Words: Dan Williamson Photos: Adrian Brannan

THEORY OF EVOLUTION

Packing a 650bhp Evo engine, there's no doubt this Mk3 will do well in the survival of the fittest out on track.

Stop. Whatever you were thinking, think again. With its wild, wide-arch bodykit, this isn't simply the sort of boy-racer Fiesta you might've seen in *Fast Ford* five years ago. Nor is it just another track day toy, complete with regular RS Turbo power.

No, this Fiesta is much, much more sophisticated than that. And it's really rather extraordinary. Here is the world's first Mitsubishi Evo-powered, 4wd Ford Fiesta. Pumping out a colossal 650bhp, it was built with one goal: to win races.

Known as the Fievo, this monster Mk3 is the result of the engineering ingenuity of Tadstar Racing (a team formed in 2006 to compete in the Scottish MRC Saloon and Sports Car Championship) and DJM Motorsport (the company Colin McRae trusted to build his personal rally cars). So no, it's not your average Fiesta.

Tadstar Racing is run by David Taddei, backed by mechanic Stevie Pender, Alistair Brearley and Leanne Shearer. David's son Peter gets the enviable job of peddling the Fievo towards victory in the 2009 championship. Well, that's the idea.

It's the team's fourth season in tin-top racing, and its third car – all of which have been Mk3 Fiestas. The first was a turbo'd CVH, which gave way to a 2.1 Zetec turbo.

TOP CLASS

Peter says: "With 340bhp it was nippy for a fwd, and it took a few wins in Class B. But it was unreliable, so we decided to switch to Class A and try winning the overall championship".

This meant Team Tadstar would be battling head-to-head with Andrew Gallacher's awesome 650bhp Focus. A job that requires 4wd, loads more power and something pretty special in the chassis department.

"We wanted to build something different enough to create an interest – thus the Mitsubishi engine. And it's created lots of interest. The championship allows any mods and no minimum weight. There are some Cosworth-engined Focuses and Fiestas around, and loads of Evos. An Evo is 1400kg, but fully built the Fievo is just over 900kg," Peter continues.

That's enough to make a massive difference on track, worthy of all the effort it took to mate the Fiesta to Mitsubishi underpinnings.

Peter's dad David adds: "We're very familiar with Mk3 Fiestas, and they've beaten cars they shouldn't have been able to. We like to prove people wrong.

"We're most comfortable in cars of the Fiesta's size, so we considered a Mk6 shell. But the Mk3 is the strongest and lightest of all the Fiestas."

Rather than rebuilding its 2008 racer, the team opted to create a whole new machine (the only part carried across was a windscreen wiper) from an unused, unregistered shell that had been stored in wax. It was

"On race fuel we expect at least 650bhp and 500lb/ft torque."

Proflex remote reservoir dampers are pure motorsport spec

Mitsubishi Evo engine will upset the purists but it does pack a 650bhp punch

TECH SPEC

MK3 FIESTA

ENGINE

Buschur Racing Mitsubishi Lancer Evolution short motor with 2.3 stroker kit, Brian Crower con rods, custom Manley pistons, ARP head studs, ARP2000 main studs, balance shaft delete kit, Fluidampr crank pulley, CNC Heads race-spec Evo cylinder head, Inconel 90 racing exhaust valves, stainless inlet valves, copper manganese valve guides, Beehive race valve springs, Cometic 1.3mm head gasket, Evo 400 Piper cams, Hypertune inlet manifold, Hypertune 3in throttle body, Hypertune dual feed billet fuel rail, Forced Performance GT3586R HTA turbo kit, Buschur Racing tubular exhaust manifold, Tial 44mm external wastegate, Tial BOV, Accusump oil feeder, Motec engine management with Motec M800 ECU and datalogger, Perrin electronic boost controller, 5bar MAP sensor, Buschur racing coil on plug, RC engineering 1000cc fuel injectors, Pro Alloy Motorsport custom header tank, power steering reservoir and inlet carrier pipe, Mocal oil cooler and power steering cooler, Radtec custom radiator, fan and intercooler, Aeroquip connectors and pipework, C&C custom 3in stainless steel exhaust and silencer, Sard RJ fuel pressure regulator, twin in-tank Walbro fuel pump

TRANSMISSION

DJM Motorsport Mitsubishi Lancer Evolution 4wd system, Evo RS rear diff and driveshafts, Carbonetics twin plate race clutch, Ikeya gearshift sequencer, custom linkage cables

SUSPENSION

Proflex three-way adjustable coilovers , Proflex springs, DJM Motorsport custom suspension arms, Whiteline front anti-roll bar, DJM custom rear anti-roll bar

BRAKES

Front: AP Racing six-pot calipers with 330mm AP Racing discs
Rear: AP Racing four-pot rear calipers with 300mm AP Racing discs, Mintex pads Aeroquip connectors and pipes

