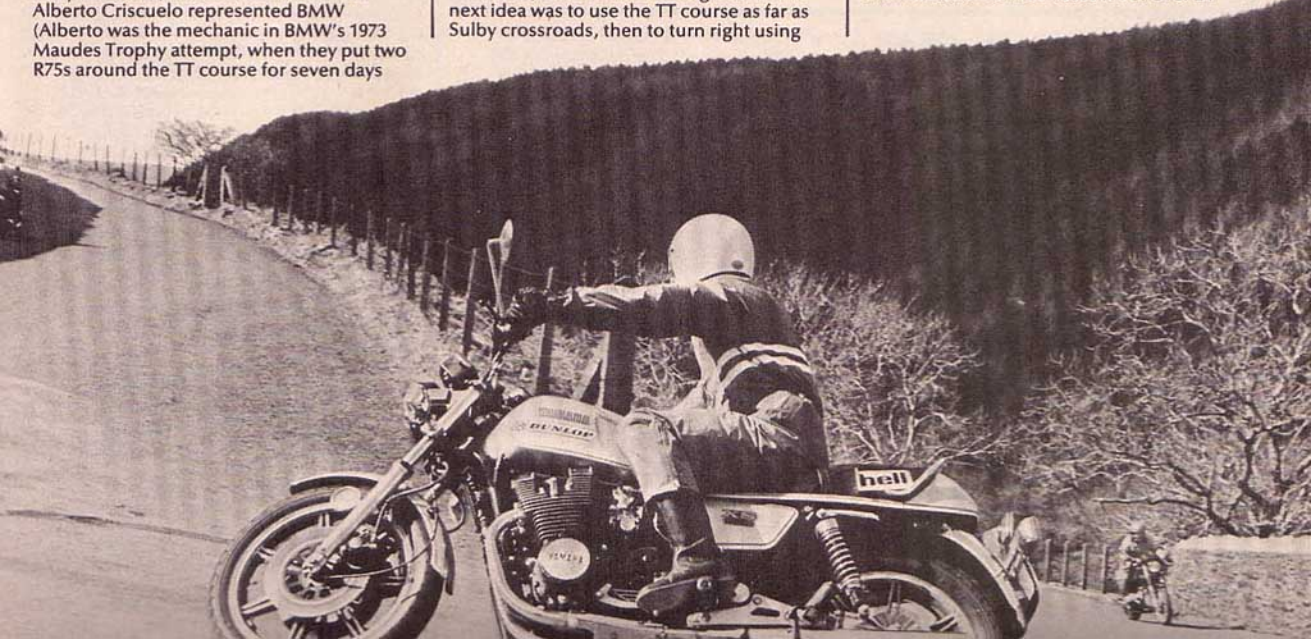
There are a thousand stories to tell. These are just a few of them:—

## Kawasaki Z1000

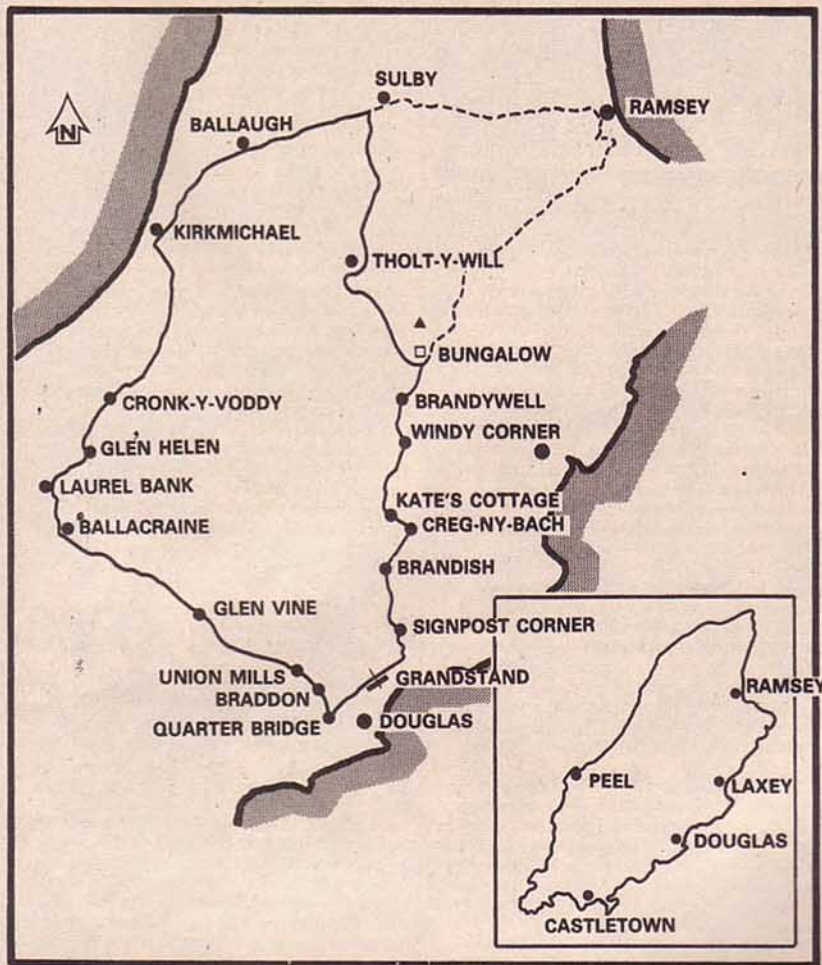
**Riders:** Peter Kelly (editor), Nick Jeffery (manager: consumer services group, Kawasaki), Dave Hill (executive: consumer services group, Kawasaki), Alan Killip (loM TT marshal).

THEY used to say that the big Kawasakis were hinged in the middle, even though their 900cc and 1,000cc four-cylinder engines were potent and virtually indestructible.

The old spectre of bad handling has now been laid with the introduction of their luxurious shaft-drive Z1000ST. For over 24







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hours of testing the big shaft bike proved itself in every way.

