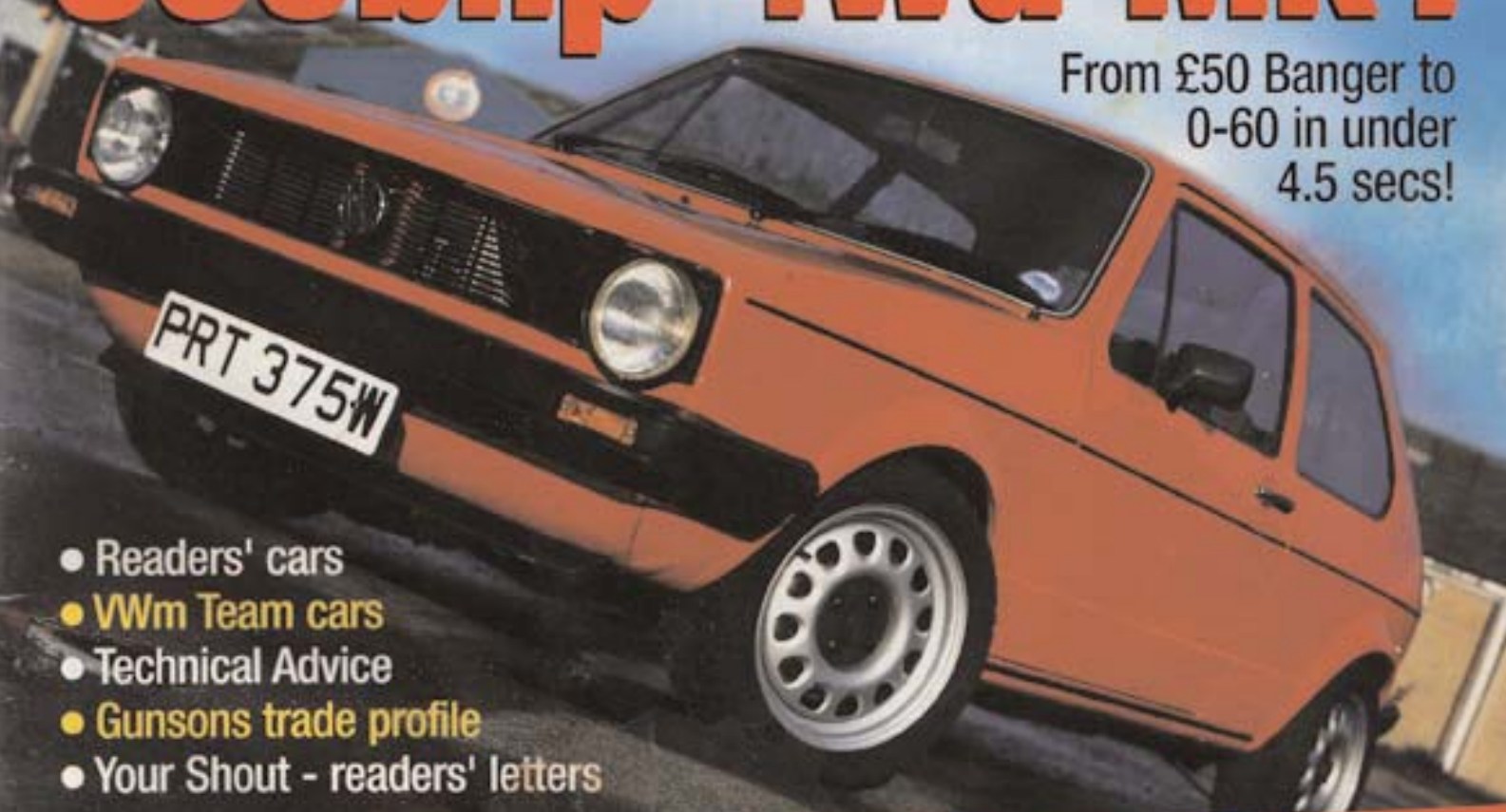


VWm MOTORING

NUMBER ONE FOR THE WHOLE BRITISH VW SCENE

300bhp 4wd Mk1

From £50 Banger to
0-60 in under
4.5 secs!



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**TYPE 4
POWERED
1303**



FEATURE CAR

Pocket **ROCKET!**



WHEN it comes to understated cars, VW are king. Take the original Golf GTI for example; only a set of alloys, a deeper front spoiler and side stripes differentiated it from the normal versions. Then there was the Mk 2 Golf G60 Limited, which boasted four-wheel drive and 200bhp from a supercharged 16V engine. Instead of kitting it out with bulbous wheelarches and a big exhaust tailpipe, VW took a different route. They painted the grille surround blue. Subtlety is the key.

