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An RD 350 that drills a CBX?

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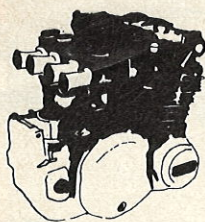
The Buffalo Rally
Are you a statistic?

— See p28



THE NEW YAMAHA XJ 750 RH

HOT BIKE OF THE MONTH



ARNO'S GET QUICK CHEAP RECIPE

A few tweaks that'll slam your RDLC right up into the one litre performance stakes ...

IT was a pity, really, all the hoo-hah prior to the release of the Yamaha RD350LC. Reams of press releases arrived with annoying regularity on the desks of the country's motoring scribes, proclaiming how the bike was "too fast to race", that the AA had banned it, then un-banned it. Rumours flew thick and quick about how this bike was a road-going replica of the famous TZ, how it "would annihilate 750s, even stay with an 1100" said the rider of the one we saw here in Pretoria.

Man, this was what we'd been waiting for. A Bols-out two-stroke that would "call back

the past", images of the dreaded blue two-stroke haze ruling supreme at the stoplights once more.

We couldn't wait to lay our grubby gloves on it and when we did ... well, sure it **WAS** fast, definitely the quickest up-to-400 cm³ bike around, but nowhere near what we'd been lead to expect. A drag race that we arranged with a 750 four cylinder proved this beyond doubt, and we began to suspect that the RD350 would have its work cut out to live comfortably in the 550 class on the tracks, which is in fact what did happen and is still

