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# What Bike?

NEW & USED PRICE GUIDE EVERY MONTH

## YAMAHA FZR1000



# THE THINKING MAN'S 1000

**Why alter a good thing? That's why Yamaha's FZR1000 stayed the same this year and only comes in for 'refinement' next. The bike had the edge when it was launched, reckons John Nutting, and despite hefty opposition has plenty going for it still.**

**W**HILE Honda, Kawasaki and Suzuki kept up their headlong techno-rush with their 1990 heavyweight sports machines, Yamaha took the apparently risky decision to offer no substantial changes to any of its most popular models in the UK market.

They have even repeated the exercise for 1991 (apart from some re-styling leaving their top of the range, 20-valve four cylinder FZR1000 to live on its reputation alone.

Last year, as Honda introduced extra refinements for its CBR1000, Kawasaki launched the ZZR1100 and Suzuki adopted Grand Prix style suspension for the GSXR1100, Yamaha updated the FZR1000 with stainless steel detailing on the exhaust system. That's all.

The changes for next year are massive in comparison but upside down forks (following fashion perhaps rather than making improvements?), a new front mudguard, a few detail engine changes and re-designed upper fairing hardly constitute a radical rethink. No, the FZR enters its third year relatively unchanged.

But then again, it had the edge to start with. It was introduced for 1989 with 'EX-UP' electronically-controlled valves in the

exhaust collector to further widen the machine's power plateau. The all-new FZR replaced its 750cc based predecessor which had lasted just a year. Not only the lightest in the class, the FZR1000 could develop almost 150bhp and propel its rider to more than 170mph.

As a road-going representation of Yamaha's consistent racing policy, the FZR1000 had, and still has, it all: the technology, the power and the handling.

And yet the record shows that Suzuki has cleaned up this year with the GSXR1100. Pure sports muscular looks with the added bonus of trick upside down forks has been enough to give the bike a clear lead in the sales charts during

1990. Yamaha, Kawasaki and Honda have trailed in its wake.

Perhaps familiarity is the flaw in the FZR's make-up? It's more likely those angular looks — it looks flimsy compared to the Suzuki and Yamaha's refinements on next year's model give it a much lower and more flowing look. Rest assured that even after two years this 1000cc bike has far too much going for it to take a pasting lying down. Those relatively modest change for next year could turn out to be significant — but whatever happens Yamaha won't need to

**Pictures: Jason Critchell**



make any substantial changes to improve their mega-muscle power plant.

**ENGINE/TRANSMISSION**

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It's no coincidence that Yamaha are making cylinder heads for F1 racing cars next year — look out for their name. They have been using five valves per cylinder on 750 and 1000cc bike engine since 1985 — technology that has been developed in F3000 car racing before their step up next year into F1.

But what's the advantage? In a four-valve set-up two inlet valves are better than one because the fuel arrives around two valve openings providing a bigger area of induction. This also saves on reciprocating mass — too much weight bouncing up and down...

Employ three inlet valves and the benefits are even greater — a more compact combustion chamber can be used and, because three valves don't need to open as far as two to let in the same amount of fuel, shorter valve timings can be used.

On the road bike this means a more flexible engine pulling strongly across a wider rev range. On a F1 car this isn't as relevant of course but the advantages are obvious.

It is this incredible response that is the overwhelming impression gained from the FZR1000 and the OW01 750cc race replica. There's the expected top end power beyond 10,000rpm but it is combined with smooth, manageable, throttle response down as low as 2500rpm.

When editor Bob Berry rode the ex-Rob McElnea 750 racing bike at Cadwell in 1989 it was not the speed but the easy pick-up of power that was so impressive — not a feature you'd expect from a full-blooded racing machine.

This feature is further enhanced by the use of the EXUP system in the exhaust pipe — an electronically-operated bank of valves that open at high revs to allow the four-into-one exhaust to boost top end power. As the revs drop, the valves are closed by a servo motor so that back pressure is increased, improving torque at low revs. It also has the added benefit, claims Yamaha, of improved fuel consumption and smoother idling.

And there's more. Yamaha's objective appears quite clear; to produce a sports machine that embodies their racing strategy in a road-going package. Power is one part of the equation. Compactness, balance and sharp handling are just as important.

Balance is why the watercooled engine is tilted so far forward that the four 38mm point almost directly upwards. This means the fuel tank can sit right behind them and lower the bike's centre of gravity. That 'petrol' tank contains nothing but wires. Other manufacturers have come close to exploiting this layout but not to same extent as Yamaha.

And it makes all the difference once you slip onto the machine. The fabricated light-alloy Deltabox frame wraps closely around the engine yet it is slim across the footrests. These measure just 60cm from tip to tip and, combined with the slim rear of the 'tank', give a pistol-grip feel to the machine. You're tucked in close to the mechanical operations and firing up the engine on the starter leaves



no doubt about its intentions.