Pushing this understated

The stock bodywork of this Golf N hides a 300bhp 4wd monster that can hit 60mph in under 4.5 seconds. *Peter Rosenthal* dribbles over the ultimate street sleeper...

concept to its logical extreme is Ben Leach, the owner of this stock-looking Mk 1 Golf N which can, quite literally, blow most road-going cars into the weeds. Officially-timed performance stats for the car are mind-bending: 0 to 60mph in 4.45 secs, best quarter-mile 12.1 secs, and a top speed of 140mph. These are no 'owner's estimate', but what the car has actually run. And these were recorded while the engine was being run-in!

Given the

awesome specification of this Mk 1, you could be forgiven for thinking that it's a chequobook car, built to showcase the talents of a VW tuning firm, but this isn't the case. The entire project has been carried out by Ben, with a little help from his friends. So how did this wild project start?

The answer lies back in 1993 when the then 19-year-old Ben bought his first Mk 1 GTI for the princely sum of £700. This was a really straight 1.6-litre version and Ben still has fond memories of it. Trips to GTI International and membership of Club GTI soon ignited his passion for the hot-hatch, and it wasn't long before he'd lowered the suspension and bolted on a set of 7 x 15-inch alloys.

A brief spell of



Little did this E50 Golf N know what was in store for it...



Detail of the shortened prop, custom exhaust and narrowed rear subframe



Above: Dead Rallye was the donor
Below: Narrowed rear subframe



FEATURE CAR

madness followed as he swapped the Mk 1 for a Renault 5 Turbo, but happily this passed and he was soon behind the wheel of another Golf - a Lhasa Green Mk 1 GTI 1.6. He'd actually managed to pick this car up as non-runner for just a few hundred pounds as it had a rusty fuel-filler neck and virtually the whole fuel system had to be replaced - fuel lines, metering head etc - before it would run properly. It was then sold on and replaced with an early Mk 2 Golf GTI 8V, that Ben converted to run a 16V engine.

Ben then got offered a G60 engine and he leapt at the chance, intending to shoehorn it into the Mk 2. As is often the case with these projects, by sheer fluke he was also offered a tidy red Mk 1 Golf GTI at the same time. This was in 1997.

By now Ben was thinking along the lines of building a G60-powered Mk 1, but fate intervened again, as a rare Turbo Technico-converted Mk 2 Scirocco came up for sale.

The plan was now clear - combine the best parts of all three cars to create a monster 8V turbo Mk 1. And this is precisely what he did, mating up the turbo and manifold to the G60 block. Corrado brakes were fitted up front, together with lowered suspension and BBS split-rim alloys, and Ben soon had a seriously quick little Golf.

Ironically enough, it never occurred to him to run it down the sprint at any of the GTI shows, but at one particular event he decided to try his luck out of curiosity...

A stunningly quick run of 13.6 seconds for the quarter-mile was the result and, much to his amazement, Ben found that his



Seen from this angle, the only non-standard parts are the steel wheels - so subtle it hurts!

home-brewed Mk 1 was right up there with the big boys! After continual development work, this turbo'd Golf eventually posted 220bhp on the dyno. However, while the car was frighteningly quick it did have a few drawbacks. The 8V engine wasn't ideal for the turbo and only produced the goods between 3,500rpm and 5,500rpm, struggling for grip in the lower gears.

Away from his WVs, Ben had been studying for a Mechanical Engineering degree at Brunel University (as well as doing some work for TVR) and this not only gave him access to some great tools and machinery, but also specialist help. Time to build a mad GTI, then...

In summer 2000 he decided to build the ultimate Mk 1. It had to be seriously quick, be able to get the power down and yet still be

perfectly useable. While most people would think 'fit motorsport tyres' to overcome the grip problem, Ben's engineering mind was thinking bigger - four-wheel drive.

"I bought the Golf off a neighbour and paid just £50 for it!"

The plan was to use the running gear from a Rallye and mate it up to one of the most tuneable VW engines around - the 1.8T engine.

After researching which 1.8T unit would be best to use in the Mk 1, he settled on the longitudinally-mounted engine from a Passat 1.8T, picking up a super-low mileage example - which had only covered

around 2,000 miles - from Sanburn Autos breakers in Coventry.