It was, as might be expected, smooth, refined, with a huge reserve of power and excellent handling. The new seat profile, with a distinctive dip at the front, made for an armchair-comfort ride, and there was no soreness at all after more than 4½ hours and 200-plus miles of continuous riding. Apart from an occasional buzz from the headlamp — and that will be explained later — vibration was non-existent. The shaft mechanism worked so perfectly that one could be forgiven for thinking it was a chain-drive bike. At no time did the gearbox give the slightest "clunk", and the motor, giving a claimed 11 bhp more than its predecessor, was so flexible that most of the time gear changing was just for fun. Out of the ultra-steep hairpin from Tholt-y-Will, the bike found plenty of tractability even in third gear.

Most of the time, because of rain and snow, braking had to be delicate, but the much-improved sintered brakes gave instantaneous bite in both wet and dry, and could be used with great confidence. Painting the picture too rosy? Not at all. For rarely have I stepped off a big bike with so few signs of discomfort or weariness — even after seven laps between 4-30 and 9am, in far from perfect weather.

Some time after 9am the headlamp bulb blew — twice — and later a fuse was replaced. How come, if the bike's so smooth? Well, the headlamp rubber mountings had been removed to make way for the two extra spotlights, and the high-frequency buzz mentioned earlier was sufficient to do the rest.

It's a pity, really, that the extra lamps had been thought necessary at all, because for most of the time I found the headlamp full beam perfectly adequate for 70mph night riding. It was possible to average 70 and 80 mph through twisty sections of the circuit without paying any heed to the gearbox. You could just leave the bike in top, rolling the throttle on and off a fraction to meet most circumstances, and lose hardly any recovery time at all. There was all the torque and acceleration any touring rider could possibly need between 4,000 and 5,000rpm. With a red-line at 9,000 — and Kawasaki's

Dave Hill admitted to over-revving to 10,000 and even 11,000 — there was always a massive stack of power waiting in reserve. Feedback from the road was excellent: the Kawasaki gave a taut feel and never did anything unexpectedly. Even when airborne at 100mph on the steep and bumpy drop to Creg-ny-Baa, the bike always seemed to hit the road squarely and without drama. Dave Hill was even pushing it to an indicated 120mph-plus on the smooth drop from the Creg to Brandish, again without incident.

The first rider to take out the Kawasaki was Nick Jeffery. He did a couple of laps on the Glen Helen-Bungalow route and a further couple across Tholt-y-Will. He handed over to Dave Hill for a short spell before "Kipper" Killip, who rode a Honda CBX during last year's marshalling duties, took over.

"Kipper" had never tried a Kawasaki before. He stuck to the route until I took over at 7.30pm, and later gave it the ultimate acclaim by saying it would make a great TT marshals' machine. He swore that a massive "dab" at the Tholt-y-Will hairpin was merely a propping-up exercise because he did not like cornering upright! Kipper knows the TT course probably better than anyone, and pushed the Z1000ST hard. But it gave him no anxious moments at all and he came away impressed. When I took over it was the first time I had swung a leg over the machine since the quick try-out in Malta last year. I quickly became used to the bike, which seemed huge after stepping off the 425 Suzuki. Even before Ballacraigne on the first lap I was brimming with confidence with the feel of it.

Through the twisty Glen Helen section, its manners were impeccable, and despite the considerable power at hand it never felt vicious. It began to rain just before Kirkmichael, however, and by Sulby there were flakes of sleet in it.

Between the mountainsides of Tholt-y-Will the weather did not seem to worsen — but after the two hairpins, it suddenly became thick driving snow and the road was "whited out". I reduced speed to a crawl, lifting my visor every few seconds to see where I was going. The snow was driven horizontally in exposed areas, and it seemed this section would soon have to be abandoned. All the way down to the Creg the conditions persevered, and only by Brandish was it rain again. I called in at the pits to explain what had happened, and waited for Dave Walker to arrive on the big Yamaha. We decided to give it another try, and luckily by the time we reached the section again, the snow, although still falling, had moderated. Each lap thereafter — and I did five — it got gradually better up there, and by 11.30pm it was back to rain again.

One has to be cautious about pub-closing round about 10pm, for suddenly the Manx roads seem to be full of returning cars. Concentration was needed to the full, but the Kawasaki was so easy to ride it really was possible to forget the machine and concentrate on the other happenings. This little road was incredibly rich in wild life, especially at night-time. But although it was immensely satisfying to see such a rich variety of animals, it also meant keeping an alert eye all the time.

The Kawasaki was so easy to ride that, once into the swing of it, I could have just gone on for lap after lap. I was scheduled to



come in after five circuits, but eight would have been no problem.

During the night, I discovered the difference between thinking you know the TT course and really knowing it. Roger Sutcliffe took the big Yamaha past at a thoroughly indecent speed and vanished into the distance using a perfect racing line. And the Kawasaki wasn't hanging about, for it had already passed both the BMW and the Honda.

I had noticed a slight weaving sensation at the front end of the road ripples and ridges along the fast stretch towards Ballaugh Bridge. The sensation was not unlike having a puncture. But as soon as the road smoothed out the Kawasaki was as steady as a rock again. I had noticed this on Kawasakis before, and dismissed it as just a quirk of the standard tyres.

When I returned to the pits at 11.25pm, Dunlop had arranged a tyre change to Red Arrows anyway, and on my later ride the bike was transformed. There wasn't the slightest weave at this or any other section.

It transpired that the Kawasaki's original tyres were fairly well worn when the test had started which had helped to transmit the road irregularities.

After handing over to Nick Jeffery, I snatched a quick couple of hours' sleep at the Villiers Hotel, our headquarters, before returning to the pits at 4.15am. The bike felt exactly the same as before. Nothing had deteriorated, and it was still as sweet as a nut. The oil level had been checked twice, but such a minimal amount had been used that it was not considered necessary to top up.

Although the track was wet and slippery around Kirkmichael, the snow at Tholt-y-Will had all but ceased falling. It was there, but no longer a threat. By now, however, a slight coating had been laid on the main TT course between Brandywell and Kate's Cottage, especially at the last left-hander before Kate's, and it was necessary to take these bends with caution.

After two laps, the countryside began stirring awake after the long night: hills were outlined against the early dawn, and it was possible to discern the faint colours of fields and cottages. It is always a magical moment on a big motorbike, and this was no exception.

