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SUPER BIKE

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PLUS

World's Quickest Ducati?

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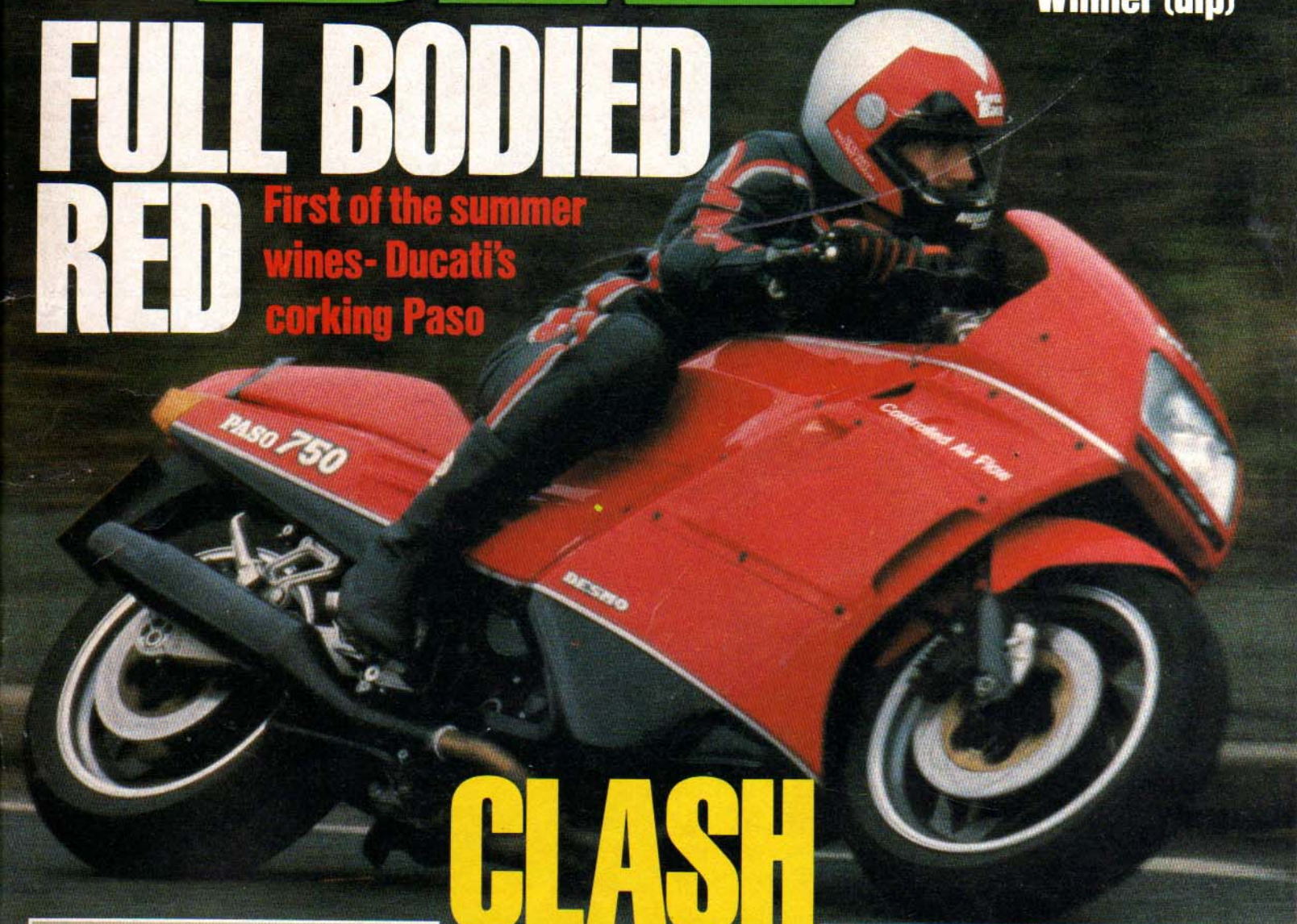

CLASH OF THE HYPED ONES

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PLUS Honda CBR600, Transalp, Yamaha FZX750, TZR250...we ride 'em all!