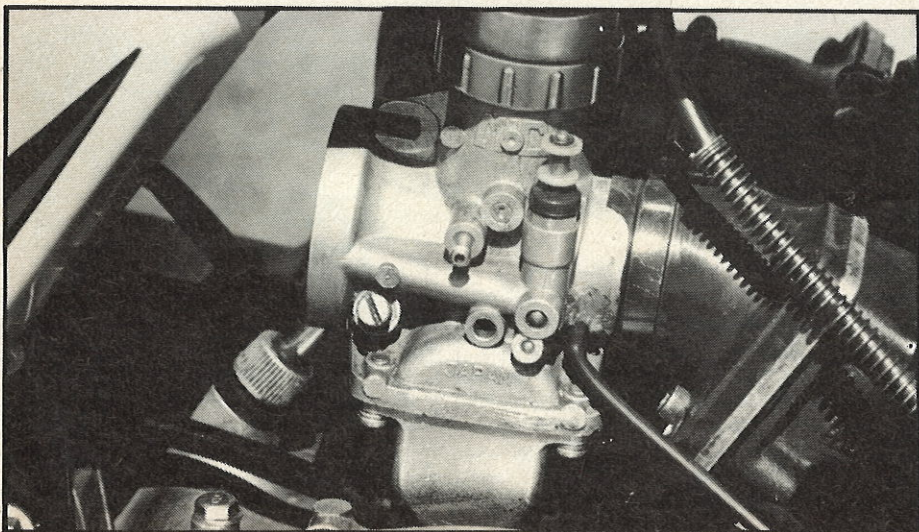
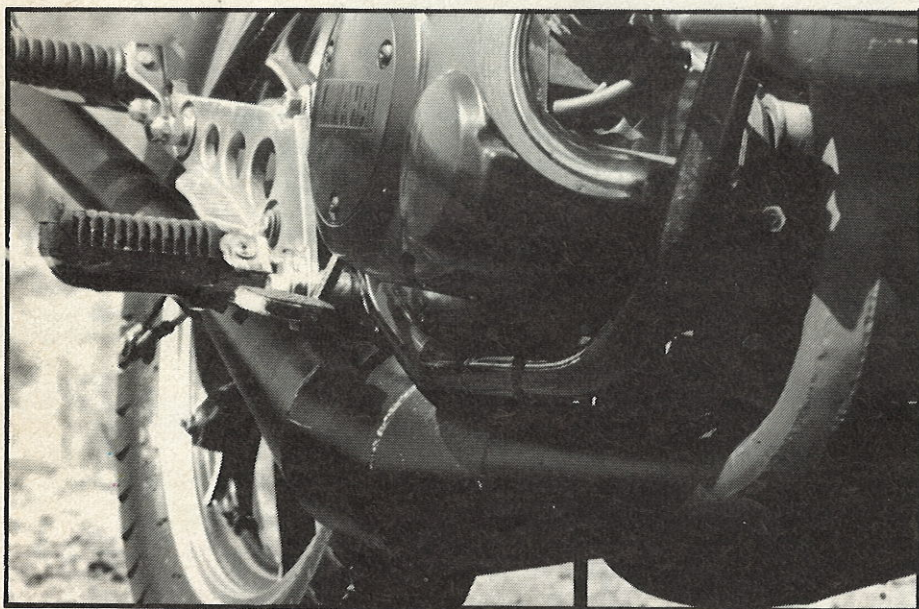
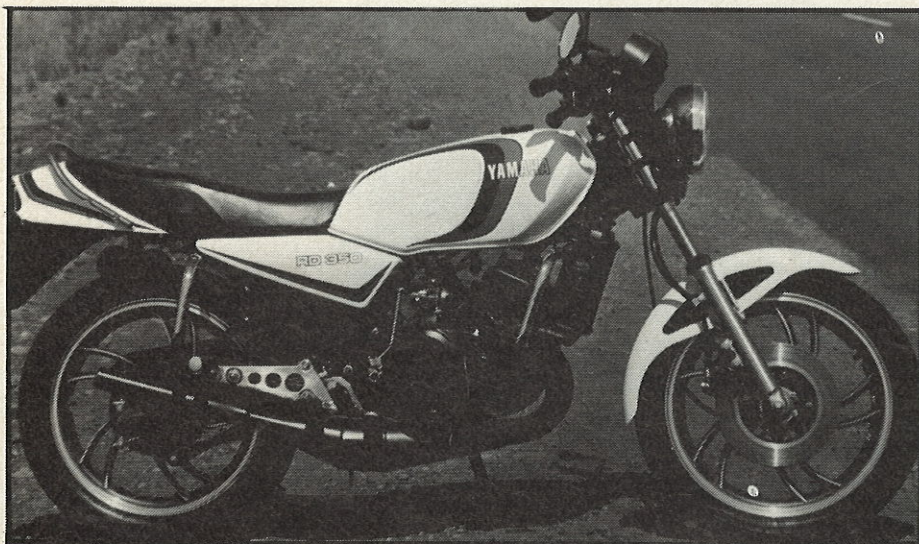
happening.

So much for all the hype. The fact remains that the little RD350 is a gem of a bike, light in weight, and with still a fair amount of that piz so beloved of two-stroke fans when the bike comes onto the powerband at the 6000 r/min mark. But a TZ? Nope.

And this is where our two-stroke man, Arno Stofberg, comes into the picture. He needs no introduction to our regular readers, being the man who built the expansion boxes for Cleeve Stone's infamous Kawa Triple

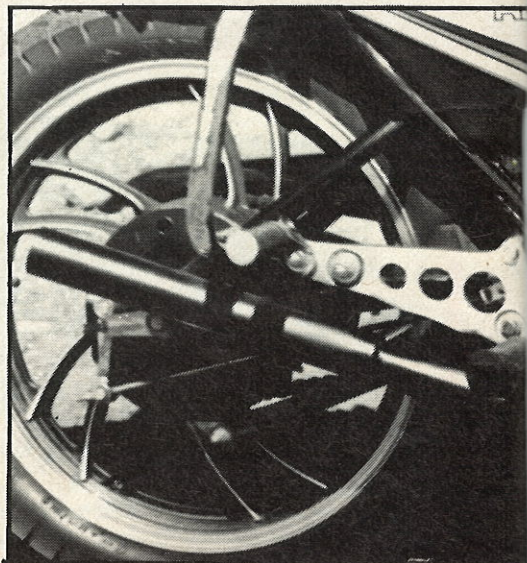


It wasn't long before RD owners began contacting Mr. S. with the idea of getting their bikes to boogie on a 750 wavelength.