Although I had been advised by Nick to come in for refuelling after every three laps, I was not using anything like maximum revs, and there was a perfectly adequate range for four. Twice during the night I did continuous 128 miles stints without even going on to reserve. However, the petrol gauge was just a bit off-putting. It would show almost full for the first two laps, then go down a little on the third, and finally suddenly slump to nearly "empty" on the fourth.

My final lap was the fuel consumption test at the end, when the Kawasaki used exactly one gallon for the 33 miles. It did not go as smoothly as I'd hoped, because a tuse blew along the straight from Quarter Bridge to Braddan, and I lost some five minutes effecting repairs. I had noticed, too, that the fuel gauge was not working, but I later discovered that this had been purposely disconnected by Nick Jeffery when the headlamp filament blew. These slight problems in no way distracted from the Kawasaki's instant appeal as a sensible, luxurious, smooth and powerful



Manxman Alan "Kipper" Killip hustles the Z1000ST down from the bungalow.

long-distance tourer.

Apart from the inevitable "incidents" on the road when you embark on this kind of test, the Kawasaki provided a refreshing and enjoyable ride.

One of these incidents sticks out above the rest. I had a frightening moment during the early morning as I headed down to Ballacraigne at a fair rate of knots. Suddenly, I saw a man crawling across the road on all fours, wearing a white shirt and green trousers. For an awful moment I panicked, wondering what the hell was going on while standing on the brakes. Then I discovered that the "man" was three ducks waddling across. I was certain I was going to hit them, but there was a sudden awful quacking and fluttering, and a dark shape flew across my visor!

The Z1000ST is not just yet another updated version of an old favourite: it's a brand new bike from the ground up. Kawasaki's engineers have produced a smoother, faster, more comfortable and better-handling big four than at any time in the past. For a start, the engine produced a claimed 10 bhp more than the old chain-drive Z1000 model — and these changes have also been incorporated into their new chain drive version too.

New 28mm Mikunis — the last versions were 26mm — and a new exhaust system have upped their claimed bhp from 82 to 93. The cylinder head is different to meet the latest US specification, and although primarily designed from a low-emission point of view it also has a better porting shape.

The crankshaft has been beefed-up, even though there has never been anything to suggest that the old crank would not have coped perfectly well.

The gearbox is similar to the standard version, but a number of shock absorbers have been incorporated because of the shaft drive.

The frame is brand new also, and has a large box-section swinging arm on taper roller bearings. The shaft runs up the centre of the left-hand arm.

There is new, better rear suspension — and this was borne out in our Isle of Man

test — and the steering head now has taper roller bearings in place of the previous cup and cone version.

The new sintered disc brakes work almost as well in the wet as they do in the dry.

All in all, it's Kawasaki's best big "four" yet.

Peter Kelly.

## BMW R65

Riders: Brian Crichton (staff member), Colin Crichton (invited rider), Tony Yeomans (BMW zone manager), George Short (S and S Motors, Castleton, IoM), John Peters (Dunlop chief tester), Mike Staley (S and S), Andy Dubost (S and S).

INTRODUCED in 1978 BMW's 645cc R65 has generally been construed to be smaller and lighter than the bigger displacement models in the BMW range. In fact, according to BMW leaflets the R65 weighs more than the R80/7, the R100T and the R100S. In other words at 452lb dry it is the third heaviest of the seven-model range.

To make it appeal to a wide cross section of the public BMW made the seat height lower on the R65 (and R45) than on the bigger displacement models. Yet the R65 still has a fairly tall seat height. Of the four bikes in the 24-hour test it was the second tallest, the awesome XS1100 Yamaha taking the "honours" here.

Its wheelbase at 54.75in is 3.25in shorter than the bigger BMWs and this factor is probably the main reason why the R65 is easier to negotiate through tight bends. With regard to fuel consumption the R65 cannot offer much more than its bigger brothers. Even at steady touring speeds it can barely reach 50mpg. While circulating like clockwork for the 24-hour test it gave 42.4mpg. From previous experience with the 1000cc models they could have equalled, and possibly bettered these figures.

In other words, apart from a lower purchase price and slightly different looks, the new R65 offers little as an alternative to the bigger BMWs. But for all that, like its



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big brother it is still a first class motor cycle displaying the same kind of long distance touring capabilities.

After taking delivery of the BMW the day before the 24-hour test commenced the R65 gave 48.5mpg while carrying out a sedate two-up reconnaissance of the Isle of Man. This preparation was in order to calculate how many laps could be tackled non-stop before refuelling was necessary, since, apart possibly from comfort, the range of the 4.84gal tank (including 0.44gal in reserve) was the only advantage the BMW might be considered to hold over its rivals.

As you will have already read the route we followed was forced to deviate from the TT course (see map). I had calculated the night before that at fast touring speeds the bike should return a minimum of 40mpg and thus a total minimum range of 192 miles including reserve.

I was the first rider out at the start of the full day's run and after 160 miles had dialled up on the trip meter I rode past the Grandstand to start what I knew would be my final lap.

Alberto Criscuolo, BMW's services technical manager who had flown over from London to supervise the BMW, tried to wave me in. He let out a loud wail as I cruised past in the 30mph restricted zone. Apparently he was convinced I was going to run out of petrol. While I began my final lap of the first stint he apparently rushed around to find a gallon can of petrol to chase after me, then thought better of it and decided to sweat out the next 35 minutes at the Grandstand pit area.

The machine ran on to reserve with 171 miles up. "There's about 20 miles left in the tank," I thought as I tried to calculate how many miles were now between me and home. At 40mpg it left 17.6 miles range to be exact if the bike was running at 40mpg. I felt sure it was a little more economical than this and thought I would not sacrifice speed for the sake of consumption. After another 15 miles it was my turn to sweat. Was I going to blow the test right at the start by running out of fuel? Twinges of compunction shut the throttle where normally I would have kept it open. Thankfully the BMW rolled into the pits with 191 miles up — the tank perilously close to dry.

