

BLUEPRINT R1

Taking a good bike and making it better by fixing its handling issues...

WORDS: SIMON HARRIS PHOTOGRAPHY: DOC ROBINSON

2009 was the year that Yamaha introduced its now rather well known crossplane crankshaft. This change did wonders for the engine characteristics. By that I mean having usable thrust below shriekingly high rpm. The big bang firing has made such a difference to the drive, from almost anywhere in the available wash cycles that it almost shouldn't be allowed. This can't be exaggerated and, when mated to a superbly sorted throttle and fuel delivery system, makes a dauntingly fast motorbike practically a cakewalk to ride. Even better for racing with as per Spies, who won world supers on it in its maiden year... or Kev Curtain here in FX.

Matt Schwab is responsible the 2009 model R1 here and has been a long time R1 fan, however, it was the 09 boomer model that really wet his appetite. He also happens to be the proprietor of Blueprint Motorcycle Engineering in Adelaide, South Australia. Matt is a mechanical engineering tradesman, with extensive motorcycle mechanic experience and has held much love for motorcycles since his childhood, as is so often the case with the nice bike people that run these essential services to fellow riders. On the racing side of things, he competed in various classes between '94 and '00 on a range of machines that he personally improved and prepared, including a ZX-6R, CBR900RR and TZ250. He also got to share the track with some future stars like Troy Bayliss. The motorcycle racing arena is very important to Matt and remains an inspiration, challenge and deep commitment: "I would encourage anyone thinking about going racing to do it. You will have the time of your life" he says. Matt's passion is one that is so often palpable between racers at the circuit, where camaraderie, help and advice is literally on tap. In the end, it was Matt's racing experiences and a stint in an American nitrous funny-car team where he learned the "business of racing", that he eventually found his calling. This being to aid his fellow racers to get quicker, be safer, more professional and more confident and to get the best from their machines. As a result, in 2004 Blueprint was born.

Getting back to the bike you'll probably be surprised that little work has been performed on the engine performance side of things. This is partially due to the fact that the current R1 is pretty well fast enough bog stock to get most punters in trouble should they be wanton with the throttle. Matt believes that "achieving the right balance between suspension and chassis is really what makes a difference to cornering and lap times. Not just outright power". Considering the detail and sophistication of modern suspension it's safe to assume that he's pretty well plumb on that. Here's the rub though, the available suspension and array of adjustment available on most modern sports or track oriented motorcycles can also get riders tied in knots if they are not sure of what to do. To perhaps make matters worse, or in Matt's case present a challenge, the R1 is a machine that in some circles is reputed to have some handling foibles... well, it is a heavy beast. This is also why Matt sorted this machine out for track use - to demonstrate how well the bike can be made to behave at the limit given the right approach, but also as a promotional tool to showcase his talent and prowess with racing motorcycle chassis'. To that end the R1 project has not been a disappointment for him.

One secret weapon that Matt and Blueprint have in their possession is MotoJig. What is MotoJig? Apart from being rather expensive, it is a precision jig that solidly locks virtually any kind of bike in place for the purposes of highly accurate digitised measurement of all geometric aspects of chassis. Naturally, it is also used for repair and re-alignment, by way of hydraulic rams. Matt says "the MotoJig is an invaluable tool for determining baseline settings and having an accurate reference from which to work. All the race bikes I set up go through it". Indeed, rake and trail, swingarm angle and pivot position, wheelbase and the like all become absolute known factors. This helps tremendously in then determining what changes to the chassis are likely to bring about the desired effects, for example, changing the position of the forks in the yokes, adjusting ride height, etc. Still, you need knowledge to select the right changes to make and use the right increments. You also need ideally, as a rider, to be able to articulate the ride and also subtle enough to know the difference after a change. Of course, not all humans are capable of such feats at flat stick when your primeval brain is screaming at you to simply get off the f*cking bike! All too often Matt has seen dudes go slower after taking well intentioned advice from umpteen sources and trying them. All at once usually. Its either that or just try and "ride around" problematic handling, which unless you are supremely gifted, ultimately ends up in ordering replacement fairings.

Of course the R1 isn't a perfectly sorted machine standard even though the sophistication, engineering and build quality of modern machines is now absolutely remarkable. Matt did make some changes. On the engine side he chose to leave the crankcases and head alone, instead opting to improve the breathing and provide for scope to alter factory fuel mapping and ignition settings for track layout and atmospheric conditions by way of a Power Commander V module, BMC airfilter and GYTR cans. Cans that "really turn heads" according to Matt, serving as a clarion call for closer inspection by passers by.