The bike was still in the development stages, and I'm due to spend the whole of tomorrow buzzing around on it, so you'll have to plough through all these Stage I details first before we can give you an honest, unbiased account of the Stage II's vices 'n' virtues. Deadlines are looming!

First of let's take a look at the sort of performance you can expect from a typical stock RD350 LC: A motor that can only be described as "peaky", with little useable power below 6000 r/min. Once it gets on the boil, though, you have a fairly flat powerband all the way up to 9 grand, at which point the oomph falls away completely. This power is useable on the street thanks to the close ratio six-speed gearbox that Yamaha slotted in and the bike will cruise happily in sixth gear



from 120 km/h and pull its top end (on the Reef) of 185 any day of the week. Some guys might claim a higher top whack, but all three stock RD's I've ridden so far have had that identical top speed.

As far as acceleration goes, we tried a stock model against Yamaha's new 550, and found that the four stroke still had a clear-cut advantage.

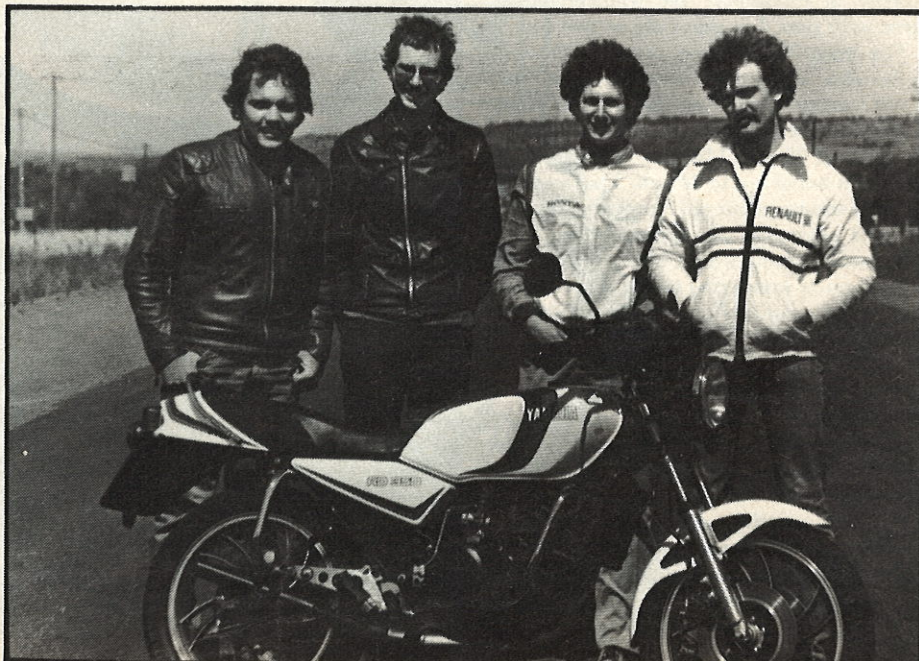
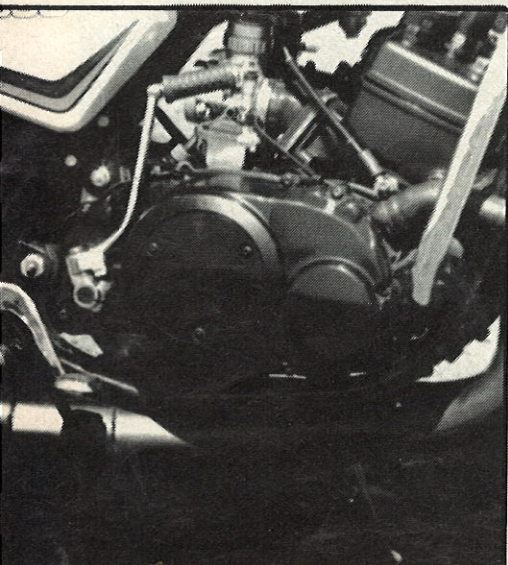
- So obviously there are a number of RDLC owners buzzing around who are in the market for a power boost. The first step, says Stofberg, is to get the cylinder head squish clearances right, by milling 1 mm off the head face, and removing the cylinder-to-crankcase base gaskets. The stock cylinder head gasket is still used. Arno says that the stock squish angle in the head is fine once the compression ratio is upped by shaving the head.