At least the BMW had a head start on the other machines which had all stopped for refuelling. Unfortunately the cold weather and snow and rain during the night dictated that it was unfair to expect other riders to sit for six laps to make full use of the range, which as it turned out could be equalled by the 650 Honda. When my second turn came round again at 1.45am and I rode for four laps — one when it was snowing and foggy on the Mountain — I was glad to get off because I was getting cold.

Just before that second stint Mike Staley from S and S Motors of Castletown, the BMW dealer who supplied the bike, came in with the rear light assembly and indicators



Brian Crichton negotiates the hairpin at Tholt-y-Will on the 650 BMW.

being dragged along the road by the wiring loom. Our first reaction was to suspect a tumble somewhere in the darkness. In fact the light unit fell off only a hundred yards before Mike pulled in after a two-lap session. The bike was refuelled while BMW zone manager Tony Yeomans and Mike's business partner George Short robbed a light unit off an R80/7 to get the R65 rolling again. It cost about 15 minutes and was the only problem the bike gave. As you can see from the distance covered chart the BMW finished hard on the heels of the Yamaha.

It could be argued that but for this incident the BMW would have bettered the Yamaha. But then again the Yamaha team could have also argued mitigating circumstances in favour of a wide "winning" margin. The same could be said for the other bikes. The point is that it was *not* a race. It was a reliability run from which demonstrated in this case that large horsepower advantages do not necessarily represent that much of an advantage over a long road distance. All the bikes finished within 37 miles of each other. Speed restrictions in towns, the vagueness of some of the Manx drivers (may they forgive me for saying so) and general hazards of road riding cut down enormously on the opportunities to give an over 80bhp motorcycle, such as the XS1100, its head.

The BMW scored in having generous ground clearance for fast, tight corners. It was a pleasant machine in top and fourth gears giving a comfortable ride even though the machine featured a characteristic four-stroke throb. Mike Staley commented: "It vibrates like b-----." In fact the vibration caused no discomfort. After the first 191-mile stint I was free from all aches and pains and pleasantly surprised.

In my particular case the riding position was too "large". I found myself slipping to the back of the rider's half of the seat and consequently having to pull myself back up again. Aggravating matters was the fact that I had left the rear units on their hardest preload setting and this gave a harsh ride on the Island's bumpy roads. Over some sections, particularly where the machine was under acceleration I was out of the seat more than I was in it and the bars shook from side to side under my tight grip as the

front wheel skated over the ripples.

Putting the units on the softest position after the initial ride relieved the problem enormously. Meanwhile the seat was becoming more and more compressed. From my point of view it improved matters, giving a better riding position and reducing seat height. The sunken seat was still comfortable, even at the end of the test by which time the seat featured two deep creases which seemed to be permanently inscribed.

Suspension movement on the R65 is less than on the bigger capacity BMWs, lending a more sporty feel to the 650 in that suspension is firmer. Grabbing the front brake uses up the full fork spring travel of just under seven inches, and gives the rider good feel with the road surface.

Andy Dubost was impressed with the gearchange compared to previous BMWs which did not feature the new torsion damper in the shaft. In the lower gears the drive is still very direct, lifting the rear suspension as the power is applied. The car type clutch is a significant factor in this sudden drive take-up but as Andy says, the gearchange is much improved. In fact it slots down to fourth from top so neatly that it leaves the rider wondering if fourth has indeed been selected. I found myself going into some corners and just toeing down the lever without using the clutch to have that little bit extra acceleration available when exiting.

When cranking through tight bends the R65 retains the mould of its larger brothers in that it requires definite orders to bank it from vertical. John Peters said it was a difficult machine to get used to. Through the tight first and second gear almost trials type corners of Tholt-y-Will he reckoned it was the hardest of the bikes he rode to get round.

I believe that the reasons for this were: a) the nature of the machine's handling as mentioned in the previous paragraph. b) the directness of the drive. c) a slightly sticky throttle control. d) two handfolds were required to either open or close the throttle fully.

It was difficult to get through Tholt-y-Will smoothly because the throttle control was not silky. And because the machine was in





Guess where? Colin Crichton takes Ballaugh Bridge on the BMW.

low gear opening the throttle immediately jerked the bike forward, at the same time lifting it on its suspension which had the effect of trying to straighten it up from the cranked position.

Reason d) proved to be quite significant throughout the test. To gain maximum acceleration where possible the throttle had to be opened fully with one movement of the hand. This entailed exaggerated sweeps of the elbow which must have looked quite frantic through the eyes of a following rider. Likewise shutting the throttle fully required a large backsweep of arm movement. With touring gloves on it was impossible to stop them furling round the twistgrip. The result was that sometimes the throttle was not fully closed and so when the next gear was selected and the clutch lever dropped there were already too many revs which gave a sudden lurch forward, a squeak from the torsion damper as its cam twisted against the ramp, and on one occasion a wheeie when changing from first to second.

The BMW was most at home in top gear through bends where the rider could see the exits. This avoided panic measures half way round. At night I misjudged one corner slightly when in fourth and more out of spinal than conscious reaction stabbed down into third. The back tyre squealed for a split second and the tyre broke away just a touch. It reminded me that BMWs can chastise riders severely if they do not get their cornering homework right.

During the night the small quartz halogen headlight gave a surprisingly good spread of light. The blade dip switch on the left bar, hidden throughout the test by handlebar muffs to keep out the cold, was easy to operate — though John Peters complained that he could not find it. The only problem rose when cranking over fairly hard. The beam then had the effect of being "drawn in" thus reducing the distance that could be seen ahead. Obviously the same happened when the front brake was used hard and pulled the forks down.

I found that the rear drum brake did not quite have the feel I would have expected from it. When braking heavily the front discs, which were rather too easy to operate too severely at slow speeds, threw the weight bias forward leaving the back wheel

light. Often the first I knew that the back brake was actually working was when I could hear punctuated squeals from the back tyre as it hopped over rough road surfaces.

On the subject of wheels the Dunlop staff said that should the BMW require wheel removal both were easy to pull out. BMW have thought about this by balancing the machine so that when on its centre stand light finger pressure can tip it to rest either on its front or back wheel.