OWNER PROFILE

NAME: Matt Schwab
LIVES: South Australia
AGE: 39
HOW LONG INTO BIKES: 32 years
OTHER BIKES OWNED: Ducati 996; Honda Z50, CBR900RR; Kawasaki ZX600R; Suzuki RM125, RGV250; Yamaha TZ250, YZF-R1 and plenty more
BIKES YEARNED FOR: Yamaha M1 MotoGP bike
OTHER INTERESTS: Surfing, engineering, sports photography

SPECIAL THANKS:

Nightmare Designs, Visualeyez Colour, Luke Brenton, Underground Designs and our Jeffrey.



1. Valtor Moto preload adjusters. 2. CRG levers. 3. Ohlins steering damper. 5. Revvalved standard shock. 5. Roaring Toyz rear linkage. 6. Stock pegs. 7. GYTR exhaust. 8. Power Commander.

Take into consideration that the more powerful and highly tuned engine is in standard form the more difficult and expensive it can be to improve. Remember the balance – you could spend mega-dollars and get additional grunt, but if it handles like some NSR500 variants and you can't get that power to the bitumen you probably won't finish the race...

In the forks, Matt installed Gold Valves, which he says provide much better control of the damping, particularly deep in the stroke, and tend to eliminate bottoming out, which is crucial at places like Mallala. He replaced the rear spring with a better quality and more predictable Ohlins unit and added a Roaring Toyz ride height adjuster. The brake lines were replaced for Hel items to suppress ballooning and improve control. As you can see, not massive or extensive modifications but ones chosen specifically to overcome small deficiencies rather than full-on replacing everything replaceable (including income). On the tyre side, he selected Dunlop N-Tecs after several seasons developing a Supersport R6 with them. Matt reckons the N-Tecs are extremely good when the bike geometry is set

up properly to work them; "the rear has a large diameter with a hard sidewall construction that allows low pressures to be run. This gives a much larger contact patch". Matt put the machine through the MotoJig and modified the front/rear ride heights and rear wheel position for better weight distribution; the outcome of which "was a completely different bike - stable at high speed and you could easily pick a line on corner entry under hard braking, which was quite difficult before the changes were made". Inspiring revelations that do not cost like a phalanx of WSB pit crew.

After making the bike exceed its reputation on the track it was time to make it more appealing. As you can see, the paintwork by Troy at Nightmare Designs, who Matt can't recommend enough, is eye-catchingly effective and exudes a well finished, detailed look. Matt believes strongly in presentation when it comes to racing because it says something about the rider and not necessarily the wallet; "road racing is a lot like running a business, as you need to sell yourself to sponsors and get the money together, prepare the bike and then perform on race day". Sound advice for racers that are vying for sponsorship and fast laps. 🏁

SPECIFICATIONS

ENGINE: Standard 2009 Yamaha 998cc (bore x stroke 78.0 x 52.2mm) four-stroke liquid-cooled, fuel injected inline four-cylinder, DOHC with four-valves per cylinder, 12.8:1 compression ration, Power Commander V, BMC filter, GYTR silencers.

TRANSMISSION: Standard Yamaha six speed, hydraulically operated wet multi-plate slipper clutch, 16:47 sprocket ratio and Vortex 520 chain.

CHASSIS: Standard 2006 Yamaha YZF-R1 aluminium frame and swingarm, fully adjustable rear suspension with Ohlins spring and Roaring Toyz adjustable ride height linkage, fully adjustable 43mm front forks with Ohlins springs and 7wt oil, 310mm rotor front brakes with six-piston radial-mount calipers, 220mm rear brake and single-piston caliper, Ohlins steering damper, alloy wheels (3.5x17F, 6.0x17R).

BODYWORK & MISCELLANEOUS:

Racer's Edge bodywork with Nightmare Designs paint and Visualize Colour and Underground Designs decals, Valtor Moto fork preload adjusters, oil filler cap, steering stem nut; Cox radiator guard; BPE 25mm handlebar extensions and Renthal grips; Hel brakes lines; EBC HH pads; Motul RBF600 brake fluid; Dunlop N-Tec tyres (120/60-17F, 200/55-17R).

