It's got some front, this here Tryphonos and isn't backwards about coming forward

FUTURE SHOCK

Abandon all prejudices and look to the future – hub-centre steering. You know it almost makes sense

WORDS: BOB GRAY PICS: JOHN NOBLE

Donington's pitlane is a hive of activity and noise. Bikes whizz along it like planes on the deck of an aircraft carrier, mid-conflict. My bike is less active though. It's just returned from a 20-minute sortie around Donington's short circuit and is now resting in front of an open garage.

"What's that then?" says a guy in red overalls who's sauntered up to admire the yellow bike. The obvious thing to say is *"a motorcycle, a two wheeled version of one's car"*, but that would be facetious. Besides, it looks like he already knows this.

"Ask him," I say, nodding

Bob, who often struggles to tell his arse from his elbow, got to grips with a bike with two back ends surprisingly quickly

Tryphonos frame redefines minimalism in its own small way

"600s CAN'T LEAVE THIS BIKE THROUGH FLICKY BITS"

RYPHONOS

towards Mike Tryphonos, the creator of the machine. The guy looks expectantly at him.

"It's a Tryphonos," says Mike.

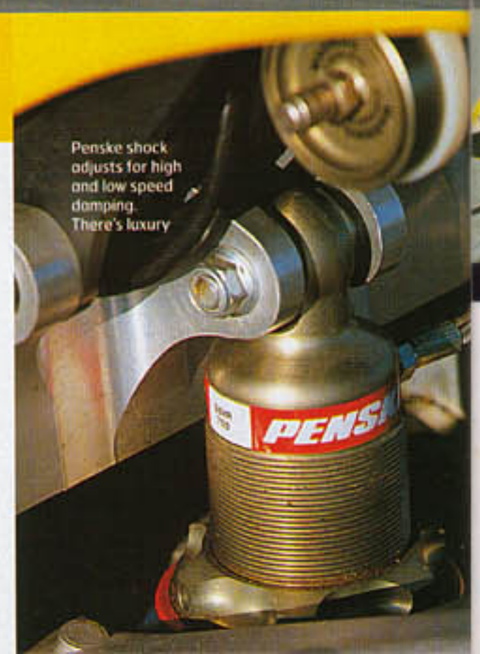
"Ahh," replies Mr Overalls, none the wiser.

We're not trying to be difficult. We'd be the same if the bike happened to be a FireBlade and someone asked *"what is it?"* But there's a difference between the Tryphonos and a Blade. The Tryphonos is hub-steered – it has no forks. So what people really mean when they ask *"what is it?"* is: *"They don't normally build 'em like that, I'd be surprised if it's any good"*. And surprised they would be, because it is good.

Twenty minutes ago I was standing in the pitlane as John Bickerdike from Performoto warmed the Tryphonos' 900cc Suzuki engine. The upswept carbon can barked a crisp sound as fresh unleaded tickled the pistons. Once the temperature gauge hit 40°C the bars were passed to me. Tentatively.

The first striking thing is the Tryphonos's compact build. It's like straddling a malnourished whippet. It's not uncomfortable, just odd to find a large inline four that isn't wider than me.

Lift a leg onto the high rearset and tap down into first gear. Feed in a whiff of gas and let the clutch lever out. So far so good – it feels no different to any other bike.



Penske shock adjusts for high and low speed damping. There's luxury


No room for a carbon yoke protector here

On the track I take things easy at first because there is a pair of new Avon Azaros on board, and dropping it now would be very bad. One gentle lap later they're scrubbed in and getting up to temperature.

Nail the throttle. The airbox screams for more and the exhaust sounds like a machine gun fired in a foghorn. The resulting noise startles the rear tyre and we're off. Bang-bang-bang. Gears slot in and out of place in rapid succession and the tacho needle bounces up and down like kids on a trampette. This bike is fast.

The right-left chicane that leads onto the start/finish straight hurtles towards me. Four fingers reach out and collect the brake lever. In one squeeze pressure builds behind the 12 PFM pistons clamping the massive, specially-made EBC single disc.

The disc has to be large to soak up all the heat. You'd think thinner discs would be better because they cool down faster. This is true, but they also heat up quicker in the first place. Despite its size, the disc weighs slightly less than two normal discs

After a couple of seconds I let off, realising I'm slowing too soon. Something else occurs to me. A forked bike braking this hard would have buried its head in the ground long ago. And other bikes, like the BMW Rs, with unconventional fronts would hardly dive at all. But this bike is in-between, with enough dive to feel familiar and give feedback.

As the turn-in point arrives the Tryphonos feels still more different to conventional bikes. As there are no forks, you don't have to wait for the front to settle after braking.

