

AGAINST

All Odds

The days of 'privateers' winning world championships seem long gone, but in 1989 a small Spanish team did just that. Alan Cathcart looks back at the team, and the bike which delivered the goods. Photos Emilio Jimenez.

Hollywood couldn't have scripted it better. Scene One: bike-crazy kid from Barcelona fakes elder brother's signature on form so as to be able to go racing at 14 years of age aboard 80cc moped stripped and prepared for competition. Scene Two: cut to two years later, when same kid wins Spanish championship for such machines, admits to his true age, and is promptly signed up by the all-powerful Derbi team to go GP racing for them in 1987, mainly in the European Championship, but with the odd GP thrown in. Finishes second in his first GP, his home 80cc event at Jerez, but pressures of life as low man on the totem pole in a four-rider Derbi squad are already starting to be apparent.

In emulating Johnny Cecotto's feat in becoming the youngest ever world champion at the age of 19, with five GP victories to his credit, Alex Criville (pronounced Cree-vee-lay, not Criv-ill) did more than prove that life often imitates art, and truth is equally exciting as fiction. In winning the first world championship ever achieved by the rider of a Rotax-powered bike, Criville also brought well-deserved and in some ways overdue reward at world





BIKE
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AGAINST

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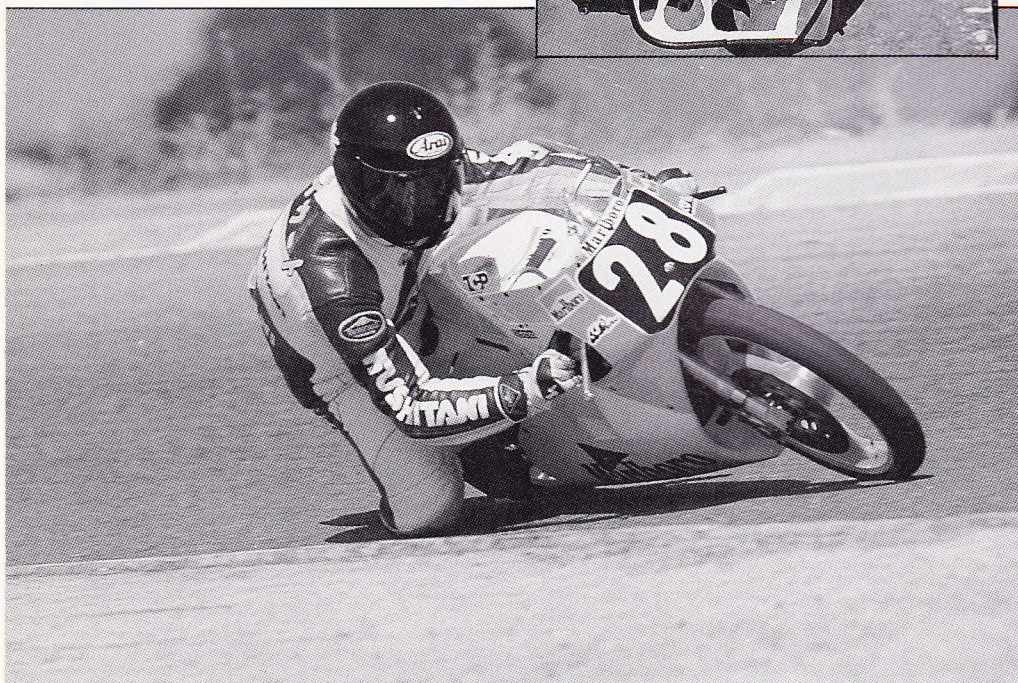
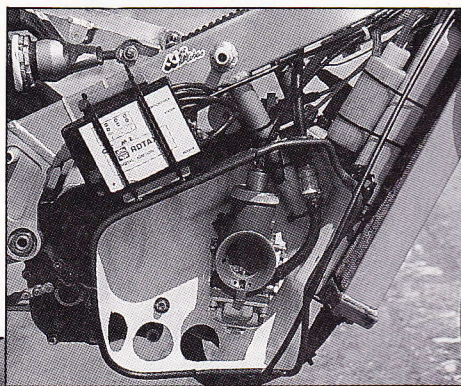
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championship level to one of the most influential GP chassis designers of the past decade, Antonio Cobas, and to one of the most dedicated and enthusiastic sponsors anywhere in the two-wheeled world, Jacinto Moriana, aka 'JJ'.

