

also completely new, based on an aluminium box frame that follows the YZR-M1 by a long way. The air intake pipe that runs through the headlight and an airbox that is 24 per cent larger than the S1000RR. Naturally, the injection system has a choice of four maps for throttle response. The geometry is unchanged but the wheelbase are both shorter. The weight saving – its claimed figure with a full tank is 170kg, lighter than that of the S1000RR, whose chassis is virtually identical – didn't come by accident. The fuel tank is made from aluminium instead of steel, the subframe, engine covers and even the exhaust are magnesium; the four-into-one exhaust is made of titanium. The electronics that bring the R1 into the battle are a big part of the current superbike pack. The heart of the system is a compact device called an IMU, or Inertial Measurement Unit. This consists of three gyroscopes to measure pitch, roll and yaw, plus three accelerometers to measure forward/back, sideways and up/down. Between them, they can detect when the bike is doing 125 times per second. This has allowed Yamaha to introduce a long list of new features and acronyms. Alongside the updated ABS system there's the new SCS slide control system which can detect when the rear wheel

is stepping out. There's an anti-wheelie function (called LIFT), a launch control system for race starts, and a unified brake system (UBS) that links front and rear stoppers, and adds a bit of rear brake when the front is used, depending on lean angle.

It's all complex stuff, and Yamaha have done a good job of making it simple to use. The levels of all the systems, including the four power modes, can be selected via a button on the left bar. On the right bar there's another button for what's called Yamaha Ride Control System. This allows the rider to select from four groups of all the electronic systems, so for example you can have one group of settings for fast road or track, a slightly softer alternative, another for town and one for rain, each one programmable with the rider's desired levels of each electronic function.

The motor's a gem: not just plenty powerful up top but smooth, flexible and characterful for a straight four. Despite its even more over-square dimensions it seemed respectably strong low down, happily pulling from below 4000rpm in fourth and fifth on the way back to the pits at the end of the first session. The top-end charge didn't seem quite as vicious as that of the S1000RR or Ducati's 1299 Panigale, but perhaps that was due to the wheelie control seamlessly doing its stuff to stop the front end lifting.

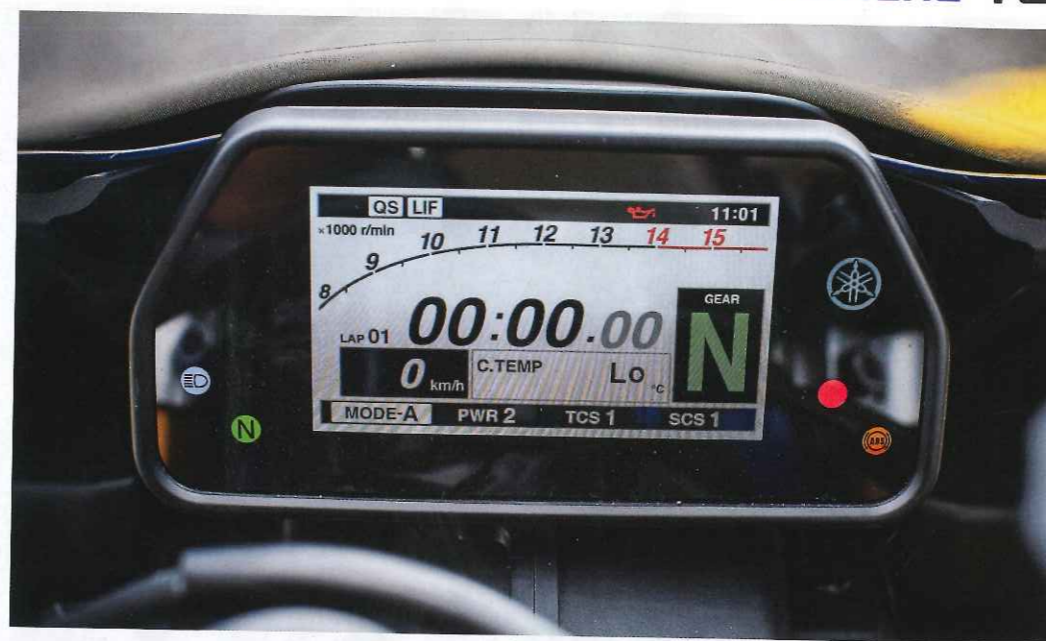
Throttle response was superb; so much so that on

a dry track there was no reason to use anything other than the most aggressive power mode. The quick-shifter worked flawlessly, too, once I'd had the lever lowered slightly, although the R1 doesn't have the auto-blipper that allows clutchless downshifts on the BMW and Ducati.