Mi££ionaire Motorbikes

Luigi's Hammer

A 107bhp, 160mph SS Duke (yes, he has a modified crank)

Story by Mike Clay

Nobody is actually claiming that Pete Thomas's 1010cc bevel-twin is the fastest road Ducati in the land; but it probably is. At first sight it doesn't look terribly exciting. Sure, it's got a mechanical anti-dive on one of its fork legs, and a monoshock to give the old haemorrhoids an easier life. But there's a dirty great NCR fairing hiding the mill; and behind that is where the wonders truly begin.

The story really starts back in 1978 when Pete was taking a maritally enforced rest from two wheels. One bright morning on his way to work, he was forcing his BMW automobile through a 105mph Hertfordshire bend when a bike came steaming past on the outside, as if Pete was going backwards. By performing prodigies of illegal driving Pete finally caught up with the rider and was able to discover that the bike was a Ducati.

Now, Pete's father is an Italian, so the revelation was like a divine voice crying: "Get ye off thy ass, and buy ye one, kid." So he did, the very next day.

Trouble was, the Duke soon won first place in Pete's heart, and that inevitably led to divorce. Pete packed a bag, boarded the Duke, and headed for Europe. Whilst swanning around Germany, laying bricks and riding the Duke, he somehow ended up working for the renowned Ducati tuner, Alfred Bajohr. That Bajohr is a gifted, innovative engineer is beyond dispute, but alas, his business acumen is probably more on a par with that of the average three-toed sloth. Consequently there was rarely any hard dosh around to pay Pete with, so wages usually came in the form of a crankcase here or a carburettor there.

Eventually, Pete arrived back in this green and septic isle with a valuable fund of skill, knowledge and a 153mph, 970cc vee-twin bolide. Unfortunately, by then the flavour of the month in Nipponese technorockets was already a little faster; so a new machine was put on the stocks in downtown Biggleswade. The current incarnation represents the latest stage in a long, hard road of development. If it doesn't look very pretty, Pete makes no apologies — he doesn't want a machine that he'd be frightened to drop. This beast is for hard riding.

Heart of the matter is an extensively lightened crank which has only had the benefit of static balancing as yet. Dynamic balancing will follow eventually, and could release another couple of horsepower. An eccentric crankpin lets the pistons move another 1.6mm to give a 76mm stroke. The big ends run on work-hardened bronze bushes, an unusual choice of material to say the least, but nonetheless one that seems to have cured the age-old Ducati problem.

The crankcases themselves have received copious amounts of welding to beef them up, and an extra web has been inserted over the blind layshaft bearing. Main bearings are eleven ball, rated to a continuous 9500rpm, while virtually all the remaining bottom end bearings are to a higher spec than standard.

Pete uses 92mm Mahle pistons, the crowns of which he machines himself to give good squish and balanced compression between the two cylinders. Thanks to their much lighter gudgeon pins and to the mining operations Pete applies to the insides, these pistons actually weigh less than the originals. The standard iron cylinder liners are replaced by alloy ones that are Nikasil-lined to provide a nice, close fit on the pistons. This in turn allows more of the piston-skirt to be hacked away until Pete swears it's practically non-existent! Pete flowed the heads himself and opened everything out to accept a 46mm inlet valve and a 40mm exhaust in place of the standard 40/36mm items. The valves are Mercedes parts, their iron seats made to Pete's specification to provide a 0.5mm seating band. The guides are locked in place with a grubscrew apiece.

The inlet ports carry a front cylinder stub each in an effort to keep everything equal. They mount Dellorto carbs, reworked by Malossi to 42.5mm choke, which entails junking the accelerator pumps. Exhaust gas exits, via an NCR 2 into 1, into a megaphone that can in no way be described as a silencer. Should Pete ever take this beastie racing I suspect he'll have trouble passing an ACU noise test. On the road it is highly reprehensible — and utterly glorious!