A suitable Rallye was sourced via a fellow GTI enthusiast, rolled on its roof, and rapidly stripped of its running gear. This took place at his parent's house and the remaining Rallye parts were sold off to enthusiasts. All Ben now had to do was find a suitable Mk 1 Golf.

This proved far more difficult than anticipated, such is the shortage of straight rust-free examples. "The problem was that I didn't want to buy a really good GTI", he explains, "as it would cost a fortune. It would also be a shame to chop up a perfectly good Mk 1 GTI. So I decided to start looking for a cheaper base-model version, either a 1.1 or a 1.3 that had decent

Although the dash is pure Golf N, the interior now benefits from GTI seats



paintwork and a solid 'shell.'

As luck would have it, the perfect Golf turned up on his doorstep - or rather his parents' doorstep - when a neighbour, who was a keen autocross competitor, unearthed a Mk 1 Golf N. "He planned to use it for autocross, but I could see that it was perfect for what I needed". Incredibly, Ben paid just £50 for the 1980 Golf N - what a bargain!

The next few months were spent carefully planning the project and offering up parts to see what could be done. After stripping the Mk 1 down, he rolled it on its side (on an old mattress!) and set to work. Two major problems were obvious - the propshaft was too long and the Rallye subframe was too wide to fit between the Mk 1 Golf sills.

The first problem could be sorted by carefully chopping and rewelding the propshaft - work that Ben did himself - while the second was much more involved. The easiest option would have been to cut out the rear section of the Mk 1's sills, but this meant the Rallye subframe would be visible - a bit ugly.

The harder route was to shorten the Rallye subframe so that it would slot in behind the sills, and this is the option Ben chose. The resulting fabrication work was a bit like constructing a complex 3D puzzle without instructions, but eventually Ben managed to get the unit to fit, even managing to use a couple of the original Mk 1 back axle mounting studs. Rather than extend the rear suspension turrets upwards to accommodate the dampers, he



Thanks to a Garret T28 turbo and Weber Alpha management, this 1.8T unit is estimated to deliver around 300bhp. Nice!

managed to find a set of Sachs competition coil-overs that were a perfect fit - this looked neater, too.

Fitting the Rallye rear diff and suspension did mean that the spare wheel well had to go and this, along with a reinforcement beam bridging the turrets, is the only thing visibly different to a stock Mk 1 boot floor.

A custom alloy tank, split in two halves provides room for the propshaft, while the original load-sensing bias valve of the Mk 1 has been moved and made adjustable.

Up front the 1.8T engine was mated up to the Rallye gearbox - with a Sachs Sporting clutch being sandwiched between - and then slotted in place using custom-made engine and gearbox mounts. The original gear

linkage was binned in favour of a cable-change set-up.

In the interests of power, Ben had already ditched the original 1.8T turbo and had decided to use a beefier Garret T28 unit that he'd liberated from a Nissan Sunny GTiR. To cope with the extra grunt, the engine compression needed to be lowered and this was achieved by machining a little out of piston crowns, dropping the CR from 9.5:1 to 9:1. Apart from balancing the conrods, the rest of the block and head have remained stock.

The next headache was to physically bolt the turbo to the head, which necessitated fabricating a custom exhaust manifold. After much research, Ben

found that many of the US motorsport enthusiasts were using 3.5mm thick Weld El tubing for this task - cast piping that is mainly used on oil rigs and is purpose-designed to withstand high temperatures and pressures. The rest of the exhaust was custom made to fit around the rear suspension, using 2.5-inch tubing throughout. A single Jetex universal back box keeps it quiet (while the turbo also helps do this).

Air is sucked into the engine via a J&R cone filter, with custom inlet tubing ducting it through the turbo and intercooler before blowing it into the cylinders. After custom making the engine mounts, Ben trial-fitted everything and spent many months getting the fit of all the parts spot on.

At this point, the bodyshell preparation took place, with Ben



welding in new rear wheelarches and fitting a pair of genuine wings. Fortunately the Golf's tailgate was in good condition (just-free Mk 1 panels are notoriously difficult to source) and he also had already bought a pair of good condition secondhand doors. With the Golf suitably patched up, the rolling 'shell' was dispatched to A&S Chandler, a bodyshop based at Nedging Tye, near Ipswich. Ben had used this firm many times in the past and was pleased with their results.

By summer 2002, Ben had got the gleaming bodyshell back and 'all' he had to do was rebuild the whole car. This took several months and included a few subtle upgrades. Externally, the only thing to distinguish the car from a regular Golf N is the GTI-spec wing mirrors and the 15-inch steel rims - these actually came from a Passat and have been tastefully painted in light grey - shod with grippy Toyo Proxes T1S tyres in 195/50-15 size. And there's a small 'Synco' badge on the tailgate...