As the tyres wore towards the end of the test they did affect handling slightly. A series of grooves in the road just before Ballaugh had the BMW's head nodding from side to side. I had not really noticed this too much early on until Colin Crichton pointed it out. Or rather I had dismissed it as road irregularity rather than anything to do with the tyres. Later conversation with the Dunlop representatives confirmed that worn tyres would accentuate the characteristic.

What I did expect from the R65 was a speed weave, having experienced this tendency, although very slight, on a model I rode on the Continent last year when it was first introduced. Down the flat-out run from Creg-ny-Baa it never happened, even though the needle once reached 112mph.

Performance from the pushrod engine was very respectable. With the ability to rev into the red band drawn at 7500rpm, surprisingly high, the engine gave a wide spread of power which allowed it to tick along at 1000rpm in top gear and still pick up smoothly. At 50mph it was revving at 3250rpm and at 70mph revs were 4200 when the engine went through a slight rough patch. This at least served to let the rider know when he was at the mainland maximum speed limit — irrelevant on the Island — without having to glance at the speedometer. By 4500rpm the roughness had vanished but it always appeared whether the engine was building up or dropping rpm.

At the start of the test oil level was a little over the maximum mark. By the end of the 24 hours it was just a little above the halfway point between minimum and maximum. Though it was not measured it had probably used just over half a pint. Alberto Criscuolo

warned about the dangers of overfilling, which he said would result in too much crankcase pressure. The crankcase breather makes a strange "glugging" noise when the engine is full, audible at low speeds only. Once the oil level drops this stops.

Before the test started tyre pressures were checked. According to the information stamped on the rear mudguard these are: front 27psi and rear 26. Surprised that the front required more than rear we pointed this out to Alberto when he arrived. He informed us that this was wrong and should have been 27 front and 29 rear. That made us even more surprised. BMW do not usually stamp mistakes on to their bikes.

Alberto refused the Dunlop representatives permission to put Red Arrows on after 12 hours. This he did because of company policy. Dunlop have applied to the BMW factory for Red Arrows to be listed as permissible replacement tyres to the recommended Metzeler and Continental tyres fitted as original equipment. They are presently awaiting an answer.

Another interesting point is that the government has asked BMW to stop the fitment of "beeping" indicators to their machines. According to government officials they could be mistaken by a blind person for the noise made by a pelican crossing. The bike on test beeped and I was grateful for it. The noise gave an audible warning to other road users that I was there too and on the point of changing direction. In fact at town speeds the beep was noisier than the pleasant exhaust note. I swear that one lap nobody noticed me as I waffled past the pit area because on the overrun the exhaust was so quiet. All the bikes were the same and it is thanks to the efficient silencing that we were able to run day and night at a brisk pace without causing a nuisance to the Manx residents.

We did not spend too much time looking into our rear view mirrors during the test, though the odd glance to see if some of the quite fast car drivers on the Island were joining in the fun did not go amiss. Unfortunately BMW do not furnish large enough mirrors, nor do they have sufficient adjustment movement for good rear observation.

At the end of the test the engine was oiltight, though the valve clearances on the left cylinder sounded in need of adjustment. Under the circumstances of the test a quick action throttle would have made life a little easier — though the BMW cannot be said to have made any of it hard. For the touring rider with a sporting instinct the R65 is a worthy extension to the BMW range.

Brian Crichton

## Honda CB650

Riders: Peter Hughes (invited tester), Roger Etcell (Honda publicity), Brian Butcher (Honda mechanic), Nick Edwards (Honda mechanic).

THE prospect of riding Honda's new 650 during a 24 hour test around the TT course was certainly an appealing one. When the 650 was on test to the magazine earlier in the year, the weather conditions were so bad that the full potential of the bike could





Preparing the Honda CB650 at the Grandstand

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never be realised. The test on the Island seemed the ideal opportunity to have another crack at the bike, which by coincidence was the same one as we had tried previously.

At 12.15 the bikes were flagged off and in company with Dave Walker on the 1100 Yam, Nick Jeffery on the Kawa and Brian Crichton on the BM, I set off down the Glenclutcher Road and Bray Hill to Quarter Bridge. Going the correct way around the roundabout, which the racing boys don't, the bikes entered the derestricted zone and I think we all felt that the test was finally under way. Following the famous TT course over Bradden Bridge, through Union Mills and Glen Vine down to Ballacrine, the bike felt really nice. The riding position felt positively comfortable, although as a personal thing, I would have preferred the footrests a shade higher. The only vaguely unpleasant feeling was the way the bike twitched over ripples in the road surface between Glen Vine and the Highlander. This was probably due to it still wearing the original Japanese tyres, which in all other respects gave no problem whatsoever.

We had decided that we only needed to stop to take on fuel every six laps as the Honda would probably do almost 50mpg and it had a 4 gallon tank. Initially though, we decided to start off by doing just four laps and then decide how we felt.

All in all, Roger's ride was pretty uneventful and he pulled in after doing four laps and adding 128 recorded miles to the tally. The only problem that he'd had was

losing a footrest rubber because he had sheared off the retaining bolt, so, while the bike was being fuelled, Brian Butcher replaced both footrests.

Nick Edwards took over the next stint and had a fairly easy ride, handing over to Brian after three laps. Brian's ride took him into the darkness and at the end of it, before handing over to me, he made a quick check of the chain adjustment.

I set off at 8.40pm on what was the first of my real laps, and in darkness too! The Honda mechanics had fitted two Cibie spotlights to the bike in order to improve vision during the night and they certainly made a big difference, lighting up the road way ahead. One of the things that struck me most about the circuit going out this time was the change in road conditions over different parts of the course. Some parts of the road were quite dry, while others were very, very wet. Along the Cronk-y-Voddy, all the snow of the morning had disappeared and the road surface was almost pleasant. Through Barregaroo and past the thirteenth milestone, the bike felt absolutely great. Entering Kirkmichael, the lights picked up thick snow on either side of the road although the road itself was clear. The trees before Ballaugh Bridge and again towards Quarry Bends, were interesting because while the powerful lights picked up the trees on either side of the road, they picked up very little above about ten feet high and left one with the impression that one was riding through a tree tunnel.