"We're a much smaller team than Derbi for example, but in fact the bike that Alex won the 1989 title on was literally a production JJ-Cobas TB5 that we developed during the course of the season in such a way that any of our customers with similar resources could do. The bike is fundamentally no different from any of the dozen or so production versions we sold, so rather than a triumph for the home special builder, our title represents a victory for the privateer, thanks to Alex's riding and the engine development talents of Eduardo Giro."

Indeed, because exactly 20 years after he amazed the GP world with the performance of his single-cylinder Ossa 250 ridden by the late, great Santiago Herrero, one of the unsung wizards of two-stroke engine development has also achieved his just reward of a world title. Giro was responsible

not only for the remarkable reliability of the Cobas's Rotax engine last season – the only mechanical breakdown, a piston that went in the race at Spa – but also for extracting Honda-beating horsepower from an over-the-counter motor. How much? "Eduardo doesn't deal in figures, so much as constant improvement," says Cobas, "but we had a little over 40bhp at the gearbox at 12,800rpm, with maximum revs of about 13,200rpm before the power fell off steeply. Sometimes we were faster, sometimes the Hondas or the Derbi, but by the end of the season we were very evenly matched in terms of engine performance. All that made the difference was the choice of gearing and carburation on the day – which is where Eduardo's experience and Alex's greatly increased sensitivity told in the end."



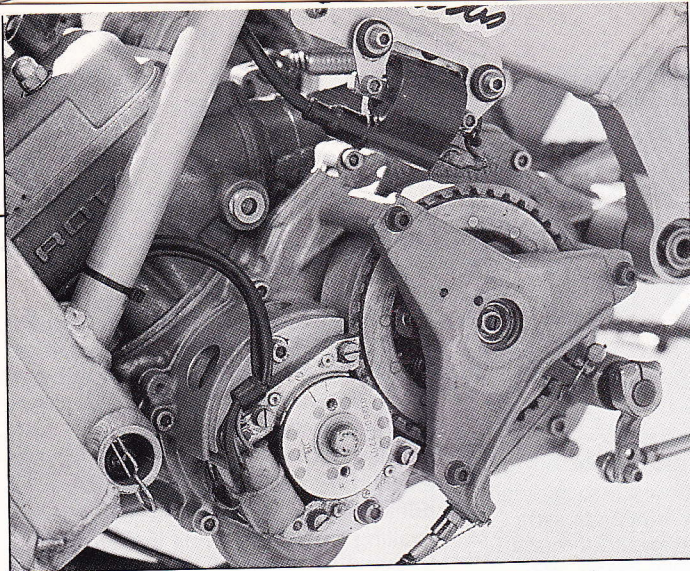
The TB5 is the third in the series of 125 Cobas designs, which began in 1987 with a version built to accommodate both the old MBA twin-cylinder engine and the then new, but as it turned out completely disastrous, single-cylinder motor from the Italian company. For 1988, Cobas turned to the new kart-derived Rotax engine – logical, really, given his close collaboration with them since 1980 in the 250 class – and built a series of 12 custom bikes with the Austrian motor. But this had suffered from the same problem as the MBA – considerable vibration, especially at the high engine speeds at which a disc-valve engine like these makes its power.

For 1989, Rotax resolved the problem by incorporating a gear-driven balance shaft in the new Type 128 engine, as well as fitting a new cylinder with revised porting offering improved midrange performance, a different cylinder head and 38mm flat-slide Dell'Orto carb. Cobas revamped the '88 chassis slightly to accommodate the revised engine, altering the steering geometry and rear suspension linkage as well as narrowing the bike by 30mm overall compared to its TB2 predecessor. Various other subtle changes were also made, including a slightly different seat and fairing made in carbon fibre, which allowed the weight to come down to just 66.5kg half-dry, fitted with Forcella Italia front forks and a White Power rear unit in customer form.

Originally, the JJ-Cobas team had no intention of contesting the 1989 125cc World Championship; the TB5 had been designed as a customer racer, and as well as his work advising the Minardi F1 car team and Sito Pons on chassis set-up, Cobas was looking forward to developing his own 250cc V-twin GP racer which had at last reached completion after a three-year gestation. But Criville's sacking from the Derbi team changed all that, and when the decision was made to go GP racing last season, there were only three months before the first GP in Japan.

Accordingly, Criville's bike was very close to standard for the first couple of races, even using 18-inch wheels and standard tyres to register its debut

Cathcart goes through another set of Kushitani boots. Testing 125s can be expensive!



The powerplant which stopped Honda taking a clean sweep of the 1989 solo titles.

victory in Australia, before Michelin saw the light and started supplying the special 17-inch rubber – a front crossply and radial rear – from the Spanish GP onwards. This required Antonio to alter the suspension and steering geometry to suit, but apart from that and the upside-down White Power forks that became available for the season, it was a stock TB5 chassis-wise, but a bit heavier at 67kg.

