

Steve Bennett

Home town Hoxne, Suffolk

Occupation

Editor, 911 & Porsche World magazine

Cars

1985 911 Carrera 3.2; 1986 944 Lux

Last report

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ell, there I was, perfectly happy with the performance and day-to-day reliability of my 20-year-old 944, when I suddenly and inexplicably get the urge to start messing around with it. I blame my formative years as a motoring journo, when I spent far too much time on the now defunct Cars and Car Conversions (beware of imitations, by the way), messing around with engines and things. Be warned: modifying is an addiction - and one that I thought I'd kicked, but seemingly not.

So what have I done? Well, the short version is that I've fitted a MAF kit from ProMax Motorsport. For a fuller account read on.

So, what is an MAF kit? MAF stands for Mass Air Flow, and the kit uses a Bosch HFM5 Air Mass Meter to replace the standard air flow meter. The MAF is sometimes referred to as a 'hot

wire' or 'film' system. It is quite simple, in that it measures air flow passing over a strand of heated wire. This causes a voltage variance that is way beyond what can be measured by the standard air flow meter. That information is then relayed to the ECU, which makes fuelling adjustments accordingly. It is a lot more accurate than the standard air flow meter, which works via a flap, and again relays information on air flow, depending on its position. The MAF isn't up there with current engine management technology but, short of going to a fully-mapped ECU with crank sensor and throttle pot, it's close.

The full kit consists of the Bosch HFM5 plus a processing computer, which feeds the ECU with corrected information. As far as the ECU is concerned, it is still receiving its signal from the standard air flow meter. Promax also throws in a chip to fully optimise things and, for good measure, I decided to fit a K&N panel filter. They're good for 150,000 miles before they need cleaning, so it's a lazy option.

So, what exactly is the kit supposed to achieve? Well, with more accurate information going to the ECU via a potentially infinite range of commands, there should be gains in torque, top-end power and drivability.

The Promax kit is made in Germany, by a company called SciVision, and has proved very popular. ProMax, meanwhile, is better known for its turbo conversions, but also produces chips for an assortment of Porsches. The 944 is a bit of a speciality with them – and main man, Andrew Sweetenham, is currently building a 924/944 Turbo hybrid with a 3.2-litre eight-valve engine for racing and track days, which we're looking forward to trying out. But, meanwhile, back to the plot.

The bits arrived in the post, and I manfully resisted fitting them immediately in favour of getting the car on a rolling road in standard 'before' trim.

I whizzed over to Dave Walker's Emerald rollers in Watton, Norfolk. Dave is an old buddy from my CCC days, and what he doesn't know about this sort of thing isn't worth knowing. His rolling road is also known to be pretty accurate, which is



Top: Bennett's 944 entertains a colourful visitor. Above ProMax MAF kit. Benefits will be more power and driveability

Our cars

something of a double-edged sword. Why? If the figures are not quite what you were hoping for, then disappointment ensues.

So what was the baseline?
According to Porsche, a standard
944 should be knocking out
163bhp. Strapped down and with
a probe up its exhaust pipe, Dave
ran through the gears and we
arrived at 151bhp and, on the
second run, 149bhp. Hmm, that's
not brilliant, but there are plenty
who would say that, for a
20-year-old car with 161,000 miles
on the clock, then it's not bad,
either. There are also plenty who
would say that 944s never made
that figure in the first place!

So, down to the fitting. Andrew at ProMax said it would be simple – and I assured him that it would have to be! Sticking the air filter in was easy enough, and next I went in search of the ECU. On my '86 model, it resides under the carpet in the passenger footwell. Removal is pretty simple and soon it was on the kitchen table. The ProMax instructions are easy to follow and, once inside, and with the two circuit boards split, the standard chip was eased out and the new one installed.

Next it was time to fit the MAF kit itself. The standard air flow meter came off easily enough and the new Bosch unit slid into place with the help of a couple of Jubilee clips, a new section of Samco hose and a smartly-milled aluminium adaptor to connect it to the air box. The new wiring harness hooks up the MAF meter and then, via its own processing computer, connects to the standard ECU. It really is that easy and took less than 30 minutes.

So, job nearly done. At this point, it must be said that the kit is well thought out and supremely easy to fit. Now back to the rolling road. Two runs later and we had the results. Ooh, the anticipation!

I'd love to say that it was the business, but the reality was not quite what were expecting. Peak power remained exactly the same, albeit slightly higher in the rev range, while peak torque was slightly up at 147lb/ft @ 4727rpm against 145lb/ft @ 4760rpm. That extra couple of bhp started at around 3000rpm, and stayed until peak, but below that there was a bit of a drop.

Power, while maybe the same at peak, gained slightly from just under 4000rpm through to 5500rpm. Fuelling, meanwhile,

was puzzlingly erratic, running significantly richer at low rpm before leaning off and then settling down from 4000rpm.

So, in the aftermath, we stood around and scratched our heads a little. Based on these results, it's hard to recommend, particularly at £599, although we still had to drive it. Out on the road, it has to be said that that it does pick up well – and a lot of the jerky, transitional power delivery is gone. Torque is improved and there is a bit more urgency although, as yet, I can't make any comment about fuel consumption.

Right now, I'm going to live with the kit and do a bit more digging as to why the results are not quite as expected. Certainly, Andrew at ProMax is slightly puzzled. My car is the first to have a kit fitted here in the UK, but there are plenty of happy punters in Germany running it. Andrew reckons that the power output is about right – and that ProMax has seen worse from what are perfectly healthy engines.

An electronically-controlled engine with healthy internals doesn't really lose power unless the compression is down, and there is nothing – oil consumption, blue smoke etc – to suggest that. However, I will get it checked out just in case. In the meantime, Andrew is going to canvass the opinions of SciVision.

After studying the power plot, Andrew has also mapped up another chip, and we suspect that the fuelling issues could be down to a hose leak. At the moment, though, I just haven't got time to fit the chip and check the hoses. By next issue we'll have it sorted.

It's a case of work in progress as we go in search of our missing horsepower. Although, first up, I appear to now have an oil leak from somewhere at the back of the engine – I suspect a popped seal, possibly as a result of its exertions on the rollers. Worst case scenario is a crank seal. That'll teach me to start mucking around, eh?

Contacts book

ProMax Motorsport 01908 524468, www.promax.uku.co.uk

Emerald 01953 889110, www.emeraldm3d.com



The heart of every modern car – and the 944 is no exception. The new ProMax chip can clearly be seen to the left



If you're going to improve the breathing of the engine, then it makes sense to fit a decent K&N panel filter



Removing the standard air flow meter. Note Bennett's optional wooden bonnet stay. One day, he'll change the struts!



ProMax MAF kit in place. Note how it's a straight replacement for the standard air flow meter. Below: on the rollers

