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Earls Court Show ★ Harley-Davidson 1000

A Day at Mallory ★ Sport Commentary

KAWASAKI Z650

Claims and Reality

Kawasaki at The Bungalow on the TT course. This was, you might say, when the writer was testing the brochure's claim – "a whole lot of fun to own", and coming to the conclusion that it was certainly fun to ride

CALL ROUND for information on the Z650 at your "local friendly" and you will be handed a glossy booklet which makes several claims for the machine in the reasonable hope that you will be tempted. Claims like:

"Exceptional fuel economy."

"A marvel of advanced technology."

"A whole lot of fun to run."

As a result, we were expecting something rather special. Claims like: "Not just a scaled-down version of the Z1000" and "The frame is a junior sized version of the Z1000" made us unsure what to expect, so the first thing was a check on dimensions. Surprise, the overall dimensions are within 3 per cent of the bigger machine with an overall weight less than 14 per cent down, so although the engine is quite a bit smaller the machine could in no way be described as petite. Even though the difference in size is so minute, it was fairly easy for my 5ft 3in wife to manage the six-fifty, whereas she was overwhelmed by the thousand. Even the importers at Slough were under no illusion that the machine was small, as they showed by their concern over Mary's lack of inside leg dimensions!

On the way to Liverpool we managed a rough check of fuel economy and found it not to be exceptional at all. Around 150 miles on 3½ gallons is 43 to the gallon—with main road and motorway going, and nowhere exceeding 70 out of deference to the trail machine riding with us and carrying the bulk of our luggage. This figure can be compared with the performance of my 750, two up and with much more luggage, rushing up and down the Alps without a thought for speed restrictions and averaging 54 mpg, so out of the window goes claim number one.

Let's have a look at the technology then, to see if it is as marvellous as claim number two insists.

In the past it was possible to make all sorts of claims for the wonderful construction details of most Japanese machines, simply because we were all used to the old-fangled products of a dying home industry. In 1977, however, we must compare Kawasaki designs with the products of the other Japanese makers and with machines from countries like Italy where motorcycle production at least gives the appearance of flourishing.

The engine is an in-line four in the style so expertly pioneered by Honda with their 750 four in the late 60s, with a forged crank running in plain bearings and carry forged steel rods with conventional plain bearings. The cast, lightly domed, semi slipper pistons each carry two pressure rings and a three-piece oil ring, and move in cast-iron liners in a one-piece finned cylinder block. The combustion chambers are part spherical, with one inlet and one slightly smaller exhaust valve seating on iron seats and running in iron guides with oil seals. Valve opening is by cast-steel camshafts running in the light alloy of the head and bearing on bucket followers each surrounding a pair of coil springs. Adjustment is achieved by the insertion of a valve cap between the bucket and the valve, and a range of 25 thicknesses of cap is available. The clearance must be checked every 3,000 miles, and even if only one valve is out of adjustment the whole camshaft must be removed and the bucket withdrawn to change the cap. Kawasaki must have found the system used on their larger four in some way unable to cope with the 9,000 rpm redline of the 650, despite the fact that the Z1000 has the same rev-counter marking. Oddly enough the Suzuki 550 four-stroke has a redline at 9,500 and uses large shims above the buckets like the big Kawasaki.

The only unconventional feature

We stress this point, the only unconventional feature of the engine, because we do not like such over-complication which makes it necessary for the camshafts to be disturbed, for two reasons. First, if a job is complicated it is only human nature to avoid it as long as possible, and secondly, the more complex an operation is the more likely is it that someone, sometime, will get it wrong. It is all too easy to forget to remove the rev-counter drive first, or get the cam chain caught up on the crankshaft sprocket, or mistime the camshaft, or fit the bearing caps on backwards or out of sequence, any of which could write off several hundred pounds worth of bits. Certainly not "a whole lot of fun" when that happens, whether the fault of the owner or the mechanic, because the owner will pay in the end. [Kawasaki UK claim that the reason the Z1000 system is not used on the Z650 is to reduce the noise output of the engine; with the shims underneath the buckets the clatter is further from the open air. They also advise that the valves only need adjusting every 10,000 miles, or, that only every third check will show up an out of tolerance condition, on average, *and* that no Kawasaki mechanic would be so incompetent as to get the assembly operation wrong. We are very glad to hear it. A further advantage they claim for the 650 is that the end caps are only 30p compared with over £1 for the Z1000 shims, but even 30p a time is 30p more than it costs if the adjustment is by threaded parts or eccentric shafts, and they must be quieter still!]