WHEELS & TYRES

8x17in Team Dynamics lightweight motorsport rims, Dunlop SP slick and wet tyres

BODY

Seam-welded shell, Tadstar Racing custom fibreglass bodykit, custom canards and front splitter, DJM Motorsport carbon rear spoiler, lightened doors and tailgate, heated windscreen, polycarbonate 5mm side and rear windows, ATL Racing 40-litre fuel cell, DJM Motorsport carbon fuel tank housing, bodywork sprayed Ferrari Grigio Silverstone by Tadstar Racing, SJS Design graphics

INTERIOR

Stripped interior, AIM Pista dash/datalogger, Corbeau Revolution race seat with six-point harness, DJM Motorsport fully welded roll cage, DJM Motorsport triple pedal box with balance adjuster, plumbed-in fire extinguisher, twin-camera on-board video recording system, car-to-pit two-way radio communication system

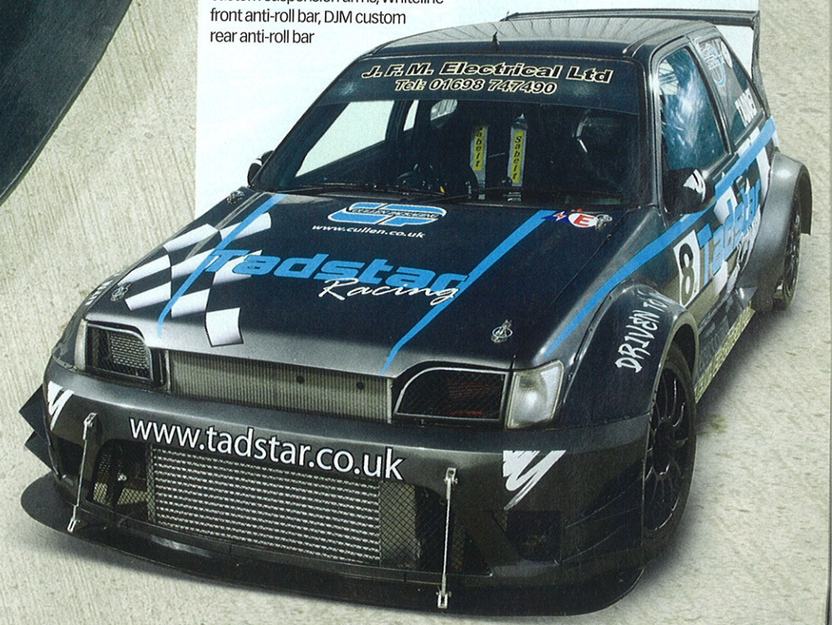
THANKS

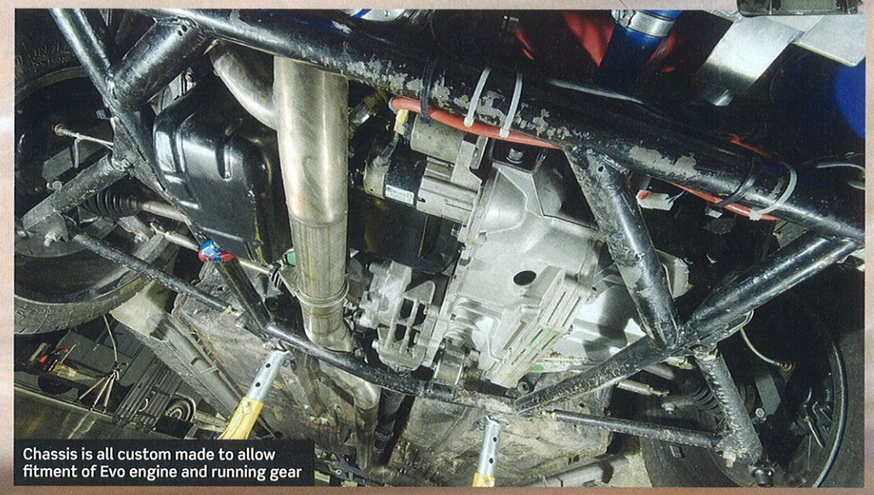
Team Tadstar Racing (www.tadstar.co.uk), JFM Electrical, Cullen Packaging, Genius Recruitment, Yaskawa Electric UK, DJM Motorsport (www.djm-motorsport.co.uk), Sam Elassar (www.dentistmapped.com), Speedflow (www.speedflow.co.uk), Hypertech rolling road (www.rollingroadscotland.co.uk)

DRIVER SPEC

PETER TADDEI

Age: 24
Job: Mechanical development engineer
Best mod: Inlet manifold
Most expensive mod: Turbo and manifold
Cheapest mod: Bodyshell
Fave Ford: Escort Cosworth



