

BIKES  
THAT  
REALLY  
MATTER  
THIS  
MONTH



Factory swingarms were originally made of magnesium, but fear of cracking meant the team remanufactured theirs in aluminium



Never been to the Manx? Never say never...



Rider Harrison and two other enormous names in racing

[ CLASSIC RACE BIKES ]

# 916 like no other

This **Ducati 916** was keeping swarms of ZX-7RRs and GSX-R750s behind it at the Manx GP until disaster struck...

**T**o the amazement of fans at the Manx GP, this Ducati 916 took the fight to Michael Dunlop's über-trick Suzuki GSX-R750 for one and half laps of the TT course. Alas, the Ducati didn't make the finish, but it was a great first attempt to turn a highly strung Italian race bike into a Manx GP winner.

Naturally it's no ordinary 916. The Classic Superbike class is for pre-1997 machines, which means teams can hunt for British and World Superbike parts to uprate performance. 'We're allowed to be 1000cc so we're running a 996 engine,' says Tim Keay, the boss of Key Racing, who developed the bike.

'Inside we have competition pistons made by Pistal that increase the compression ratio to about 13.5:1 and factory race heads. There are titanium valves and race cams like the ones used in World Superbikes and British Superbikes back in the day - we mix and match them to try and get the torque you need for the Isle of Man.'

The Ducati is now making around 155bhp at the back wheel - still

less than the GSX-Rs and Kawasaki ZXR750s, but not by much. 'Earlier in the week Michael Rutter [on a 1100cc Suzuki XR69] was coming past Dean [Harrison] doing another 10-15mph,' says Tim. 'But two corners after the straight Dean was past him. So we have an advantage around the twisty bits, but of course there aren't so many twisty bits round here compared with short circuits.'

Besides getting enough power to keep rivals in sight over the multiple flat-out sections, another problem faced by the team was the amount of magnesium used in the chassis components of 1990s factory Ducatis. Tim didn't want to risk using them because of their tendency to crack, so went to extraordinary lengths to replicate parts in more resilient aluminium.

'This was a BSB bike back in the day, which had magnesium wheels, yokes and swingarm. All that's been taken off and we've actually made a swingarm to emulate the [factory] magnesium one. That gives us better traction out of the corners. I've got several

## SUSPENSION

Like most Manx GP bikes, the 916 has Maxton fork internals (the tubes are standard 916) and rear shock. Wheels are Dymags, replacing the original Marchesinis.

## CHASSIS

From a 1996 BSB bike, but with all magnesium components replaced with aluminium ones, including the swingarm.

## ELECTRONICS

Minimal, because the bike is pre-1997. Ignition is by Magneti Marelli, with trimming done via a Power Commander.

## TANK

This is a rare factory carbon fibre tank, bought originally by Eraldo Ferracci and acquired by Tim for £6000.

## ENGINE

Ducati's 996cc V-twin with factory cylinder heads (£4000 a pop), titanium valves, and competition pistons. Putting out 155bhp at the back wheel at 11,500rpm.



magnesium swingarms so we took one of those and scanned it inside and out, had patterns made, then had it sandcast in aluminium, then took them to an aircraft heat treating company. There's extra material around the eccentric hub so it's a bit stronger around there too.' Tim didn't want to put a price on that, but we estimate it's well into five figures.

'Also, in the 1990s Ducati ran sandcast cases, and if you don't pour it correctly the interface between the hot and cold material [for example, when molten metal flows round part of the mould and meets metal on the other side that has already cooled] causes a lap, which can crack. We've found that all the original sandcast cases have

cracked, so we're running the later 996 cases which are the same but made better and are a lot stronger.'

But of course, it's the engine which provides the most challenges when it comes to doing four laps of the TT course at race pace - Harrison's first lap average was a mind-frazzling 124.77mph. 'Back in the day, British Superbike and World Superbike teams used to run about 500km (310 miles) before throwing everything away - cases, crank, rods, pistons, the lot,' says Tim. 'You kept a few things in the [cylinder] head, but almost everything was lifted at 500km.' At the Manx, that's not enough for practice week, never mind the race.

'In BSB trim this bike would be doing 13,500-14,000rpm, so by taking nearly 3000rpm off that [the rev limiter is set at 11,750rpm], we're helping it last longer.' Alas, half way round the second lap, the alternator failed. 'There was nothing we could have done to prevent it happening,' says Tim. 'It was just one of those things. Next year we'll win!'

**'We're allowed 1000cc so we're running a 996 engine'**