The Z650 carburettors are conventional four-cylinder practice, with a double quadrant and cross shaft operated by a "desmodromic" twin cable throttle lifting the four slides of the 24mm Mikunis by means of an adjustable link contained in the top of the carburettor body. The air cleaner is of pleated paper, and very readily accessible under the seat, so at least that won't be ignored.

Primary drive is by Hy-Vo chain, for two good technical reasons. This type of chain does not normally require an adjuster to take up wear as the design automatically forces the chain to ride further out on the sprockets when wear has occurred, effectively using up any slack. Even if an adjuster were used with a roller chain, it would be difficult to prevent noise and premature wear in an application such as this where the engine goes round backwards. The slack is in the top run of the chain under driving conditions and this slack would fall onto the sprockets rather than away from them. The clutch is a conventional cast light-alloy centre and basket affair with seven friction plates and six steel ones, and loaded by five coil springs.

The gearbox is equally conventional Japanese with an input and an output shaft side by side, and a selector drum moving the gear dogs in and out of engagement for the five gears.

Our search for details which would justify the puff goes on—the oil pump is a conventional trochoid unit, the starter motor drives through a small epicyclic reduction gear like many other machines. The rest of the electrical equipment has the cleverness which has become conventional on almost all large machines. A three-phase inductor generator produces the power, a vibrating contact regulator controls it, and a collection of silicon diodes points it all the right way. Ignition couldn't be more old-fashioned, with a pair of points for each pair of cylinders, and a pair of double-ended ignition coils leading to the four plugs. As to the cycle parts, convention again rules, as you can see from the photographs.

Now for the rest of the claim—"a whole lot of fun to own". Yes, once we had warmed up

the engine and got going it was definitely fun to ride. Smooth, fast, though not as smooth as some twins I have ridden, and no faster than a good Norton 650 SS, with quite reasonable road-holding. Despite the wet weather which prevailed for much of the TT fortnight we didn't go out much in the rain, but even in the dry the brakes were only just adequate for spirited Island riding. On more than one descent from the giddy heights of Snaefell, two up, the front brake developed that wooden feel which indicates the onset of fade, and that acrid whiff which rose from the front wheel as we came to rest confirmed it. Normal riding, with an overall restriction of 70 mph, should be no problem at all—significantly, the Z1000 has a double disc, and, equally significantly, the 650's right hand fork leg has already got the necessary bosses for doubling up the caliper, and the wheel is already drilled to take another disc. In no way was the rear drum brake inadequate as a back-up to the front; let no-one form the opinion that I would prefer anything to a simple mechanical drum brake for a solo rear wheel, for a rear brake has only a minor effect in hard braking. Indeed, the better the front brake works the more likely is the back brake to lock, so the modern fad for rear discs has no foundation in fact, only in fashion dictates.

Apart from this, the performance of the bike was exactly what you would expect from a recently designed Japanese six-fifty four. There was the usual spread of nick-nacks: a neutral indicator which told you you were in neutral or just coming into neutral, a box of tricks to tell you that your brake-light bulb had blown, and an oil pressure light to tell you that possibly your big end bearings had just failed. The switches were reasonably placed, with, on the right hand side, the kill switch, head and sidelight control, and starter button. This last was interlinked with a switch on the clutch lever so you couldn't start the engine unless the clutch was pulled in; a nuisance until I got used to it but a useful safety feature. (Until it goes wrong: but this is where the Japanese win —their gimmicks *don't* go wrong.) I wasn't 100 per cent sure about the left hand switches; the indicator knob was bang in the middle and dead easy to work, but the horn and headlight flasher were both operated by the same button, and you pushed it like *this* to work the horn and like *that* to flash the light, but if you weren't careful you could end up as I did blowing your horn to warn a passing rider that there was a Police car up the road.