Giro's engine work was only slightly more extensive, concentrating on expanding the usable power band and improving overall performance. Surprisingly, he retained the standard five transfer/three exhaust eight-port Rotax cylinder without modification, says Cobas, but the carb was bored out to 39mm and the crankcase modified to permit a larger inlet tract with altered rotary valves for different port timing. Long hours on the test bed produced a new exhaust pipe that the team ended up using in races all season long, even though Giro brought slightly different ones to almost every race for them to try out. The standard pistons were replaced with special Mahle ones to give a higher compression, matched by new cylinder head inserts. A carbon fibre airbox was carefully developed to optimise carburation with a much bigger one constructed out of a Renault R5 Turbo unit, to enable the Rotax engine to run as low as 45 degrees, Giro's ideal temperature reading! That's real cool, man . . .

These modifications raised the standard Rotax engine's 38.5bhp output at the gearbox to over 40bhp, a figure slightly improved still further when, like most other Rotax teams, Giro tried the motor without the balance shaft fitted. The power expended in driving the shaft was thus restored, and in fact Criville won his first GP with the bike in this form in Australia. "But the power gain was so small as to be insignificant – less than 1 bhp," says Cobas. "Refitting it not only made the bike

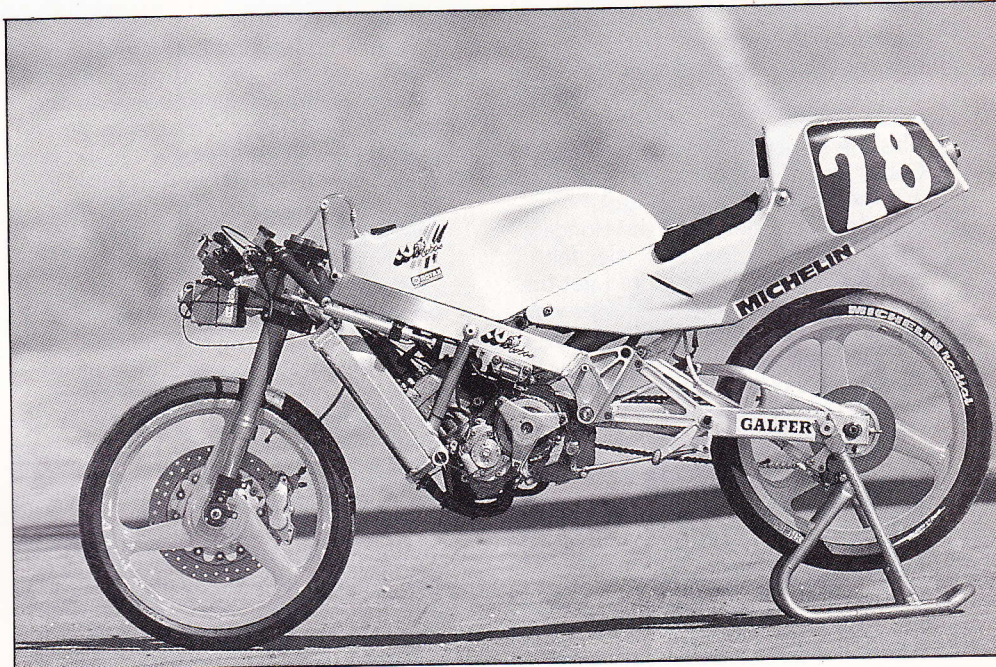
much easier and less tiring to ride, it also gave the chassis an easier time. We didn't run it like that again." Considering that broken engine mounts were a frequent problem on the '88 JJ-Cobas TB2, as with other Rotax-powered bikes before the balance shaft was fitted, this was probably just as well, but the vibration also affected the carburation at high rpm as well, making the decision an even more logical one. "Once we saw how competitive we were in Australia, our policy from then on was to take as few risks as possible mechanically," explains Cobas. "We had to make sure that the bike would finish the race, and that meant sacrificing possible performance gains if we weren't completely certain of their reliability." To finish first, you must first finish, as the old racing axiom has it – something that Derbi, on the mechanical front, and Gianola from a riding standpoint, seemed to have forgotten in 1989 . . .

It was this policy which prevented Criville from racing at the first 1989 European GP, at Jerez in April, with the most significant engine modification Rotax came up with during the course of the season. This was an electronic power-valve, controlled Japanese-style off the rev-counter by a pair of cables and a small Ni-Cad powered electric motor in the nose of the fairing, which replaced the pneumatic power-valve traditionally used on the Austrian firm's GP engines since the mid-80s. This gave more precise control over the operation of the valve and slightly improved midrange performance as a result – but Cobas didn't race with it till two races later in Germany (which Alex also won, just as in Spain), by which time they'd tested its reliability to Giro's satisfaction.

