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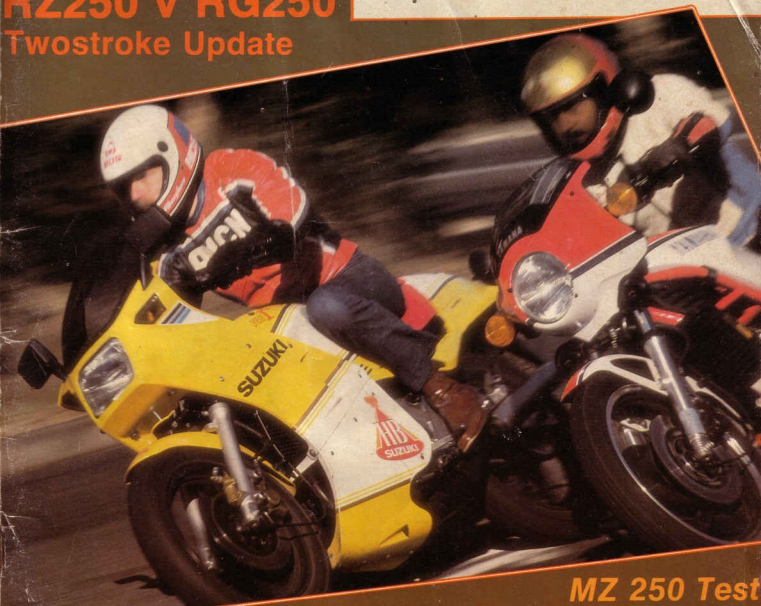
RZ250 v RG250

Twostroke Update

KR 250

**Technical
Run-down**

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MZ 250 Test

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GP Reports

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SURVIVAL OF

The 250 two-stroke sportster class is about to gain two new members — Kawasaki's 250 is featured this issue and Honda's V-twin is due for release later in the year. In 1983 AMCN conducted a comparison test of the then three member class, comprising the Yamaha RZ250, Suzuki RG250 Gamma and Honda's V-three MVX250. Since then, the MVX has been removed from production so that now, in the lull prior to the launch of Kawasaki's KR250 racer-inspired tandem twin and Honda's new V-twin NS250, only two machines remain.

But don't make the mistake of thinking these two are identical to the two we tested twelve months ago — they're not...

The MVX250's brief life has been halted. Honda has withdrawn and regrouped. Now the giant of motorcycle manufacturers is preparing to launch what has already shown itself to be a very worthy challenger. Meanwhile, Kawasaki, never a company to rush into confrontation until its weapons have been honed to razor-sharp perfection, is now also ready. Within weeks the disc-valved tandem twin Greenie will achieve its Australian release, the novelty and promised performance having already ensured sales success.

But for the moment there are only two machines to fight for honours in this class: the RG250W and the RZ250L.

While neither machine has been drastically changed since we ran our previous full comparison in July last year, both have been updated — the Suzuki more so — and it is worth briefly reconsidering these two machines prior to the introduction of their soon to be released competition.

The RG250 which we have at the moment is the WE1 model — the HB replica. Basically identical to the half-faired, basic WE, the WE1 boasts the addition of a lower fairing half, HB Suzuki Grand Prix team colours (yellow and white with the HB Cigarettes logo on the side) and, in this case, a tail piece which is interchangeable with the same seat as that on the straight WE.



Otherwise, the only obvious difference between the two new models is the seat colour; blue for the WE and red for the WE1.

Minor styling alterations have been made since last year too, most notable of these is the redesigned tail which now has a more rounded shape and less angular lines to the flares. Rear indicators are still on stalks rather than in the flares since Australia requires a minimum distance between each lens.

The fairing nose has also been reshaped so that the lower edge juts forward — last year the nose was more rounded — and the handlebar flares have been narrowed and fitted with different indicator lenses. Small changes

Above: Yamaha's RZ250L — less single-minded than the Suzuki, but still a hard charger's machine even though it has more concessions to daily riding practicality.

