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PLAYING DIRTY

After a decade and a half of blue-smoke-breathing strokers, the RD500 emerged as the first of the true race replicas. Shod totally in plastic bodywork and looking every bit a bike worthy of the great Kenny Roberts, most were expecting the ride of their lives, but did they get it?





Before the RD500 came along, the beauty of the two-stroke had always been its simplicity of design and construction. Any back-street mechanic could whip the heads from a 70s machine and play around with the innards to their heart's content but, with this new machine, the complexity now matched the best and worst aspects of the hi-tech diesels.

With four of everything to be looked after, and cables and wiring clogging the inner gubbins, working on the big Yam was no easy proposition; so much so that a first glance was quite often the last when an owner thought about delving inside. It really wasn't as bad as it looked, however, and just as the cockpit of a jet airliner, with its multitude of knobs and controls, may look like a minefield to the inexperienced, the same can be said of the V-4 power plant. In reality, it's just four single cylinder engines bolted together on a common casing.

On paper, and with its spec sheet more akin to a GP racer, the design should have been staggeringly effective. Most of the numbers certainly add up to an impressive machine.

The world awaited a real fire-breathing machine and fully expected the RD to be exactly that, but what came out of the crate in 1984 was something altogether different. The silver frame was actually steel, painted to look like the alloy ones used on the expensive side of the racetrack fence, while the whole point behind a two-stroke was lost once the RD was weighed. The Yamaha V-4 tipped the scales far closer to machines like the four-stroke GPz600R and a whole load heavier than the RG500 that followed it the year after.

This meant that the all-new Yamaha was too heavy, underpowered and not at all what was intended for the pinnacle of two-stroke design. Did Yamaha simply get scared and water down the recipe across the board, or did Suzuki up the anti once they had seen the fruits of Yamaha's labours? For my money, I reckon a bit of both is near to the truth. Yamaha simply produced a great road machine – easy to own and ride – as a homage to their racing heritage and, when viewed in this light, the RD does exactly that. It goes well, especially if you have never ridden an RG500 Gamma. It steers as expected, (although not as sharply as would be desired at times), and stops before the outer edge of that proverbial pre-decimalised silver coin.

Riding the RD can be full of mixed emotions. This is the world of the kick-start – no electric boot here – and even then the hefty alloy lever



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has to be folded down and out by hand before a good sharp kick has the V-four burbling away, puffs of blue smoke stuttering out of the rear end while the whole bike shakes in anticipation of what lies ahead.

When first setting off, the engine feels powerless and lack lustre. But this is typical two-stroke fare, made even worse as the engine coughs and belches its way down the street before clearing itself and running smoothly on mid-throttle. It's quite happy pottering about low down in the rev range thanks to the variable exhaust technology. While the big RD is completely happy here, it's far better to get the taps opened and the power flowing through the system. In this mode the big lump literally comes alive.

There can be few motorcycle experiences better than a large capacity two-stroke as it raises its game and lifts up onto the pipe, and when this involves four lively cylinders doing their best to take your breath away, the sound, vibes and noise all conspire to create the two-wheeled equivalent of illegal, mind altering, substances. Once the blue smoke has died down, the sharp staccato cackle

of the four exhausts on full song has few equals, in the road-legal sector at least. Even if modern four-strokes outgun the V-4, the feeling when the needle rushes through the power band is not to be beaten easily.

Chassis-wise, one is left feeling as if Yamaha have again over egged the pudding, producing the opposite of what a race replica machine is all about by creating a heavyweight machine and using advanced technology simply for the sake of it. The rear shock is slung under the engine (simply because there was little room for it elsewhere on the bike), requiring a complex array of levers and cranks just to get it working properly. As such the chain lube, unburnt exhaust oil and all manner of salty water and other road crud find a way onto the shock with predictable after-effects.

Anti-dive front forks were an attempt at sorting out the excessive front-end dive under braking and to some extent this does work, but not without considerable cost. The braking feels wooden; a lot of lever travel gets used up in actuating the hydraulically operated anti-dive system; while the front-end stiffens up way beyond what

feels safe, especially under severe braking. Thankfully, the power of the brakes rarely diminishes, the GP racer-like, twin-piston-callipers at either end, take a keen bite on the vented discs, making the stopping experience nothing less than a positive one, even with so much bike pushing them along.

Handling is generally sweet, although it can become unpredictable as the speed builds or the corner tightens. The small 16in diameter and large cross section front tyre is the boss of the show, dominating the proceedings and at times making the rider feel little more than a passenger, albeit a wide-eyed and intensely interested one. This feeling can be kept to a minimum when ridden with some enthusiasm, get the RD into the turn and back on the gas, and in doing so, relieve much of the front-end load from the overworked front tyre. This way all are kept happy, not least the rider who is then left revelling at the stomp of the four-cylinder engine as it chimes on song and the front end goes roughly where it is aimed.

The engine is no less complex, and the need to get all of the parts working in unison, or risk dramatically

losing performance, is a big one. The carb slides must all move together, and with some accuracy, or risk the engine being held back by a slowly responding cylinder. This can be a task fraught with difficulty as, with two carbs on one side and two on the other, and all of them facing away from the bike, it is impossible to view all at the same time. Likewise with the all important power valve system, which is cable operated and as such can shift out of sync as time goes by. On the plus side, the power valve system cleans itself every time the ignition is switched on, indicated by the three stage whirring noise before the engine bursts into life, while the autolube feeds the correct amount of two-stroke oil into each of the four cylinders.