- The RD comes stock with 26 mm carbs II "piddly little things" I but in the Stage I application bigger carbs were ruled out in the interests of keeping costs down. Trick here is to bore the carbs out, in a lathe, to 27,5 mm. They are bores slightly off centre, a "few changes" are made to the slides, and all the relevant jets are juggled, these being bigger in all cases.

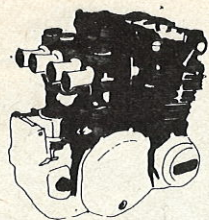
- The stock airbox on the RD is extremely restrictive and this should be junked, in favour of a set of K&N filters.

- The stock RD has a smaller exhaust port than the old RD350 and 400 models. The original pipe on the LC is designed to work well in conjunction with this diminutive port, there being little blow-by action (fresh gas charges being swept straight out of the exhaust port before being burned up) But with the expansion boxes that come with the Stage I package, the port is far too small. Arno thus sets to with a rotary file, enlarging the width and raising the height of the port quite a bit (we pressed him, but he refused to be specific in terms of millimeters) and the exit part of the port must be reamed out a lot.

- The Stage I pipes are designed to deliver peak power at 9000, with the gear change point at 10 000, so as to ensure that the mill is always on the boil. There is no ways that the motor, fitted with these pipes will rev past the 10 G mark, so it's nice to know that there's a built in safety factor accompanying the conversion. Two strokes will rev interminably if you want them to, but they don't last too long at a constant 12 000 r/min.



HOT BIKE OF THE MONTH



The object of the Stage I conversion, says Arno, is "to retain reliability, but still get a sizeable increase in performance." He'll charge you R300 to do the whole job outlined here, and, you'd better believe, you get the kind of power increase that would cost twice that amount to build into a four stroke motor.

The bottom end power, what little there is in a standard RDLC, has not been sacrificed at all. And when that tach needle hits 6500, you'd better have all your weight over the handlebars, if you don't want to be suddenly gazing up at telephone wires.

The power comes in with an almighty bang at this point, and we found standing starts take one heck of an amount of practice and skill just to stop the thing from wheeling crazily. The power comes on hard and beautifully strong all the way through to nine Gs, as witnessed by our top speed of 195 which was pulled both up a slight rise, and going down the other way.

There isn't a stock 750 four stroke that'll live with this bike up to its top end.

And if that isn't good enough for you, you'll have to go to ... **THE STAGE TWO CONVERSION:** Now we are moving into more exotic areas in the search for performance. And the price follows suit, say, a round R1 000 if you want Arno to do the job for you. And because his income centres largely around making ring dingers scream louder and faster, he's not giving all his secrets away, such as the precise amounts of metal that he removes from the stock barrels.

- The head specs for Stages I and II are the same, i.e. 1 mm removed from the mating surface. Stofberg reckons that more power could possibly be realised through running an even higher compression ratio, but at the expense of reliability. We wholeheartedly agree with him, but more about that later.

- The biggest difference between the two conversions, at least to the casual observer, is in the carburetors. For the "warm" one, Arno junks the stock 26 mm units and grafts on a pair of 32 mm Mikunis, which in turn have been bored out to 34 mm. The mouth of the carb also has a fair old bit of metal shaved off. And naturally, the appropriate needle, slides and jet changes have been made to suit. In case you're wondering where to get hold of these "juice junkies", they are fitted to Yamaha's YZ125 machines.