Most of the mountain section was covered with a sprinkling of snow and riding was beginning to be a cold business. Having got up to Brandywell and Windy Corner, the lights of Douglas could be seen welcoming below and the long drop into the town started. Down from Kate's Cottage to Creg-ny-Baa was a fast drop and my reaction, riding along this section and on to Brandish Corner, was that it seemed almost impossible for even a road racer to clock up a speed in excess of 190mph along here.

After the next downhill section to Hillberry and on to Signpost Corner came the lovely feeling that I had almost completed a lap. One more lap and I handed over, not reluctantly, to Roger.

Once again, riding down from Keppel Hotel, I couldn't help a moment of admiration for the really fast riders who hammer down this section of the course. Braking for the left hander at Brandish I noticed that the lights weren't as bright as they had been and braking was obviously making them even dimmer. Despite keeping the revs right up, by the time I had negotiated Signpost and the Governor's Bridge section, a dribble of yellow light had just about enough energy to fall out of the headlamp shells.

As I handed over to Nick Edwards, we connected the front brakelight switch and Nick went off deciding to keep the revs up in an attempt to recharge the battery. As a precaution, Brian put another battery on charge ready to change the next time Nick came through. The Honda generator puts out 170 watts but I suppose running a 55/60 headlamp and two spots of 60 watts apiece, plus indicators and stoplights, it was getting a bit near the mark. As things turned out, the alternator coped and the spare battery wasn't needed. Nick rode into the day, which he seemed to thoroughly enjoy.

When I took over again for my last stint, despite the fact that it was a pleasant change to see where the road was going, I must confess to being horrified on a couple of occasions to see for the first time — (as I hadn't seen most of the course in daylight) what would have been my fate if I'd run out of road.

The rest of the laps were completed by riders who, despite being increasingly tired, were still enjoying the bike.

I liked the bike very much. It was comfortable and untiring to ride even under the conditions that we experienced during this test. The twin discs on the front, together with the light action of the brake lever, gave a lot of confidence in the brakes and they were up to anything this test chuckle d at it. The back drum brake was a lot less positive and had a rather woolly feel to it. A criticism that I always seem to make of Honda as concerns the twistgrip action and this 650 was no exception. The throttle needed two big bites to get it fully open and in heavily gloved hands, this was not easy. Within the limits that the test imposed, the handling of the Honda was superb and generally the bike was so responsive and easy to ride that there is very little to remark on.

The bike returned 48.5mpg giving it a range of almost 200 miles, and it used less than half a pint of oil. The tyre wear was quite interesting. The original Mag Mopus tyres both running at 29psi, covered the 12 hours and 576 miles of the test. The Red Arrows, again at 29psi, were on for the last 12 hours. The feel of the Red Arrows was great, although in fairness, the only criticism of the Mag Mopus tyres was the way they wanderecl over a changing road surface.

All in all the test was very enjoyable, despite the conditions, and I'm now looking forward to a return trip to ride on the Island and also looking forward to trying Honda's 650 on the track.

Peter Hughes



# Yamaha XS1100

Riders: Dave Walker (staff), Roger Sutcliffe (I.O.M. TT Marshal), Steve Hackett (Yamaha Publicity), Kevin Giles (Yamaha Technical), Peter O'Connor (Yamaha Technical)

"YOU'RE sure it's not a race?" queried Kevin Giles; he had been looking at the huge spot-lamps bolted to the Kawasaki. As he spoke two Honda men were pulling their 650s wiring apart, to fix up some lamps stolen from their van. In theory the idea of the additional lighting was to aid safety, not increase speed during the night.

On the same grounds the Yamaha XS1100 was sporting a set of Red Arrow tyres. They had, it was claimed, been fitted to several 1100s on the road test fleet so the bike could not really be considered non-standard. An initial spin on the bike the night before the test proved that the big square light on the Yamaha was more than up to the job on the I.O.M. twisting circuits. The motor felt crisp, the suspension a little soft and the brakes a trifle spongy.

Before the start the brakes were bled and the engine oil drained, to be replaced with Shell lubricant. Peter tried the bike up the road and thought that the new oil had helped the gearchange a little; the XS1100 isn't renowned for its smooth change. The brakes remained exactly the same in spite of the bleeding operation.

Before the off my Yamaha team got together to sort out the order of riding, and how much each individual wanted to do. Kevin and Peter said they would only do a couple of laps each because they intended to stay awake the full 24hrs just in case the bike gave any trouble, or there was any crash damage. Roger (Sutty) Sutcliffe had taken two days off work and was dead keen — I think he would have done the whole 24hrs given half the chance. Steve Hackett wasn't quite so enthusiastic, he claimed not to have ridden a bike for some time and he wasn't too happy about riding around the island in the dark. We think that some of the hairy stories about the island circuit, going around the bar the night before, had got at him.

I started the jaunt for the Yamaha effort and cruised the Yo-Yo circuit until we got the word to go. Nick Jefferies took off like a scalded cat and I stuffed the 1100 up his silencer and tried to stay there. If I had dropped back more than a couple of feet I would have found the BMW's front wheel grinding away my tail light.

Through the Tholt - y - Will section I was having a lot of trouble staying with the Kawasaki. The Yamaha was getting altogether too lively over the broken road surface — if the road wasn't badly broken I was sure it would be after a 24hr pounding from the heavyweight Yam. Nick looked quite at ease with the 1000 shaft soaking up the road and while he was going quickly, he was obviously still in full control and keeping to the correct side of the road.

On the Yamaha I wasn't sure if I was pilot or passenger, then the stand dug in and fired me across the road towards a stone wall. Once I realised that I was not in total control I let the Kawasaki slip away up the mountain. Once over the top at the Bungalow the green meanie was some two hundred yards ahead and it remained there for the rest of the lap. On the drop to Creg -



Dave Walker (Yamaha XS1100) leads Peter Hughes (CB650 Honda) at Creg-ny-Baa, while Peter Kelly (scouting on the 425 Suzuki) follows a lorry towards Kate's.

ny - Baa the 1100 was quite lively and I remember thinking that the brakes were not really up to the racing speeds of which the motor was capable — around 600lb is a lot of weight to drag back once it's moving at over 100mph.