In derefence to the large pistons, and the hearty compression they have to overcome, an electric foot is a necessity. Taken with its extra battery and put against the junked kickstart mechanism,


DUCATI

One extra oil feed directs a spray onto an internal crankcase wall, from where it is misted back over the gear cluster.

Electrickery is courtesy of the latest 300W alternator, and has been causing Pete some concern, with one unit self-destructing and the replacement picking up and scuffing. Machining to increase the air gap seems to have cured the problem, but the precise cause remains unknown.

The frame again is from NCR and weighs less than two-thirds of the original, but still handles the hundred-odd gee-gees of the mill with contemptuous ease. The NCR swinging-arm was built to accept a wide tyre, so all Pete had to do was brace it and add a mounting for the monoshock. The bracing is all ex-Ducati and includes a section of GTS rear frame rail. The shocker was purchased from a breaker and was originally used to control the back end of a 550 Kwacker. Front forks are standard Marzocchis, with the addition of a mechanical anti-dive on the left-hand side only (as long as the standard speedo drive is retained, it can't be fitted on the right because of the difficulty of mounting a floating caliper).

The brakes are basic Gold Line Brembos, squeezing rigid discs. The rear caliper floats, and hangs below the spindle, but something ain't quite right down there. It kills the speed all right, with a reasonable amount of feel, but it also judders unpleasantly as you slow towards a halt. Pete suspects pad material to be the cause and plans to change it soon. There's an unusual rubber mix on the bike, with a 150/70 Metzeler MBS (sport compound) on the back wheel, and a 110/80×18 Michelin Hi-Sport at the front. The traditional Imola-style aluminium tank holds a full six gallons, providing a range that would be the envy of many tourers.

Due to a recent nasty with the gearbox (which led to the extra oil feed mentioned earlier), the machine was still running in when I rode it, and so Pete asked me to keep the revs down a little. This was more than a little frustrating as the monster only comes onto the cam at six grand.

There are no throttle stops on the carbs, but careful setting of the throttle will allow quite a slow tick-over. Let the revs fall too far though and the light flywheels manifest themselves by letting the engine die instantly. Surprisingly, there is still plenty of bottom end and the engine will pull from two thou. From 2500rpm to 4000rpm it feels much like a normal 900SS (though lumpier). But from here on in, power starts to build in a very serious manner indeed. In fact at a little over 5000 the engine is accelerating so powerfully that I came very close to that magic 6000 on a couple of occasions. Clearly the power available in the upper rev range is quite extraordinary, and the bike must be putting something like 100bhp onto the road. With only the sylph-like form of a vee-twin to thrust though the atmosphere this must equate to a road speed comfortably in excess of 160mph. It's geared for 168mph at 9000rpm and this really doesn't seem over-optimistic.

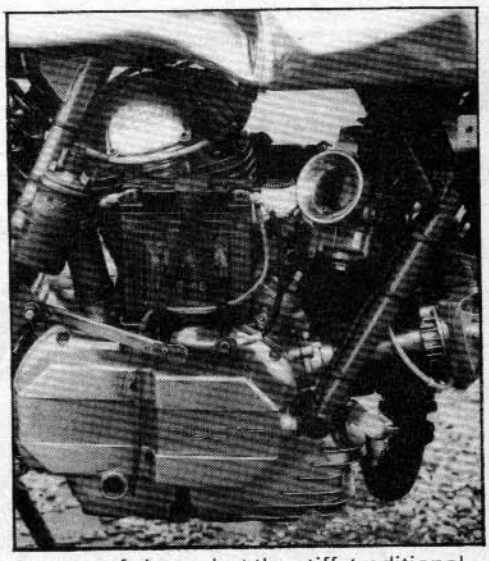
On the road, thanks to the tall gearing, a good handful of revs is needed to pull away without bogging down, but even with the enforced rev limit there was still performance aplenty. The highest speed the weight penalty for this piece of wanton luxury is 18lb. The sprag clutch is courtesy of a BL Mini and a little modification — it costs £16 instead of £70; and it's stronger too.