On top of the unit was a slide control for dip and main beam. When I hold a handlebar all my thumbs and fingers are underneath somewhere, and to operate a control on the top of a switch I must either let go of the bar or try to operate the switch with the first knuckle of my first finger. Neither of these operations is possible when using the clutch. A minor point, but then, motorcycles have all become so boringly excellent that minor failings become important.

There were, however, two things about the test machine at least which are not entirely typical, I am sure (as I found by asking round one or two owners in the Island) but which made it a little embarrassing at times.

Early-morning traumas

When the engine was started from cold, using the carburettor-mounted choke of course, it would always fire immediately, even after the coldest of Manx summer nights, but it wouldn't keep going. Or rather, it would only keep going if the throttle was left firmly closed and the choke lever left in the rich position, when the revs would rise immediately to 4,500 rpm and stay there until either the throttle was opened or the choke released, when the engine would stop. Imagine the situation at 4 in the morning, when I needed to go down into Douglas to get the morning's buns for breakfast before scrutineering. On one side of the tent is sleeping a pair of large Glaswegian Triumph owners, on the other side, five even larger Germans are dreaming dreams of Adlers and Horexes, and there in the middle is a brand new four doing a fair imitation of a supercharged bagpipe. Not conducive to good international relations, and not conducive after the first attempt to nice hot bacon sandwiches; we were not amused. In the end I developed a technique for daytime use of riding away as soon as the engine fired, in the hope of keeping the revs and the noise down, but this meant juggling with the choke control with the left hand, and steering with the right. After Kawasaki's attempts to make the machine ultra safe with a special clutch switch on the electric starter, this performance, this swooping along in a series of wild swerves, was particularly ludicrous.

The alternative was to start the machine on the stand and leave it wailing away for a minute or so, when eventually the engine would warm up and become over-rich, and down would come the revs again. Then if you weren't careful it would soot the plugs and stop completely, but with luck you could close the choke a fraction and let the engine warm up further (this time at 5,000 rpm), when with great care you could close the choke a bit more and gingerly drive away. This is when the other fault would occasionally show itself. Sometimes, about once in three goes, there would be a sudden whirring, juddering noise as the clutch was let gently out from cold, and although the lever was not fully released, the clutch would bite completely, with the result that either we shot off up the road like a scalded cat or we stalled and had to start all over again. I have only ever came across one other machine to show the same fault, and then only when warm, and that was a very well used Gold Wing which I borrowed from Honda last year on condition that I *didn't* write a road test of it. Memory stirs—yes, I did once ride a machine which did it every time, a Vincent twin on which the servo clutch was not only worn out and had broken centralizing springs, it had been assembled wrongly as well. But the Z650 was as nearly new as made no difference.

On the way back from the Island, I tried to achieve a more reasonable petrol consumption figure. I was suspicious that the earlier disappointing result could have been due to my zeal to protect the excellent finish of the tank. Under the tank top bag I had spread an old pyjama jacket, and tucked the sleeves into the front of the seat to keep them out of the way. They could have been responsible for partially blocking the air filter giving a rich mixture and therefore high consumption, but the repeat test was inconclusive. The Yamaha with the rest of the luggage and Mary went onto reserve at Newcastle under Lyme at about 9 p.m., and we did not find petrol anywhere on the A41 until just before Banbury, by that time I had drained so many Coke-tins-ful out of the 650 that I was well onto reserve myself, and any chance of recording consumption was lost.

It is a tradition almost as strong as "the controls fell readily to hand" that a road test ends with the words "and it was with great reluctance that we returned the machine to the makers". Well, in this case, somehow, it wasn't. Neither were we glad to see the back of it, despite its quirks, for we felt that both the faults we mentioned would be amenable to adjustment or minor modification, but it was more with a feeling that "there's plenty more where that came from".

They may have some other name on the tank, ending in I or A, but the fours of this modern world are all, it seems, much of a muchness. Indeed the general standard is now so high that a machine would need to be supremely excellent to stand out from the crowd. The Z650 is a very nice bike, and that's all I can say.—T.R.S.