Into the pits for the first rider change and we had to queue for petrol because the Kawasaki had arrived just ahead of us. I thought there might be something of a traffic jam when the BMW and the Honda caught up, but in fact Brian on the Bee M carried on for the equivalent of six laps — something Brian described as: "an obvious play"; trying to make the long range tank of the 650 twin pay off, because the motor lacked outright power.

By the time Steve Hackett had gotten into his riding gear and the bike was fuelled, we lost thirteen minutes in the pits — much too long. Steve's stint lasted for three laps and there was a decided lack of feed back regarding the bike and the circuit: "a bit hairy" was his only comment.

As Steve came in Roger Sutcliffe was all but climbing on the bike before it had stopped rolling. Fuelling and a quick check on the oil level took six minutes, then Roger was away for three very rapid laps. Roger's first impressions of the bike were rather guarded in the handling department: "it handles okay", was his only comment. However, on the engine side he was really enthusiastic, praising the pulling power of the motor and saying that it didn't really need a gearbox. Without any prompting Roger also raved on about the Red Arrows, to quote Roger: "they are fantastic for a road tyre".

On my first stint I had not been too happy with the rather soft suspension and there was also a tendency to wallow on the fast sweeping bends over the mountain. Kevin suggested we "jack up" the suspension one stop, for both front and rear springs. The improvement was immediate. Although not completely eliminated, the wallow could now be ignored and some really enjoyable

bend swinging indulged in. The whole bike felt much "tighter" and easier to ride.

After the left hander at Kate's Cottage, the road just drops away. It really is like "falling off a mountain". The awesome power from the 1100cc motor combined with the force of gravity to provide the sort of acceleration that could only be described as "mind blowing".

The uneven road surface and the slightly harder suspension meant that you had to work to keep the bike on your side of the white line. About half way down there is a dip in the road, and with a slightly higher approach speed and harder suspension the bike was actually taking off at over 100mph. Brian Crichton, on the BMW, found that the front wheel of his mount was getting airborne in the same place. However, he also discovered that if you move to the right of the road you miss the worst of the "ramp" and both wheels remain in contact with the road.

Apart from the odd fright, when you took a bend that you recognised — only to find that you were not where you thought you were, the laps were becoming routine. When I came across the BMW at Glen Helen I remembered what we were all doing on the island and started to press on once more. However, on reaching the mountain I was in for a surprise; it was snowing. The flakes were settling on my visor and visibility was reduced drastically. All you could do was follow the line on the side of the road, riding with a precautionary foot stuck out around the bends. I have never experienced changes in weather conditions such as the Isle of Man produced. At one time it was sunny in Douglas, but raining at Kirkmichael. One lap later the conditions were reversed — with snow on the mountain thrown in just for good measure!

During the night the two Yamaha technicians, Kevin and Steve, stepped in and did a lap each which provided a welcome breathing space for the regular riding team. Roger Sutcliffe went out



# MANIACS GO MANX

around four in the morning and did a double stint, clocking up seven laps and only stopping for petrol. When he finally stopped Roger said that the handling was 100 per cent better than the first time he rode the bike and that he was really looking forward to trying a few "quick" laps in daylight.

Come the morning Steve Hackett was waiting for the bike to come in when he told me that the Yamaha was miles ahead of everything else. According to the trip meters we were about 200 miles in front of the Kawasaki. Steve set off at a leisurely pace to do a spot of sightseeing.

In the meantime I was trying to work out how the Yamaha had made 200 miles on the other bikes. The BMW had suffered only one minor delay when its tail light came loose and the Honda had only taken ten minutes to change both the tyres. I started checking the figures from the main speedo reading and comparing them to the trip. Somehow our trip meter had "jumped" over 100 miles!

It was panic stations now and I ran for my riding gear. Steve was down to half speed and lost a full lap in just one hour! Waving him in we topped up with petrol and I took off after the BMW, which had just left the pits ahead of me. The Yamaha men were left arguing among themselves as to the correct mileage.

On the de-restricted stretch of road between Union Mills and Glen Vine, the Yamaha left the Bee Em for dead, but while waiting at the Ballacrairie traffic lights I could yet again hear the infuriating "bleep bleep" from the BMW's audible indicators. It took a full two laps of the course to lose that little bleeper once and for all. When the Yamaha pulled in and Roger Sutcliffe took over for the last lap, it was only six minutes ahead of the BMW, and that was after 126 miles of scratching!

Roger was the last away for the final lap, and the first one back. After checking the speedo and correcting the error we found that the Yamaha had travelled just eight miles further than the second bike, which was the little bleeper mentioned earlier.

## Specifications

### BMW R65

**ENGINE:** horizontally opposed aircooled twin cylinder four-stroke with overhead valves operated by pushrods. Carburettors: two 32mm Bing constant velocity V64/11. Ignition by coil and 12 volt 16Ah battery recharged by 280watt alternator. Starting by electric starter only. Wet sump lubrication.

displacement ..... 645cc  
bore x stroke ..... 82 x 61.5mm  
compression ratio ..... 9.2:1  
claimed power ..... 45bhp at 7250rpm  
claimed torque ..... 36.87ft-lb at 5500rpm

**CHASSIS:** twin loop steel tube cradle frame with bolted on rear section. Telescopic two-way damped forks with 6.9in movement, swinging arm rear suspension with three-point adjustment and 4.3in spring travel. Brakes: twin 10.2in diameter discs at front, 7.9in diameter s/s drum at rear.  
wheelbase ..... 54.75in  
overall length ..... 83.0in  
overall width ..... 27.0in  
dry weight ..... 452lb  
fuel tank ..... 4.84gal

**TRANSMISSION:** single plate dry clutch to five speed gearbox. Final drive by shaft to crown wheel and pinion. Gear ratios 1-5: 4.40, 2.86, 2.07, 1.67, 1.50. Rear axle ratio 3.44.

**PRICE:** £1,999. Warranty: 12 months unlimited mileage.  
**IMPORTER:** BMW Concessionaires GB Ltd, Motorcycle Division, 361/365 Chiswick High Road, London W4 4HS.