Few, even among today's 'power ranger' four-stroke riders, would turn down the chance to sample such a tool and most would still come away impressed with the way the big RD goes about most of its work, certainly the stroker, kick in the pants is still impressive.

The RD500, along with the Suzuki RG and Honda NS that followed, is a breed of machine never to be seen again, the sight of many separate exhaust pipes belching out the blue haze, or leaking the black crud, is so loved by two-stroke fans yet hated by the greenies and emission regulators. A quarter century or so later and the RD500 is still there at the top of most people's wish list, maybe not to actually own one, but certainly to have a ride on a bike that was so closely styled and modelled after the real thing.

MODEL HISTORY

Rumours had abounded of a multi-cylinder race replica for some time. A road-going version of the TZ750 had been mooted during the early 70s but this never came to be anything more than a prototype and the stuff of folklore. Then in 1973, the RD series offered some of the technology behind the world famous TZ racers, but once again the 'middle of the road' roadster style was kept so as not to lose sales.

When early images of the RD500 were released it certainly looked like this thinking was gone. The birth of this, and subsequent machines from the other leading manufacturers, led to the out and out sports machine we take for granted today. Dropped clip-on style bars and all enclosed plastic fairings and bodywork were pretty radical for the period, but have since become commonplace even if the two-stroke engine inside it has long since gone.

The RD500 isn't a true V-four, but



rather has two 180-degree crankshafts, similar to those found in the TZR250, and arranged so the cylinders sit 50 degrees apart. This layout requires a power sapping balance shaft, simply to iron out the sharp and high intensity vibrations as the revs build up, and isn't the ideal configuration by a long way.

The proximity of the top ends to each other also leaves little room for the carburetors, the two banks of twin 26mm Mikuni's are left well outside the engine block, facing outwards with their inlet tracts winding their way through 90 degrees before

entering the engine. This also adds to the width. The whole idea behind a V-4 is to reduce width but, because of the need for air filters to be placed before the carbs, these have to run inside the lower fairings. It's another thing conspiring to spoil the power party as these are restrictive where they really need to be wide open, so the carbs can breathe.

Once inside the motor the set up is still heavily stacked against the norm; the front pair of cylinders are fed directly into the crankcases as per a modern two-stroke design, while the rear pairing have a more conventional



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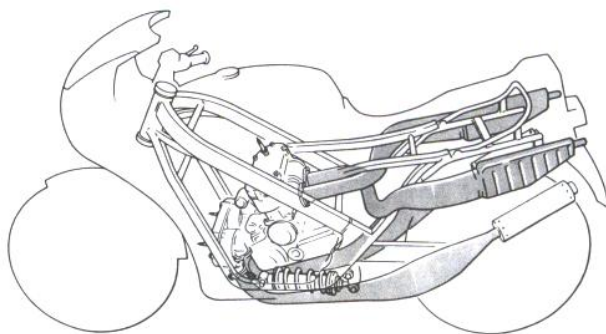
inlet system via the rear of the cylinder wall. Both sets of cylinders are fed by reed valves, but these are effectively too small as they are crammed into this incredibly tight area.

This uneven engine design, (the lower cylinders also run a different compression ratio to the upper pair), has confounded many a tuner, hopeful they could make the race rep into a real goer on the track, but few made any impression in this area.

The exhausts did little to help out either, the lower two follow conventional thinking, and at least look like a pair of expansion chambers, while the upper set twist and meander their way out of the rear of the seat, once again creating almost two completely different engine configurations.

Two versions of the bike were announced in 1984; the steel-framed RD500LC intended for the UK and Europe, and the alloy framed model. This was considerably lighter, while looking virtually identical, with many seeing action in the southern hemisphere in the hot bed of Australian production racing.

Suzuki announced their own race replica during the latter part of 1984, the RG500 Gamma once again styled alongside the GP race bikes but, in the case of the Suzuki, much more

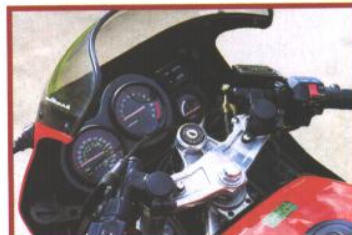


The exhaust pipes have a tortuous route on the RD500LC. Shocker is hidden away under the engine, and attracts road dirt and crud.

so. No punches were pulled in the design and development of the square-four Suzook and it eclipsed the Yamaha in a big way when it arrived in the dealer showrooms during 1985.

For 1985 the RD500LC got an update within the engine, the balance shaft now taking its drive from the rear crank and with altered timing to smooth the excessive vibrations caused by the layout.

A new ignition curve provided a shade more power in the upper reaches of the rev range. None of these improvements did much to alter the perception of the RD, and the Suzuki stole the show with its performance, looks and overall abilities.



SPECIFICATION YAMAHA RD500LC

ENGINE	liquid-cooled four-cylinder two-stroke
CAPACITY	499cc
BORE X STROKE	56.4 x 50mm
COMPRESSION RATIO	6:1 Lower cylinders (6.4:1 upper pair)
CARBURATION	four x 26mm Mikuni
MAX POWER	90bhp @ 8500rpm
TORQUE	48ft-lb @ 8500rpm
IGNITION	Hitachi CDI
TRANSMISSION	six-speed wet clutch chain final drive
FRAME	square section steel tube
SUSPENSION	37mm telescopic anti-dive forks. Rising rate monoshock rear
WHEELS	120/80-16 130/80-18
BRAKES	270mm discs two-piston calipers. 270mm disc two-piston caliper
WHEELBASE	1350mm
WEIGHT	178kg
FUEL CAPACITY	22 litres
TOP SPEED	135mph