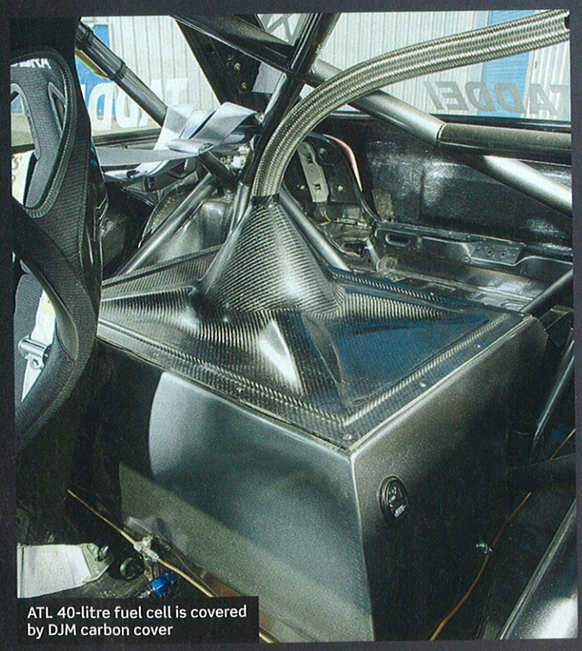

Chassis is all custom made to allow fitment of Evo engine and running gear

Full weld-in cage is needed when you're capable of going this fast

AIM dash/datalogger displays and records all the vital info

Sequential Evo 4x4 transmission is ultra-trick, and ultra cool

DJM race-spec triple pedal box and seat have been relocated for better weight distribution


ATL 40-litre fuel cell is covered by DJM carbon cover

found on eBay for £165, then taken to tuning legend Dave Plant at DJM Motorsport.

Peter says: "We do most of the work and all the maintenance on the car, but we got Dave to design the chassis and 4wd system. He worked on Colin McRae's cars, so you can safely say he knows what he's doing. He's not cheap but his reputation and experience are worth it. When we were there he was building a drag car from scratch – it was amazing to see someone who can do that kind of thing."

DJM seam-welded the bodyshell and welded in a substantial roll cage, incorporating the strut tops and subframe. The tunnel was cut out to take the propshaft and exhaust; the boot floor removed to accommodate the rear diff and fuel cell.

DJM fitted a standard Mitsubishi Evo 4wd set-up, complete with gearbox, transfer box and driveshafts and custom prop. Proflex three-way-adjustable struts were added to each corner – identical all-round, to avoid the need for carrying as many spares to each race. "The struts cost £2000 each," says Peter. "They use roller bearing technology that's been banned in rallying because it was too good. You can tell they're worth it."

ON A ROLL

After six months DJM delivered the Fiesta to Tadstar as a rolling chassis with steering wheel and pedal box. A further three months were spent stripping it, spraying the bodywork Ferrari Grey and building it into a fully-fledged track car.

The team had designed and built a wide-arch bodykit

"On race day it was pretty quick, even though it wasn't set up."

With a big tarmac area and 650bhp there's only one thing to do - Donuts!

to accommodate the Evo set-up's additional girth – factory Mitsubishi driveshafts means costs can be kept down.

Peter says: "We made it all from fibreglass, including the bonnet and tailgate. All the windows except the heated windscreen are polycarbonate. We've got spares of everything painted and ready to be fitted, just in case."

The team bought and fitted a full-race, 450bhp Evo engine, then hand-made a wiring loom. "The standard engine loom is 9kg," reckons David. "Our whole loom – including a Motec ECU loom – is 3kg. There's no point carrying all that extra weight around the track."

US IMPORTS

A new motor was needed, and the team did it properly. The guys sourced a block and internals from Buschur Racing in America, had a head built by CNC and got it put together by race engine specialist Agra Engineering in Dundee. Sam 'The Dentist' Elassar (so-called because he's a dentist, funnily enough) mapped it and can even access the car's ECU remotely via a laptop and mobile phone.

Peter says: "We had the car on the rolling road but we don't have an exact figure because it's so light and has too much torque. It was wheelspinning from 6500 to 8000rpm. On race fuel we expect at least 650bhp and 500lb/ft torque."

"It was built to fit me, so it's perfect. It's easy to drive."

The Fievo's debut finally arrived at Knockhill Racing Circuit in October 2008. But things didn't exactly go to plan… Peter groans: "The day before the race I drove it for four laps, then the carbon-fibre spoiler collapsed because of the speed on the straight – it was hitting 140mph. On the second test I was three laps in and the back window flew out. Then I changed gear too hard and the stick came off.

"On race day it was pretty quick, even though it wasn't set up. I got sixth place in the first race, and had a good battle with a Lamborghini – I got past him off the grid and kept him behind me. But all weekend the car was losing water through a pinhole in the cylinder head and was down on power. The engine was knackered, when it was stripped down, they found thrust bearings in the sump."

With that kind of grunt in such a lightweight shell you'd assume the Fievo to be a nightmare to control, but not so. That's the beauty of a bespoke race machine designed by experts. "It was built to fit me, so it's perfect. It's so easy to drive – you just point it and it goes where you want. In our first race we were three seconds off the pace of Andrew Gallacher, which was closer than I expected, considering we had less power. Apparently his car is heading over the 700bhp barrier, but we're hoping it'll be too laggy and have reliability issues," Peter states.

With 16 races to compete in 2009, Tadstar Racing still has essential setting-up, tweaks and improvements to make its Fiesta unstoppable. All that's left is to drive it, and take the championship…

Mint paintjob and custom graphics mean this Fez looks as good as it goes