Similarly, the team employed the same standard Rotax digital ignition system, offering a choice of four different pre-programmed curves, all season, rather than risk the more sophisticated – but unproven – computerised system specially developed for them in Spain by Motoplat. This offered an infinite choice of curves by means of a pre-programmable microchip. This has been found to offer superior power delivery in testing but was never actually raced.

RIDING

Having ridden both Aspar's title-winning 125 Derbi and Gianola's Honda runner-up the previous season, I



— AGAINST — *All Odds*

BIKE *ride*

thought I had a pretty good preconceived idea what Criville's '89 JJ-Cobas world champion would be like. The JJ-Cobas is a sort of super-Honda, both in terms of its power delivery and riding position: it feels well-balanced and almost spacious — if you can use that term for such a tiny bike, with only a 1270mm wheelbase! Moreover, because the TB5 offers such a neutral posture, it's less tiring to ride hard for any length of time, and especially a 45-minute GP, because you have less body weight on your arms and shoulders — an old gripe of mine about Cobas designs and certainly a factor on the Derbi.

The result is a bike that is not only extremely effective, as determined by its title-winning exploits last season, but a whole lot of fun to ride: it's predictable, smooth and forgiving, a bike that seems to respond to your thought processes almost before you've issued them, yet can give a light slap on the wrist to stop you exceeding either its or — more likely, in my case — your own limits. The high degree of sensitivity offered by the White Power inverted front forks sent a message that the chassis relayed faithfully: all the rider needs to do is act on information received. Don't take your phone off the hook!

It's the same story at the rear, where Cobas' rising-rate rear suspension has a precision and sense of control completely missing from the Honda's cruder cantilever rear end. Alex felt after a couple of laps before I got on board that the rear White Power was set up too stiff for the bumpy track but my extra weight made the difference and it performed superbly around Jarama's switchback course.

The single 280mm front steel Zanzani disc, matched to a four-piston Brembo caliper, gave ample braking performance even with my extra weight aboard — so much so that once I started to get brave it was all too easy to lift the back wheel if I grabbed too hard, too late, especially at Bugatti where the downhill approach only

exacerbated matters. The TB5 JJ-Cobas is fitted with a pro-squat linkage at the rear, so that by not only using the rear 180mm Zanzani alloy brake instead of regarding it as a cosmetic adornment, but doing so fractionally before you squeeze the front brake lever, you load up the rear suspension and minimise forward weight transfer.

Of course, all that's easy for me to say, and even possible for me to do at about 90 percent of Alex Criville's title-winning pace: it's that last 10 percent that's most important, or even actually the last two percent because that's certainly what enabled Alex to smoke the opposition when it mattered last season. In Sweden, and again in Czecho, he found himself embroiled in

He simply rode rings around the opposition in the corners, two-wheel drifting like a speedway rider, but with the perfectly set-up suspension of the JJ-Cobas working to maximum effect beneath him

do-or-die battles that had strong men reaching for the smelling salts. Deciding that this was becoming altogether too fraught, the 19-year old veteran simply dropped his lap times by a second and stretched out a lead over his rivals in spite of, as was clearly the case in Sweden, having a distinct top speed disadvantage.

He simply rode rings round the opposition in the corners, two-wheel drifting like a speedway rider, but with the perfectly set-up suspension of the JJ-Cobas working to maximum effect beneath him. Again, at Jerez, it was possible to see the little Cobas almost floating over the bumps of one of the most demanding circuits in the GP calendar — while his Derbi and Honda mounted rivals struggled to control their leaping, twisting machines. Anytime someone can lower lap times by a whole two seconds in a single season, as was the case with Criville at

Jerez compared to Aspar's lap record of '88, you know something special is happening — especially when engine outputs have remained almost constant in the meantime.

Having said that, the JJ-Cobas's Rotax engine offers a big increase in rideability compared to the Derbi, rivalling Gianola's Honda in terms of torque — not usually a word used about a 125 single! — and flexibility. The carburation is perfectly set up, a tribute to the long hours spent by Giro on his dyno, and the engine pulls smoothly from 8000rpm up to just over 13,000rpm in a manner that completely belies its rotary-valve nature. The power valve is obviously responsible for this degree of flexibility, but unlike on 250 engines I've ridden fitted with the same porting and Rotax's pneumatic exhaust valve, the Cobas doesn't have a step in the power band around 10,500rpm when the valve is fully open (or closed, depending how you look at it).