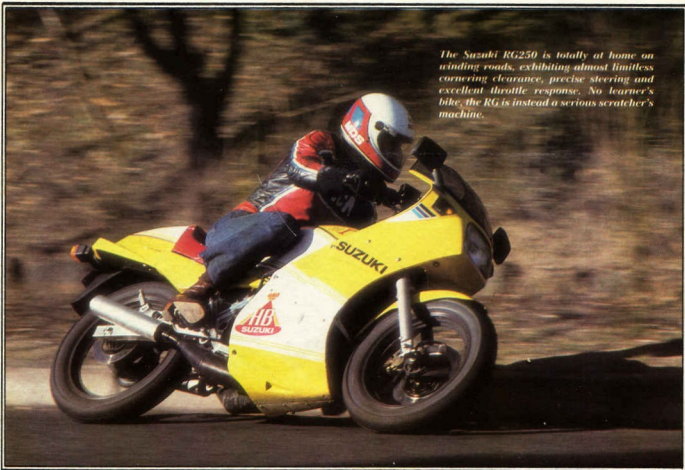
perhaps, but they add up to a more attractive machine, slimmer at the fairing nose and more streamlined in appearance.

On the other hand, Yamaha has barely made any changes to the cosmetics of its RZ250, relying only on a slightly different pattern of the same red and pearl white paint and adding an attractive black and red variant to differentiate '84 model from '83.

THE FASTEST



*R3250L versus
R3250 gamma*



The Suzuki RG250 is totally at home on winding roads, exhibiting almost limitless cornering clearance, precise steering and excellent throttle response. No learner's bike, the RG is instead a serious scratcher's machine.

The Yamaha though, has been the baseline in this class for many years. Any company wishing to enter the 250cc, two-stroke sportster class must inevitably measure its own product against the RZ — a none to easy task since Yamaha has steadily carried its twin through many stages of evolution and is generally regarded as perhaps the top stroker manufacturer in the world. It's 54 x 54mm 250 has been very thoroughly developed and refined.

Suzuki's 250 has the same bore and stroke measurements, shares reed valve induction and in many respects is a quite similar unit, however, it does not have Yamaha's YPVS exhaust power valve — in fact, the RG engine is a very simple two-stroke, relying on few tricks in its attempt to oust Yamaha from the top spot.

Yamaha's bag of goodies includes a balancing tube between the inlet tracts to even out gas flow through the 26mm round slide Mikuni carbs as well as the electronically controlled, servo-motor operated rotating valve in the exhaust port which raises or lowers the upper edge of the exhaust port according to engine speed.

Meanwhile, Suzuki uses a similar balance tube between the carbs and, for 1984, a system called 'EACS' (Electronic Air Control System) has been installed. Basically an extremely simple device, EACS measures ignition system pulses, operating a solenoid switch once voltage

reaches a level which corresponds with 6500rpm. At that point, the switch flicks open and allows air to be drawn through its own tiny filter, through the solenoid and into each of the 28mm, square slide Mikuni carbs.

The intended aim of all this is to lean out the mixture just below the start of the power band, improving efficiency and theoretically boosting power and spreading it over a broader range.

Compression ratios are 7.4:1 for the Suzuki (last year it was 7.1:1) and 6.0:1 for the Yamaha (the same as 1983). Suzuki has also made minor changes to the squish band in the head and to port shapes and timings with a resultant claimed power increase of 5bhp, bringing it to 49bhp.

Although Suzuki's engine is not as sophisticated as Yamaha's, the same cannot be said of the rest of the bike — and a bike is, after all, a package — the sum of its parts. In these other areas, the Suzuki is stunningly sophisticated.