- 'Course, these big carbs don't just bolt on to the stock reed blocks. You would be a dodo to even try it, because the small reed blocks would restrict all the flow that you'd gain by fitting the bigger carbs in the first place. Arno recommends the reed valves from a YZ125 D or E model, and these are in fact the biggest reed blocks that you can bang onto the cylinder barrels, as there are cylinder studs in the way that preclude the fitting of bigger valves.

A nice alternative would be to dispense

with the reed valve entirely, and use a straight piston port induction system. This is a tweak that Stofberg plans to try in the future, possibly on his own bike. A piston port set up would have the advantage of accepting nice, fat 38 mm Mikunis.

- The intake port is modified to accept the larger reed valves and the bottom edge of the port is dropped a fair amount to increase the booster port's flow.

The transfer passages are reamed out some, and Arno tried to achieve a loop-port set up, in other words, the gas now flows from the sump in a semi circle to the combustion chamber, rather than the passage with two distinct right angles that it has to contend with in the stock barrel.

The transfer port windows are lifted, in the region of 2mm, to achieve more time/area, so that the expansion boxes which are to be fitted can have more time to suck in a fresh charge of gas once the exhaust cycle. All four transfers and the booster port re lifted by the above amount, while the angles of entry into the cylinder remain more or less the same as on the stock bike.

- A lot of work has been done on the exhaust port. The height is now the same as that on a TZ350, while the port width has been increased to give it an elliptical shape, as opposed to the squarish shape that it was originally. Much "meat" has been ground away from the exit section of the port, and the diameter on the Stage II port-exit is 38 mm, as opposed to the 32 mm of the stock motor.

- The pipes that Arno has designed for the Stage II conversion, start with a diameter of 38 mm (hence the port exit-width mod). They are far more radical than the Stage I pipes, and they let the motor peak at 10 000 r/min, with a usable rev limit of 11 000, at which engine speed the pipe "chokes" the motor off. The eleven grand mark is the gear change point for angry riding now, and once again, it's nice to know that it won't rev past that point, for safety/bankbalance reasons.

The pipe has a tapered bend, starting at 3°, and the diffuser angles are almost as radical as a TZ350's, the total length of the pipes being about 5 cms shorter than those of the Stage I.

Thus the power band on the Stage II bike is broader than the band of its mildly -tuned "brother" and while it still comes on strong at 6500 r/min, it comes in with less of a "bang" but tapers off about 1000 revs later than the Stage I, and at 10 000 it's making more than a few more horses than the Stage I. Remember that a stock RLDC peaks at around 8000 and drops off at 9000, and you can immediately see where the difference lies. Revs mean HORSEPOWER, old fruit!

Ah yes, getting back to how the STAGE II performs on the road. Well, folks, it goes quicker than any road-going 350 cm³ bike has a right to. Just for fun, we lined it up against the latest Honda CBX. From a roll-on start in first gear, the little RD pulled out about 20 m on the six cylinder monster, and stayed up front right up until 200 km/h, at which time the CBX came barrelling past, the rider of the one-litre bike enjoying a good 215/220 km/h reading on the speedo at that stage. The Stage II hung in for a while, I saw 210 on the speedo, and then the motor felt like it wanted to seize again, so I pulled in the clutch and called it a day.

A subsequent check told us that one of the spark plugs had spat out its electrode. But Arno says we can rest assured that by the time you guys are reading this the Stage II bike will be running RELIABLY with megabikes, and judging by his track record, we won't lose any sleep over going along with his promise.

Gearing on both bikes is stock at the moment, but Arno already has a 17-tooth sprocket for the motor on order from Japan, as he feels the Stage II bike is well able to deal with taller gearing.

Owners contemplating doing the mods themselves would also be well advised to beef up the clutch springs, by dint of a few washers, if they plan to ride the sweat out of their bikes all the time.

On reflection, we liked the Stage I better than the hotter and more crotchety version. It wasn't that much slower than the Stage II and it's a lot lighter on your wallet than the big-carbed bike. But some guys will put up with ANYTHING just to be FAT CAT at the next traffic light. — *Stuart Johnston.*