Instead, there's a completely smooth transition which is presumably due to the more refined operation of the electronically-controlled system. The advantage of such a punchy motor becomes apparent when you tackle the hill behind the pits at Jarama, for example. With the gearing fitted, I had a choice of revving it hard in third, in which case I'd hit the 13,000rpm redline just as I crested the hill under the bridge and not only had the front wheel off the ground as I did so but more importantly had to change up at an inconvenient moment while trying to avoid running off the edge of the track as well as cope with the mini-wheelie. Better instead to short-shift into fourth at about 10,500, then let the engine's strong midrange power carry you up the hill before grabbing fifth appreciably sooner for the run up to La Ceiga. The smooth and torquey delivery of the Giro-modified Rotax engine is all-important in a situation like this.

Mind you, had I been the bike's regular jockey rather than Alex — well, we can all dream! — I could have opted to change the gearbox's internal ratios to obtain a set of ratios more suited to my needs. The cassette-type cluster is readily accessible thanks to the plate on the right side of the crankcase behind the sprocket which unbolts to allow it to be removed.

JJ-COBAS TB5

ENGINE

Engine type..Water-cooled single-cylinder rotary-valve two-stroke
Bore x stroke.....54 x 54.5mm
Displacement.....124cc
Ignition.....Rotax digital CDI
Carburation.....39mm Dell'Orto flat-slide
Starting system.....Push

TRANSMISSION

Type.....Six-speed extractable
Primary drive.....Gear
Clutch.....Multi-plate dry (5 steel/4 fibre)
Final drive.....Chain

CHASSIS AND RUNNING GEAR

Frame type.....Aluminium twin-spar
Rake.....26 degrees
Trail.....95-100mm
Wheelbase.....1270mm

Front suspension...White Power inverted telescopic forks, 42mm upper/35mm lower
Rear suspension..Fabricated box-section aluminium swingarm with single White Power unit
Front/rear wheels.....Marchesini 2.15 x 17 front, 2.75 x 17 rear
Front/rear tyres.....Michelin crossply 8/56 x 17 front, radial 10/59 x 17 rear
Front brakes.....Single 280mm Zanzani steel disc with four-piston Brembo caliper
Rear brake.....Single 180mm Zanzani aluminium disc with two-piston Brembo caliper

DIMENSIONS AND PERFORMANCE

Weight.....67kg with oil and water
Weight distribution.....54/46% static
Maximum power (claimed).....40.5ps at 12,800rpm (at gearbox)
Maximum speed232kmh (at Hockenheim)
Test bike supplied by.....JJ Cobas Engineering, Barcelona, Spain
Year of construction.....1989

Rotax offer a huge choice of ratios even as standard – seven each for first and second gears, four for third and three each for the top three ratios. Even this wasn't enough for the Cobas team, who had the Austrians make them two extra choices for each of the top two and bottom two ratios, as well as an alternative primary drive ratio!

Meantime, Cobas and Moriana plan to challenge the Japanese on another level, this time commercially by marketing no less than 30 customer replicas of Criville's title-winning bike. Having had requests from all over the world – including Japan, where let's not forget, the 125cc class is the most popular there is at national level – they're setting up a network of distributors, often in conjunction with Rotax as is the case in Australia and Sweden, for example.

Honda's domination of the 125 privateer ranks looks like being threatened for the first time since the

advent of the single-cylinder formula – all of which makes Antonio Cobas's achievements all the more ironic. Not only did his intuitive skills in chassis development assist Sito Pons to clinch a second successive 250cc title for

Honda in 1989, he also defeated the best efforts of the Big H to win the 125 title for his own company! Is that what they mean by Tit for Tat?

Alan Cathcart
Photos: Emilio Jimenez



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merchandising



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LONG SLEEVE TEESHIRTS



WINDCHEATERS



HOODED CHINOOK

MAIL ORDER FORM:

1. TEE SHIRTS SMALL MEDIUM LARGE X. LARGE @ \$29.95ea = \$

2. LONG SLEEVE TEE SHIRTS BLACK WHITE @ \$37.95ea = \$

3. WINDCHEATERS @ \$49.95ea = \$

4. HOODED CHINOOK (black only) @ \$56.00ea = \$

5. FLEECE SKIVEYS @ \$59.95ea = \$

POSTAGE & HANDLING \$ 5.00

TOTAL \$

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TO: MAXIMUM SPORTS WEAR AUSTRALIA
 P.O. BOX 225, SAN REMO, VIC 3925

SIGNATURE: NAME:

EXPIRY DATE: ADDRESS:

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