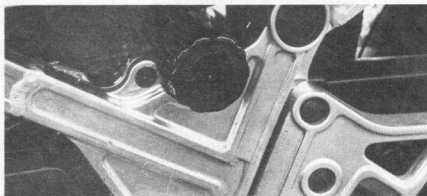
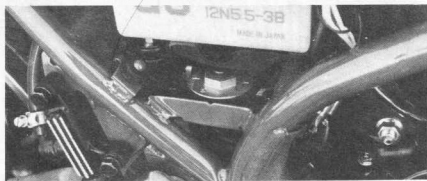
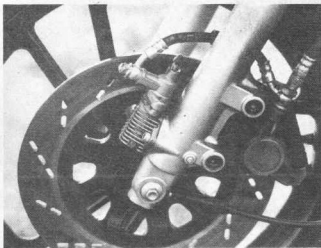
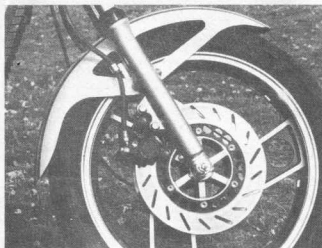
Take the frame. In 1983 the original RG boasted a first: square section, all-alloy frame tubing. Not bad, but now the bike has been taken one step further and has dimpled box section alloy for even greater rigidity and strength — bringing a racing chassis development which is only 18 months old onto the street! Even further improving it is the use of a cast alloy steering head which obviates the need for welding (last year the headstock was a built-up item of tube and bearing

seats) and resulting in a far lower chance of inaccuracy or misalignment.

The RZ frame hasn't changed. And why should it? It is a race-bred design which works and works well. It is superbly rigid and bears a striking and attractive resemblance to a TZ frame. If it has a drawback, it is simply in weight — round section steel is not the lightest of materials but, on the other hand, it is more durable even if only because it can be straightened with relative ease should the bike be thrown down the road.

Yamaha has stuck to the tried and proven 18-inch cast front wheel, backing it up with 26 degree steering rake, 96mm trail and the same 1385mm wheelbase as before. Suzuki has likewise changed little from last year, keeping its original 16-inch cast front wheel and rake/trail figures of 28.6 degrees/102mm with the same wheelbase as the Yamaha at 1385mm. Since most of the dimensions are similar, weight bias, all-up mass and centre of gravity height in conjunction with the smaller front wheel must account almost entirely for the lighter steering of the Suzuki.

The difference in chassis materials is one of the major contributors to the Suzuki's enormous weight advantage. Other, lesser contributors include lighter and smaller fittings all round — instruments, indicators, footpegs, wheels — and the fitting of only a single front disc compared with the Yamaha's twin system.



Top: Yamaha's twin anchors (left) are possibly the most powerful in the business and have slightly more feel than the Suzuki single (right). Adjusting the Yamaha rear end (centre) is more involved than the same job on the Suzuki (bottom), requiring seat and sidecover removal. An exposed knob handles the job on the RG.

While the Yamaha scales in at a fairly heavy 145kg, the Suzuki tips the scales only to 132kg (with full fairing, 131kg without), giving it a massive 13kg advantage. Toss in claimed power figures of 49hp for the Suzuki and 47hp for the Yamaha and the Suzuki would appear to have a significant power to weight advantage. Every horsepower on the Yamaha has to carry 3.08kg, compared with the Suzuki's 2.69kg.

Suspension on the two bikes is, though superficially similar, very different in operation. Both feature single shock, rising rate rear ends, however the slope of the rate increase is different, the Suzuki becoming stiffer more rapidly with shock stroke. Another difference is in the pre-load adjustment systems (neither has provision for damping alterations). Yamaha uses a toothed belt for mechanical preload — a spanner from the under-seat tool kit must be used to turn the adjusting nut after the right sidecover has been removed.

In the Suzuki's case, a hydraulic master cylinder, operated by turning a large knob under the rider's left leg, is readily accessible and can even be dialled in while actually riding.