Inside, Ben has thoughtfully installed some Mk 1 Golf GTI parts, including red-striped seats, black carpeting and a centre console housing gauges for the fuel/air mix, oil temperature and for the turbo boost. Ben has also added Mk 1 Golf GTI speaker / door pockets and a Mk 2 Golf GTI steering wheel, together with Mk 2 Golf GTI 16V instruments (the Mk 1 dials would top out, far too early...). The rest of the interior, including the white headlining and non-locking glovebox, is pure Golf N.

The Golf was finally completed on the Tuesday before GTI International 2003 and made its show debut at the



Snail's eye view of the business end of this awesome Mk 1. And the exhaust system still pokes out of the original aperture!

event. As the engine was still being fine-tuned and run in, Ben didn't run it down the strip, but even static in the club display area, the car attracted a lot of attention.

Since then the car has been

car is how usable it is - despite the Rallye running gear the car still has a proper boot and the interior is just as practical as when the car left the factory (a bit quicker, too!).

Having carried out so much hard work on this project, Ben is content to sit back and enjoy his manic Mk 1, although he's already planning some tweaks: "the springs are a little too hard for comfort and need swapping for some lower-rated versions". He also plans to do a few track days in the Golf and see how it fares.

One thing is for sure, though, Ben never rests on his laurels and you can bet that he's already planning his next VW project. The question is where do you go from here? We look forward to photographing a six-wheel-drive 800bhp Mk 2 Golf in the near future!

0-60mph in 4.45secs places it squarely in tuned quattro league

officially timed and, even at a low rev limit, still managed to launch its self from rest to 60mph in 4.45 seconds, which places it squarely in the tuned quattro league. Ben estimates that the engine is putting out around 300bhp and should now run even quicker as the rev-limit is much higher.

However, the best bit about the

TECH SPEC

MODEL: MK 1 GOLF 1.1N (1983)

Engine: 1000 Passat 1.8T engine (2PU code) piston bowls machined to reduce compression from 9.5:1 to 9:1. Balanced stock conrods, stock cylinder head and valves. JF case air filter. Two Sierra Cosworth throttle body linked to Weber Alpha engine management system. Dark Green Cosworth injectors. Gemet T28 turbo from a Nissan Sunny GT18, oversize made turbo mating flange machined from billet. Custom stainless steel inlet pipework, custom alloy air-to-air intercooler constructed by owner. Passat G60 Synco (with air-aid) radiator. Custom alloy fuel tank. Tubular exhaust manifold made from cast steel. WeldBri (as used on 01 rigs), 2.5-inch exhaust tubing throughout. Jelle universal sports tank-fix.

Drivetrain: Golf Rallye gearbox. Sachs Sporting hydraulic clutch (G60 spec), stock Rallye transfer box. Rallye driveshaft on outside. Late Mk 1 Golf Cabrio driveshaft on inside. Rallye propshaft shortened by owner - three section. Narrowed rear Rallye subframe to fit between standard Mk 1 rear axle.

Suspension: Polyurethane bushes fitted throughout. Front suspension - Race 300-adjustable inserts mounted on custom-made coil-over tubes using the original strut legs. 300lb-rated 2 1/4-inch diameter motorsport springs. Rear suspension - Sachs competition dampers, 1.9-inch diameter motorsport springs (250lb rating). Custom-made rear anti-roll bar.

Brakes: Front - Corrado 280mm discs mounted on owner-made caliper spacers, stock Mk 1 Golf front callipers. Ferodo fast road pads. Rear - Rallye cross-drilled discs with stock pads. Sirocco 16V handbrake cables. Goodridge stainless braided hoses front and rear, all-new piping throughout. Standard Mk 2 Golf master cylinder. Mk 1 load-sensing valve moved and altered to be fully adjustable.

Wheels / Tyres: Passat steel wheel 6 x 15-inch ET35 / Toyo Proxes T1S tyres in 195/50-15 size.

Interior: Mk 1 Golf GTI red-striped seats front and rear. GTI centre-console with extra gauges for air / fuel meter, oil temperature and turbo boost. Mk 2 16V 16V speedo and rev-counter. Mk 2 Golf GTI steering wheel, black Mk 1 GTI carpets.

Exterior: As Wolfsburg intended.

Thanks to: Ben's parents Martin and Trevor for the use of the garage; plus his girlfriend Carol. Also John Saunders, who helped calibrate the engine management system.