Unlike the Kawasaki and Honda opposition, the FZR1000 motor doesn't have the rubber mountings or balance shafts. The Yamaha's power is raw and undiluted but so subtle as to be almost unobtrusive. The delivery at source is so pure that further refinement is unnecessary.

Using the 125 horsepower, then, is like unleashing a torrent. Everything comes in a smooth rush towards the peak at the top end — by the time you get there you are well prepared.

The refinement continues with the five speed gearbox and chain final drive. Yamaha are masters of the competition gearbox, one that's slick and positive when the revs are wound up but occasionally recalcitrant when the going's less frenetic. The FZR's box follows character, as does the smooth drive, allowing town speeds without tears.

Only the clutch provides reason for

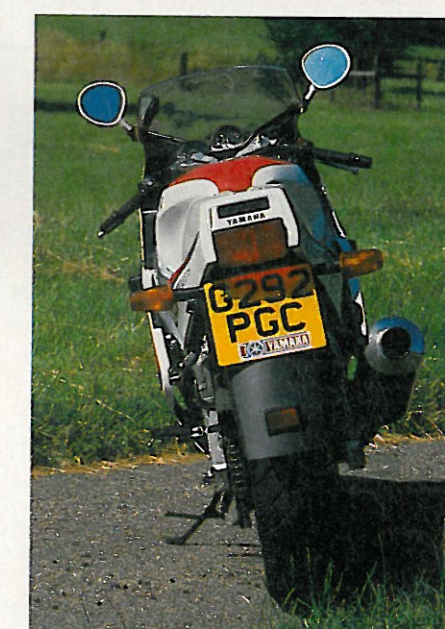
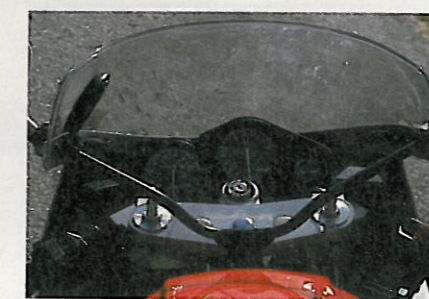
criticism. Not bothering to change down but slipping the clutch to get the revs up provokes a judder as the drive is taken up. A real fly in the ointment, that.

But there's no arguing with a machine that, given enough grip at the rear tyre, will sear through a quarter mile in just under 11 seconds, reaching 60mph in less than three. Those five speeds also means there's less juggling of the foot. At 11,000rpm, that means 69mph in bottom, 100mph in second, 129 in third, 151 in fourth and 170mph in top. Enough for any mortal.

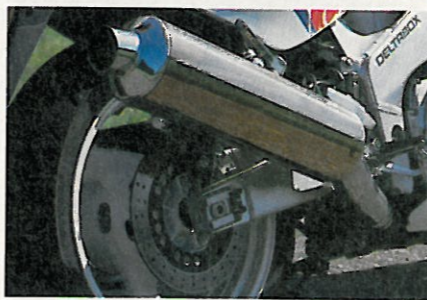
**CHASSIS AND BRAKES**

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**H**ARNESSING the power of a 170mph machine puts the designer in a dilemma. Should he produce a chassis that is stable at high speed but has unresponsive steering and harsh suspen-



That one massive silencer is fed via Yamaha's unique EXUP system — a series of valves within the exhaust that control pulses and provide smooth power all through the range. Riding position is superb thanks to the slim contours of the bike. Petrol is contained in a tank behind the engine which gives a low centre of gravity, in reality the petrol 'tank' contains the airbox for the carbs, Yamaha's massive Deltabox frame wraps everything together into a tight handling package that's hard to better. Equipment is basic, as befits what is essentially a sports bike — one that will top sixty in less than three seconds.



sion at lower speeds? That was the situation three years ago. Since then, radial tyre technology and chassis design has forged ahead to the point where few compromises need be accepted.

The strong Deltabox frame ties the FZR's wheels together in a short (for a 1000) 57.5 inch wheelbase while the steering geometry is a conventional 63.25 degrees of rake with 110mm of trail. With the clip-on handlebars rubber-mounted below the top yoke, the riding position is quite a stretch, yet there is still enough weight on the front end to slow the steering.

The Yamaha can't be described as a quick handler by any means, and demands concentration from the rider to keep on line with a trailing throttle. Use the power on exiting a corner though and things change dramatically; the rear end steers for you and the front end livens up nicely.

A good test of a machine's handling pedigree is whether it'll steel neutrally at

more modest speeds. Even with wide Dunlop Sport Radials fitted — 130/60VR17 front and 170/60/VR17 rear — the FZR feels okay in town. Can't say what it's like in the wet because it didn't rain.