Suzuki has not, however, taken the opportunity to offer any adjustability at the front, fitting instead, a hydraulic anti-

dive system which last year was astonishing in the way it kept the forks extended even under heavy brakes. This year (perhaps in response to some criticism from riders who had a hard time growing used to the feel — the front end simply did not dive at all!) Suzuki has softened its anti-dive effect so that, while it still prevents bottoming out, the front end will at least sink through much of its travel.

The forks on the RZ250 Yamaha have no anti-dive mechanism at all but counter this through the fitting of air caps which enable fine tuning of fork firmness. Though this allows the rider to make the front end stiff enough, any pressure which stops excessive dive is uncomfortably harsh in normal use and doesn't give the same 'best of both worlds' feel as does Suzuki's anti-dive. The Suzuki's new forks are firm but pliant in steady riding and only stiffen under brake application.

In fact, the emphasis on the Suzuki in almost every area has been toward handling precision and ease for the hard-charger. The anti-dive, the firmer springing both front and rear, greater rebound damping at both ends, lighter weight, much better cornering clearance — even the layout of the RG is more racer-oriented and puts the rider in a racer crouch before an instrument panel which is a true replica of road race gear right down to the rubber mounting and button idiot lights. Only the inclusion of a speedo concedes streetability.

Though Yamaha's RZ is obviously an extremely competent sportster (it still wins by far the majority of 250 production races) it's emphasis is a little less specific and allows for a little more adaptability. It has a larger and slightly more comfortable seat, softer and more comfortable suspension, a smoother engine, a more upright seating position with wider handlebars more suited to everyday use and a confident 'big-bike' feel of steadiness which is more confidence inspiring for less aggressive riders.

RZ-RG Update

As the test went on, the two bikes diverged even further and it became increasingly clear that the RZ, while plenty sporting enough, is still usable as a learner or 'hack' machine. The RG is far less so and was never designed to be any kind of learner bike. It is not sedate in the least; it is a bike for the experienced rider who wants the ultimate street racer. The fact it is a 250 and therefore legal fare for learners is an irrelevant coincidence.

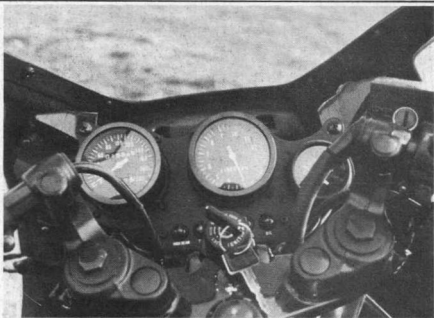
Riding the bikes only confirms this difference, but before going on, it is necessary to speak briefly about Suzuki's EACS system.

As delivered, the Suzuki was so short on horsepower below 6700rpm that we suspected serious problems with carburation or ignition and actually took it back to Suzuki Australia. There, we were assured that the bike was fine and that it was truly representative of the model. Quite frankly, we were astounded — Suzuki added the EACS in order to improve mid-range, and here we were with a bike that had far less than even last year's RG (and that was none too strong below 6500rpm).

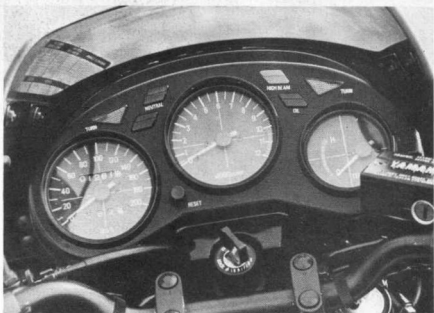
As it was, the bike would feel 'dead' until 6700rpm at which point power would come on sharply with a solid kick which was very difficult to control smoothly — even a TZ250 is generally less severe.