The hub-steering setup also means the bike can run extreme steering geometry without the usual stability problems (from 16° to 22° – an R1 is 24°). The steering angle affects how fast/easy a bike tips-in. But on conventional bikes this figure changes as the bike accelerates and brakes. On the Tryphonos the steering angle is constant no matter what happens.

It doesn't even take a perceptible nudge of the bars and the Tryphonos tips-in with the eagerness of an Aprilia RS250 – albeit a 160kg, 900cc one. A second after tipping into the right-hander it's time to flick left onto the finish straight, but the bike's already done it – and I haven't even thought about it.

Other race bikes stop drawing away. Even 600s can't leave this bike through flicky bits, and lose out to the RF900 motor's grunt.

The other place the Tryphonos felt different/better than a conventional bike is through Schwantz curve, which has a series of bumps on the apex. Other bikes I've ridden over these have always felt nervous – like they're being bounced out of the corner on the verge of a tankslapper. The Tryphonos doesn't. You can feel what the tyres are doing through the bars but that's all, no worries.

Soon 20 minutes are up and I return to the pits. It's at this point, when I'm stood with a thousand questions in mind, that the bloke in the red overalls wanders up and asks what the bike is. I ask what he thinks of it.

The guy goes quiet for a minute, then answers: *"I'm not really sure. It's alright I suppose,"* then starts talking about the ZX-7Rs and 916s his son races.

At last. An inline four that lacks the expanse of wide boy Bob

Suddenly everything is clear. I am enlightened, and in that instant I understand why Mike Tryphonos sounds almost frustrated whenever he talks about his bike. It's because it's hard to change peoples' beliefs and challenge their prejudices.

Since the year 19-dot motorcycles have had forks or something similar, but they haven't had swingarms at the front, with the notable exceptions of Bimota's Tesi, Yamaha's GTS1000 and the Elf racer of the Eighties. So people find it extremely difficult to accept anything else, whether it's better or not.

And this design is sound. It's been raced on the IoM by Shaun Harris in '95, finishing 11th in the Senior. And every year racers who could get paid rides have offered to race it for free. But still it's looked at with scepticism.

So why build it? The project started in '90-91, when Mike came up with the idea for his engineering dissertation. Shortly afterwards he approached Performoto to build the thing and in '93 a second prototype was ready.

Mike: *"Tele forks don't function very well and I couldn't work out why manufacturers hadn't used this system. I'm trying to show the industry I'm onto something.*

"Hub-steering systems are better because the suspension works without the problems of stiction. A telescopic fork is subjected to quite a lot of force under braking, and that's what causes it. But with this system you don't get that because the shock is isolated from those forces. So it's more sensitive to irregularities under braking.

"You can also run a steep steering angle for quick steering with stability. The steering angle with forks is more or less the same whether you look at a motocrosser, sportsbike or tourer. If you set them up any steeper the forks try to bend backwards.

"Hub-centre systems can be lighter too. There's less inertia around the steering axis as there aren't two heavy forks. With a hub system the only thing steering is the wheel."

And in this case it's an ultralight carbon fibre rim jobbie. Because the shock only has to deal with suspension forces, it works better when leaning. There's very little friction at the pivot point too. Forks don't work so well leant over and rely on some flex in the frame to help feel and suspension.

Mike and Performoto are struggling to find an investor to back a road version. Everything's ready to turn this race bike into a road bike. And, having ridden this version, I'm sure they'd succeed where Bimota and Yamaha failed before.

But unless peoples' views change, the Tryphonos could slip into the wastepaper bin of great British innovations. That would be more than a shame. ■

SPECS

Engine: stock Suzuki RF900 motor with modified airbox and exhaust system.
Chassis: hub-steered design with self-designed and built front swingarm, steering hub and linkage. Under-engine aluminium cradle frame and GSX-R750 rear swingarm and shock linkages. Two Penske shocks adjustable for low and high-speed damping.
Dymag magnesium rear wheel and carbon fibre front wheel rim. Self-designed and built aluminium subframe. One-off EBC brake disc with two six-pot PFM calipers.
Other: wheelbase: 1400mm; wet weight (no fuel): 165kg; fuel capacity: 18 litres; weight dist: 51 per cent front, 49 per cent rear; steering angle: 16°-22°; front tyre: 120/70-17, rear: 190/50-17.

WANT ONE?

Unfortunately the Tryphonos isn't in production yet. It can be though. Performoto are ready to start building the road version (and have been testing one for years) but need an investor before they can start in earnest.
But if you're interested in owning one of these bikes, or want to back them, call them on 0181 880 3420. Do it.

THANKS TO: Avon Tyres for the Azaros

Rock solid Tryphonos handling meant Bob could ride it without the help of those stabilisers

PERFORMOTO