Handling was just as you'd expect from a light, short, stiff, race-bred bike. The launch R1s had been well set up by Yamaha's test riders and needed only a fraction more fork preload to corner with stunning pace and poise on a circuit that ranges from that fast, bumpy first left-hander, where stability is the prime requirement, to a series of slow-speed bends that put a premium on flickability. The Yamaha passed both tests and all those in between, its super-sophisticated electronics helping make it as safe as it was fast.

Over a couple of crests it snapped its bars briefly but always settled down with minimal fuss. The Bridgestone RS10R tyres – a softer, track day oriented version of the RS10 that the bike is delivered with – gave heaps of grip, and meant that I had to dial in plenty of throttle to get the rear tyre moving. Frankly I couldn't tell the difference between the traction control and slide control, but between them they make a formidable partnership. You really just can wind open the throttle at full lean on the apex of a bend and let the IMU sort out those 197 horses.

Yamaha YZF-R1 [YZF-R1M] (2015)



Its 197bhp and fuelled-up weight of 199kg put it right up there with BMW's S1000RR and the rest

YZF-R1M

After three sessions on the standard R1 we got two on its upmarket, limited-edition derivative the R1M, which combines the same powerplant with a chassis featuring carbon-fibre bodywork and Öhlins semi-active suspension, also linked to the bike's IMU nerve base. The Swedish firm's Electronic Racing Suspension is very similar to the system used by the 1299 Panigale, and is

every bit as impressive, as well as easier to fine-tune via the Yamaha's simple but effective push-button display. The benefit of a semi-active system is that it allows the suspension to be firm when it's needed (typically the front under braking, the rear under acceleration) and compliant when it's not. This was well illustrated in the long, super-fast and pretty bumpy first turn, where you brake from high speed. The R1 was firm on the brakes yet floated over the bumps notably better than the standard bike.

Öhlins say the system, which provides three automatic presets as well as three for conventional electronic adjustment, makes roughly 40 significant suspension adjustments during a typical lap of a circuit such as Eastern Creek. And it's easy to fine-tune, too. When I wanted a bit of extra compression damping it took only a few seconds' pressing of buttons to dial in a bit more.

The R1M also comes with a polished aluminium tank and swing-arm, a slightly fatter, 200-section rear tyre (of the same RS10, although we were treated to super-sticky Bridgestone slicks on the launch), and a GPS-enabled data-logger. But before you get your hopes up, it is being produced in strictly limited numbers and is already sold out in many markets despite being over 20 per cent more expensive than the standard R1.

The Stats:

Yamaha YZF-R1 [YZF-R1M] (2015)

Engine type	Liquid-cooled transverse four
Valve arrangement	DOHC, 16 valves
Displacement	998cc
Bore x stroke	79 x 50.9mm
Compression ratio	13:1
Fuelling	Digital fuel-injection
Maximum power	197bhp (200PS) @ 13,500rpm
Maximum torque	112.4N.m @ 11,500rpm
Clutch	Wet multiplate slipper clutch
Transmission	6-speed
Front suspension	43mm KYB USD telescopic, 120mm travel, adjustment for preload, compression and rebound damping [Öhlins Electronic Racing Suspension]
Rear suspension	KYB damper, 120mm travel, adjustment for preload, high- and low-speed compression plus rebound damping [Öhlins ERS]
Front brake	2, four-piston radial calipers, 320mm discs with ABS and Unified Brake System
Rear brake	Twin-piston caliper, 220mm disc with ABS and UBS
Front wheel	3.50 x 17in; cast magnesium
Rear wheel	6.00 x 17in; cast magnesium
Front tyre	120/70 x 17in Bridgestone RS10
Rear tyre	190/50 x 17in Bridgestone RS10
Rake/trail	24 degrees/102mm
Wheelbase	1405mm
Seat height	855mm
Fuel capacity	17 litres
Weight	199kg with oil and full tank (179kg dry)

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