Suzuki checked the bike, found nothing wrong and suggested we try it with the EACS disconnected. Surprise, surprise! It was an entirely different bike. Suddenly the power between 3000 and 6000 was boosted by about five percent and from there up it began building gradually and strongly until at 6500rpm you were well and truly into the power band. Though this struck us as odd, similar reports have been filtering back from overseas so we can only assume the EACS, while having a small beneficial effect at really high revs, detracts from tractability lower down.

As standard, the problem is quite severe since the gap between first gear and second is such that only revving the



The difference in each bike's intent is obvious in comparison of the instrument styling. The RG (above) is intentionally 'bolt-on' while the Yamaha (below) is more integrated and road oriented. Both work just as well.



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Above: Suzuki's left handlebar. Combination switch keeps it uncluttered and simple.



Above: Yamaha's left handlebar has more switches, but features an index finger beam flasher.

engine well into the red zone enables selection of second gear with decent horsepower on tap. Disconnect the EACS (a very simple procedure involving lifting the rear of the tank and pulling out a two-pin plug) and the overlap of first and second gear becomes enough to change gear and still be 'on the pipe'.

The difference this makes is enough to take the RG from being a poor second in this area, particularly around town, to being comparable with the Yamaha in the bottom end.

The reason the Yamaha doesn't suffer from this difficulty is simply that it begins to produce power from as low as 6000rpm as delivered, continuing through to redline at 10,000rpm. With

only slightly taller ratios (and almost the same gaps between the first three) there is plenty of overlap all the way from first to sixth.

With the EACS disconnected, the Suzuki suddenly began to show that, in many respects, it was a better bike in town than the Yamaha. With bottom end power now virtually on a par between the two bikes, differences in clutch action became the major differentiating factor.

250cc two-strokes in this state of tune will not pull at anything below 4000rpm, so a deal of clutch slip is necessary even for slow get-aways. While the Suzuki handled all this with perfect equanimity, offering smooth, reliable, progressive

take-up with neither grabbiness or excessive slip, the Yamaha clutch felt vague, a condition which became worse with the greater heat generated in quicker take-offs. There was nothing 'wrong' with the Yamaha's clutch, it's just that the Suzuki's was so close to perfect.

In other ways however, the Yamaha was superior. Rubber engine mounts make the RZ a very smooth performer. It's exhaust chambers are less radical and certainly give off a more subdued two-stroke 'cackle' — perhaps not quieter, but giving that impression with its deeper note. The seating arrangements are also more suitable to carrying a pillion and the footpegs are rubberised



Above: Suzuki's right handlebar. Lights, kill-switch and throttle.



Above: Yamaha's right handlebar. Almost identical to that on the Suzuki.

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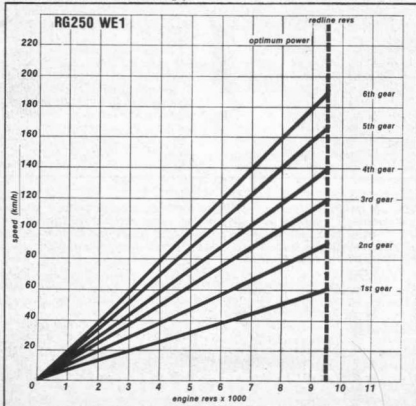
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Below: grey area represents revs above the beginning of the 'power band'. As you can see, there is precious little overlap between first and second gear. With the EACS connected, there was in fact a 3kmh gap.



Above: the RG250 is a thorough-going street racer with appeal built into every line. It's also damned quick.

for better vibration isolation. The mirrors are more widely spaced and give a view of what's behind on the road rather than the Suzuki mirrors' view of your elbows.

In most ways the Yamaha is very much the more practical mount and would be the recommended bike (of these two) for any novice. The beauty of the RZ is that it can be used to learn how to ride and then, once experience has been gained, it makes a scratcher that will hang onto the Suzuki in the hills — differences in rider ability will be more significant in any contest between these two bikes than will any attribute of the bikes themselves.