### HONDA CB650

**ENGINE:** transverse four-cylinder aircooled four-stroke with overhead valves operated by single overhead camshaft. Carburettors: four 26mm Keihin slide type. Ignition by coil and 12 volt 12Ah battery. Starting by electric starter and kick. Wet sump lubrication.

displacement ..... 626cc  
bore x stroke ..... 59.8 x 55.8mm  
compression ratio ..... 9.0:1  
power (MCM dynamometer) ..... 49.5bhp at 8500rpm  
torque (MCM dynamometer) ..... 33ft-lb at 7300rpm

**CHASSIS:** twin loop steel tube cradle frame. Suspension: telescopic front forks and swinging arm rear suspension with five-way preload adjustment. Brakes: twin discs at front and s/s drum at rear.  
wheelbase ..... 56.3in  
overall length ..... 86.6in  
overall width ..... 30.5in  
dry weight ..... 436lb  
fuel tank ..... 4.0gal

**TRANSMISSION:** HyVo chain drive to countershaft, gear drive to multiplate clutch and five speed gearbox. Final drive by chain. Primary reduction 2.737. Final reduction 2.50. Gearbox ratios 1-5: 2.500, 1.722, 1.333, 1.074, 0.885.

**PRICE:** £1,475. Warranty: 12 months unlimited mileage.  
**IMPORTER:** Honda UK, Power Road, Chiswick, London W4.

### YAMAHA XS1100

**ENGINE:** transverse four cylinder air cooled four stroke operated by double overhead camshafts. Carburettors: four Mikuni 34mm CV type. Electronic ignition and 12 volt 20Ah battery. Electric and kick starting. Wet sump lubrication.  
displacement ..... 1101cc  
bore x stroke ..... 71.5 x 68.6mm  
compression ratio ..... 9.2:1  
power output (MCM dynamometer) ..... 83bhp at 8,400rpm  
torque (MCM dynamometer) ..... 63ft-lb at 6,000rpm

**CHASSIS:** twin loop steel tube cradle frame. Suspension: adjustable telescopic frontforks, swinging arm rear with five position adjustable dampers. Brakes: twin discs on front, single disc on rear.  
wheelbase ..... 60.8in  
overall length ..... 90.4in  
overall width ..... 29.7in  
dry weight ..... 565lb  
fuel tank ..... 5.3gal

**TRANSMISSION:** HyVo chain to idle shaft, gear to clutch. Five speed gearbox, final drive by shaft. Primary reduction: 1.657. Final reduction 3.261. Gearbox ratios 1 to 5: 2.235, 1.625, 1.285, 1.032, 0.882.

**PRICE:** £2,280 inc. VAT. Warranty: 6 months/10,000 miles.  
**IMPORTER:** Mitsui Ltd., Oakcroft Rd., Chessington, Surrey.

### KAWASAKI Z1000ST

**ENGINE:** Transverse four-cylinder air cooled four-stroke with overhead valves operated by double overhead camshaft. Carburettors: four 28mm Mikuni VM 28SS. Ignition by coil and 12 volt 12Ah battery and full transistorised ignition. Starting by electric starter and kick. Wet sump lubrication.

displacement ..... 1015cc  
bore x stroke ..... 70mm x 66mm  
compression ratio ..... 8.7:1  
power (claimed) ..... 93bhp at 8,000rpm  
torque (claimed) ..... 65.82ft-lb at 6,500rpm

**CHASSIS:** double cradle tubular frame. Suspension: telescopic front forks and swinging arm rear suspension with five-way preload adjustment. Brakes: twin discs at front and single disc at rear.  
wheelbase ..... 1535mm  
overall length ..... 2205mm  
overall width ..... 850mm  
dry weight ..... 255kg  
fuel tank ..... 4.1gal

**TRANSMISSION:** Gear drive throughout via wet multiplate clutch to crossover shaft, five-speed gearbox. Final drive by shaft. Primary reduction 1.73:1. Final reduction 2.29:1. Gearbox ratios, 1-5: 3.17, 2.19, 1.67, 1.38, 1.22.

**PRICE:** £2,199 (inc. VAT) Warranty: 12 months, 12,000 miles but under revision.  
**IMPORTER:** Kawasaki Motors UK Ltd., 748-749 Deal Ave., Trading Estate, Slough, Bucks.

	YAMAHA SX1100	BMW R65	KAWASAKI Z1000ST	HONDA CB650
Mileage covered	1167	1159	1130	1156
MPG	30.6	42.4	33.0	48.5

	Tyres at start (tyres substituted after 12 hours in brackets)		Wear in mm after 12 hours/24 hours						Tread depth in mm left after 12 hours/24 hours					
	front	rear	front			rear			front			rear		
			left	centre	right	left	centre	right	left	centre	right	left	centre	right
<b>XS1100</b>	Dunlop Red Arrow 4.10V19	Dunlop Red Arrow 5.10VB17	0.6	0.8	0.5	0.1	3.2	0.1	2.9	3.0	3.0	6.0	3.3	5.9
<b>R65</b>	Metzeler 3.25S18 Rille 12	Metzeler 4.00S18 Block 66 Touring Special	0.4	0.6	0.4	1.0	3.1	0.8	3.4	3.1	3.4	5.2	2.2	5.5
<b>Z1000ST</b>	Bridgestone Mag Mopus L303 3.50V19	Bridgestone M400 4.50V17	0.3	0.5	0.5	0.4	2.0	0.6	2.9	2.5	2.7	3.4	0.8	3
	(Dunlop Red Arrow 4.10V19)	(Dunlop Red Arrow 5.10VB17)	0.2	0.6	0.2	0.1	2.8	0.1	3.3	3.4	3.7	6.1	5.1	6.2
<b>CB650</b>	Bridgestone Mag Mopus S703 3.25H19	Bridgestone Mag Mopus S710 3.75H18	0.8	0.4	0.8	0.5	2.5	0.3	1.6	2.5	1.5	4.0	3.3	4.1
	(Dunlop Red Arrow 4.10V19)	(Dunlop Red Arrow 4.25/85VB18)	0.2	0.3	0.2	0.1	1.4	0.1	3.3	3.4	3.3	5.0	4.1	5.1