Should the need arise for adjustments to be made for rider weight, there are plenty of options, though fortunately not too many. The conventional front telescopic forks with large 43mm legs has preload adjusters at the top, while the single rear shock can be easily adjusted for rebound damping; spring preload alteration is a bit more tricky.

Braking equipment is right up to scratch with large semi-floating 320mm front discs with four piston calipers. Front stopping power is immense at the expense of drag noise when the brake's not in use. Rear disc is a 265mm unit but the caliper is fixed, not floating, so care must be taken in its use when you're hard on the front end while dropping through the gears.

**EQUIPMENT**

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**T**HE FZR1000 is equipped for sports riding, pure and simple, so don't expect a list of home comforts. Nevertheless, the bike offers a more luxurious perch than bikes like the Suzuki GSXR and Kawasaki's ZXR750 which are thinly-veiled track bikes in character, if not in fact.

The mirrors, mounted on stalks supported by the fairing's internal framework, offer a good view and the instruments, once you get used to their six o'clock starting point, clear. A shame that they use fake foam mounts — the FZR doesn't need that.

The slim seat worked well for my 180 pound weight; the tail unit unclips for passenger use but the process isn't enjoyable. The footrests are too high and the position cramped for anything but the briefest of runs. This is a solo machine.

## COMPARISON CHART

Model	Yamaha FZR1000	Kawasaki ZZ-R1100	Honda CBR1000	Suzuki GSX1100F	BMW K1	Suzuki GSX-R1100L
Price	£6349	£6499	£6199	£5599	£8660	£6249
Capacity	1002cc	1052cc	998cc	1127cc	987cc	1127cc
Engine	four-stroke four	four-stroke four	four-stroke four	four-stroke four	four-stroke flat four	four-stroke four
Cooling	liquid	liquid	liquid	liquid	liquid	liquid
Gearbox	five speed	six speed	six speed	five speed	five speed	five speed
Final drive	chain	chain	chain	chain	shaft	chain
Weight (claimed, dry)	460lbs	501lbs	507lbs	537lbs	569lb	462lbs
Seat height	30 inches	30.5 inches	30.5 inches	31 inches	30.7 inches	31 inches
Fuel capacity	19 litres	21 litres	21 litres	21 litres	22 litres	21 litres
Fuel consumption (av.)	40mpg	41mpg	35mpg	43mpg	45mpg	37mpg
Power	125bhp	125bhp	140bhp	136bhp	100bhp	125bhp
Claimed top speed	170mph	175mph	160mph	155mph	125mph	163mph

\* Prices correct at November 8th, 1990

## 'WHAT BIKE?' STAR RATINGS

Engine/transmission	****	****	****	*****	****	n/a
Chassis/brakes	****	*****	*****	****	***	n/a
Equipment	***	****	*****	****	***	n/a
Price	****	****	*****	**	***	n/a
Our Verdict	****	****	*****	*****	***	n/a

Unusual feature is the use of the separate pilot lamp above the twin headlamps.

Also handy is the electrically operated reserve switch in the left side of the fairing just below the handgrip. With a fuel consumption on unleaded of between 39 and 42mpg, the FZR would take about 17.5 litres once reserve had been selected, giving a range of between 140 and 170 miles.

## THE PRICE YOU PAY

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**W**ITH a recent price increase lifting the FZR1000 to £6,349, the bike no longer offers a competitive price edge compared to the ZZR1100 or the GSXR1100. But it is arguable whether price

makes a difference in this league. Either you want the bike, or you don't.

The reason for buying the Yamaha should be clear; it's a refined sports bike that relies on its engineering prowess rather than image or styling. And this is at the expense of attractive detailing or a smooth finish to items like the alloy frame or the fairing decals.

Particularly irksome was the chromed loop that prevents the rear brake fluid line from abrading the rear type: when perched on the balls of your feet, this loop would rip the inside of your boots to pieces, despite the small protective cover.

Yamaha has recently been making efforts to reduce the prices of its parts, and this has been possible because it makes a point of not redesigning items like switchgear every

year. This pays off in cost and availability.

## OUR VERDICT

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**I**F the Suzuki GSXR1100 is the headbanger's sports bike, then the Yamaha FZR1000 is the thinking man's machine.

Its strengths are not so prominently displayed as on the Suzuki, but they come immediately obvious once you ride the bikes back to back.

With the Suzuki you need commitment. On the Yamaha you can be more relaxed. Both are quick; they just get to where they're going in different ways.

If Yamaha wants to grab that top sales spot, however, it will have to update the bike's suspension and finish quality.



That ugly rear mudguard can be easily unscrewed to make it a civilised length. Looks of next year's model are tidier.