However, if you are a fully experienced rider looking for a small bike which makes few concessions to practicality while excelling at go-for-it riding in the twisties, the RG is your machine.

The Suzuki's handling is top notch in every way. The chassis is compact and rigid, the suspension is responsive and accurate, cornering clearance is almost unlimited (at least with the standard Michelins which failed to impress greatly in the dry and were a little questionable in the wet) and the seating position is perfect for dragging the knee around the

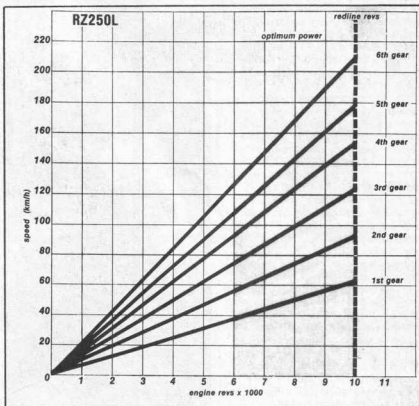
boulevards and mountain twisties.

The Yamaha is no slug either. Point it at a winding road and it will at least keep the Suzuki honest, but the suspension begins to feel a little loose, attitude change under brakes (front end dive) is fairly drastic and things begin to drag on the ground well before the limit of tyre adhesion is reached. The Yamaha's tyres are nothing to write home to mum about either, but they appear the equal of those on the Suzuki.

As far as real racing is concerned, the Yamaha has probably reached the end of its long-lived domination in the class. The Suzuki can out-accelerate it slightly from a standing start and the changes made from 1983 give it a top speed which is a few kmh better than the Yamaha.

The Suzuki's gear ratios (first to second aside) are probably better suited to keeping the engine near peak performance revs and the bike's handling is better overall. Disregarding for the moment the unknown quantities of Kawasaki and Honda's new bikes, the Suzuki appears to be ready to rid itself of the 'second-best racer' status it gained last year when, while it could keep up with the hordes of Yam twins, it very rarely managed to take a win.

Below: Yamaha's RZ lacks some of the pure sports character of the RG, but makes up for it with more creature comfort.



Above: due to the wider spread of power (1000rpm more than the RG) the Yamaha has a greater overlap between first and second gears in spite of optimistically tall final drive gearing which fails to make use of peak power in top gear.



RZ-RG Update

In summary though, there are a few things which need further emphasis. The Suzuki, as delivered (if our bike is anything to go by and we are assured that it is) is a most difficult bike to ride on the street. With power coming in so suddenly at such high revs, great handfuls of revs are needed even for comparatively sedate take-offs. Any speed below 60kmh is a regular pain in the butt and it won't pull top gear with any kind of authority until you are travelling in excess of 140kmh!

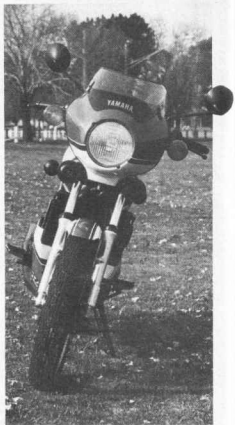
If that were all there were to it, we would have to write the RG off as a costly mistake on Suzuki's behalf. Fortunately, the problem is child's play to rectify. Pull out the two-pin EACS connector and the machine becomes totally rideable — in this condition it is easier to ride sedately than the Yamaha (though only just) while still accelerating harder and achieving a better top speed.

Which bike is presently the best in its class? It's up to you. With the EACS still connected though (we are, after all, supposed to test bikes *b.g. str. ch.*) the Suzuki is a loser, period. However, with the EACS disconnected it is simply a question of how much emphasis you want to place on sports ability (Suzuki) and how much on street civility (Yamaha) and that makes it a tough decision.

Our unanimous choice? Stock standard, the Yamaha. With that slight modification, the Suzuki.



AMCN wishes to thank Yamaha Australia and Suzuki Australia with special thanks to Barry Ditchburn.



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