The desmodromics are taken care of by a 1974 race cam. Hotter than the favoured Imola cam it gives over a millimetre more lift. Primary gears are straight-cut, with a higher ratio. This, by spinning the clutch faster, effectively reduces the torque loadings on the transmission and solves the notorious Ducati instant-slip clutch problem at a stroke. Ignition is still by the standard Bosch set-up, but driving twin 6v coils, which fire twin plugs in each head. Pete is not entirely happy with this arrangement though, and plans to change to Lucas Rita before long. Significantly, the engine runs 10° less advance than standard.

If the foregoing little parcel of tricks sounds impressive, it should be remembered that it is all made possible by a completely reworked lubrication system, which channels all the oil through a cartridge filter every time it goes round the engine. The system incorporates an oil cooler, and a filter block from a BL Montego. This has a bypass valve, so that if the filter should become blocked, the bike suffers neither an exploding oil cooler nor non-circulation of the oil.

Driving all that lovely Castrol R 40 round this scenic route (courtesy of several yards of Goodridge hose) is a comprehensively modified oil pump. The cognoscenti will tell you that Ducati oil pumps have been unobtainable for some time; consequently Pete had the pump chambers bored oversize and offset, and larger (12 tooth) impeller gears made up. Couple this with new drive gears that spin the pump 25% faster and you have a lot more oil circulation than before, and (with the plain big-end) a normal oil pressure of 60–80psi. I saw was around 110 before I shut off, because everyone coming the other way was flashing me, and it was still accelerating like a SAM missile. (After the flashing I stopped to check that nothing was hanging off the bike. When I started off again it was to find a jam sandwich lurking up the next side turning — thank you flashers, one and all!)

At these sorts of speeds on A roads, handling is excellent, with the sort of relaxed super-stability for which Ducatis are justly famed. The Kwacker rear unit performs satisfactorily and should save Pete a few beer tokens on chipped fillings. On our normally pot-holed and lumpy-bumpy back lanes the story is just a little different: nothing really goes wrong or



gets out of shape, but the stiff, traditional Italian front forks feel distinctly mismatched to the responsive rear end.

This bike is a shade lighter than a stock 900SS, and with the sculpted tank and humpy seat the rider sits very much in it. It also feels lower than the standard SS, all of which combines to make it noticeably quicker and easier to flick through a set of esses. I only managed to provoke one real protest from the back tyre, on a damp corner, but it was at what I considered a rather modest pace. However, the front remained utterly solid, and with a Duke's wheelbase, misbehaving rear ends are easily brought back into line. The slight glitch with the rear anchor has already been mentioned, but for normal cruising around, most of the retardation you need is on tap merely by closing the throttle — those big, big cylinders, diminutive flywheels and the high compression ratio soon put everything into shutdown mode.

This bike would obviously be capable of acquitting itself honourably on the track, and indeed, on swoopy A roads I reckon the only bikes able to leave this Duke would be converted race machines. To counter any danger of this happening, and to deal with the turbo/nitrous oxide brigade, Pete is laying plans to fit a supercharger!

By the time you read this piece Pete Thomas should be in business and ready to convert your Ducati to a Luigi's Hammer replica. Contact him at Tomasso Tuning, Chapel Fields, Biggleswade, Beds SG18 0ND. Phone: 0767 318502.

Thanks for help with advice, parts and service go to: Service Exchange Parts, Kegworth, Derbys; Firma M & S Burgstetten, West Germany; Joy Engineering, Ware; Derek Chinn, Bedford; Serck Speed, Bedford; North London Valve & Fitting Co Ltd, Kingsbury; Don Mintex Ltd, Bedford; Mantles Garages Ltd, Biggleswade; and finally, for moral support, to Doris Schlener.

STOP PRESS

Just as we were going to press, Luigi's Hammer was put on the Heenan & Froude rolling road dyno of Joy Engineering in Ware. With lash-up exhaust venting and 650 miles on the clock from its last rebuild, Pete Thomas's bike produced 40bhp at 2500rpm, 88.5bhp at 6000rpm, and peaked at 8000rpm with 96bhp at the rear wheel. Allowing for transmission drag, crank output was estimated at 107.5bhp.