

Killer Sharks

Missed out on a GT3 RS 4.0, or can't wait for the next GT3? We try out three worthy 3.8-litre alternatives from US-based SharkWerks

Written and Photographed by **Ian Kuah**

The Diablo Mountains, east of San Jose, offer some of the best and most spectacular driving roads in Northern California. Bordering the local state park, Route 130 starts in the foothills by Highway 680, and winds its way up Mt Hamilton towards Observatory Peak at 1,284m (4,213ft) above sea level, and down the other side.

Running across Mt Hamilton for 22.5 miles, Route 130 has much more gradient than flat, a few short straights, many open but even more numerous tight bends, and the occasional hairpin thrown in for good measure.

In all, there are 365 curves here, one for each day of the year, and all the tighter corners are cambered the right way. The backdrop to this sinuous piece of Tarmac is rock face on one side and a sheer drop on the other. This is a serious drivers' road par excellence! ➔



On the downside, the road was better maintained before the financial crisis, and the subsequent lack of funding and a couple of hard winters have begun to degrade the surface.

Thus, you have to be careful of small rocks that have been washed off the cliff face by the occasional rain. And just like at the Nürburgring, in spring, autumn and winter, the damp patches shaded by the trees do not dry out.

Today, we are enjoying the breathtaking views from the University of California's Lick Observatory, on Observatory Peak. It has taken us just over half an hour of spirited driving from the highway, covering barely half of Route 130, to get here.

It was no surprise that we only saw one other car on the way up as the locals say the population of Mt Hamilton is around 40 people. However, unlike the odd tourist who comes up here for the observatory tour or just to get some clean air, the five of us, and our three GT3s were on a mission.

GT3s are not town or highway animals; they are lean and lithe predators born to go quickly on a racetrack or on roads like these, and the jockeys who ride them want to be able to enjoy every single minute of the experience.

Enjoying it is precisely what I was doing in this back-to-back drive of two tuned 997 GT3s and one tuned GT3 RS 3.8, all three fettled by California-based Porsche tuner, SharkWerks.

It is one thing for SharkWerks to hand over its own brand-new GT3 RS 3.8 to a total stranger, quite another for two of its best customers to do the same, especially on a road as demanding as this. I take it as a mark of the confidence they have in their cars, and the respect they have for SharkWerks' co-founder Alex Ross and his team.

I decided to start the day by driving the lightly tuned blue and orange SharkWerks RS 3.8, using it as the benchmark for the two modified 997 GT3s.

The car, one of the four Gulf blue and orange-themed RS 3.8s to come to the United States, was famous even before it reached SharkWerks' headquarters. Alex and Dan collected it in person from supplying dealer Isringhausen Porsche in Springfield, Illinois, in early November and drove it all the way back to California.

Their 2,229-mile journey across five states on the legendary US Route 66 was the subject of a daily blog on the SharkWerks

website in early November. I followed his journey in the days leading up to my visit to SharkWerks. The timing was perfect as I was due to drive the new 991 Carrera in Santa Barbara just a few days after my visit to SharkWerks.

Apart from being the most lurid GT3 RS 3.8 I have ever seen in the metal, the setting was familiar, and the figure-hugging race seats felt like a favourite pair of gloves.

When I twisted the ignition key, the engine fired up with a deeper, more visceral bark than standard thanks to the SharkWerks GT3 exhaust. I knew from Alex's blog that scant seconds after taking delivery of his brand-new car, he had Isringhausen whip it into their workshop to install the exhaust, which is one of SharkWerks' bestselling lines.

On day four, and 1,500 miles into the journey home, the intrepid duo stopped off at Evolution Motorsport (EVOMS) in Tempe, Arizona for the ECU remapping work that would optimise the fuel, ignition and camshaft timing for both 91 and 93 Octane fuel.

On the EVOMS dyno, the factory base line of 424bhp at the wheels. This was boosted to 442bhp, or 470bhp at the flywheel by the ECU and exhaust mods, and the RS continued its journey west with smiling faces all round.

"When we got the car back to our workshop, we then did all our usual suspension and wheel upgrades as well," said Alex. "Having a car that a customer can drive is a basic principle we uphold here, and we have proven over and over with various demo cars that there is no better way to sell parts or even complete cars."

Feeling 20bhp on top of 450bhp is a tough call, especially on a road like this where you seldom get up enough speed to see the redline in third. But from the more incisive way the throttle responds, and the more eagerly the rev-counter chases the red paint, the seat of my pants tells me that the freer-breathing exhaust and remapped software have done the trick.

On top of that, the SharkWerks exhaust shaves about 8.0kg off a 997 GT3, but as the factory RS 3.8 uses a titanium exhaust, the saving drops to around 3.5kg. That said, the factory RS exhaust only uses titanium in its centre silencer and tips, and the pipes are still stainless steel. SharkWerks uses titanium tips that are larger in diameter but lighter.

Octane Numbers

There's a lot of confusion about US and European fuel Octane numbers, which makes the US grades appear much worse. But the fact is we're not comparing apples with apples as US fuel stations use the PON system rather than the European RON system.

PON (Pump Octane Number) is the average of the RON (Research Octane Number) and MON (Motor Octane Test) systems, and 91 (PON) Octane is equivalent to 95 (RON) Octane Unleaded, while 93 (PON) Octane equates to 98 (RON) Octane.

In the USA, California and Arizona have the worst fuel at 91 Octane and higher ethanol content. The East Coast, though, has the better 93 Octane fuel, which is closer in quality to the European 98 Octane.

Gulf blue and orange – what better colour scheme for a 997 GT3 RS?



“GT3s are lean and lithe predators born to go quickly”



A road like Route 130 requires a driver to get into a rhythm. I always take it easy until I feel comfortable, stepping up the pace gradually until car, driver and road come together. It takes three or four miles till everything snaps into place, but then we are off with the two GT3s behind.

The RS 3.8 takes the occasional rough surface and change of road camber in its stride. This car has fantastic poise and stability under trail braking into bends, and superb traction on the way out.

I know how good the stock RS 3.8 is, but with SharkWerks' bump-steer correction kit, control arms and rear adjustable link kit, the handling has even more finesse.

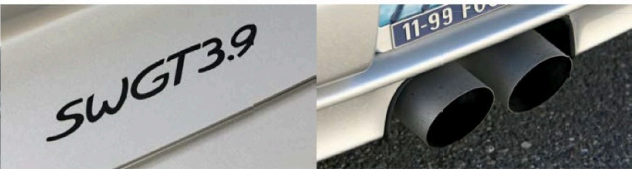
I know from experience that on a racetrack I would be confident to push the RS all the way and beyond. But here, with the rock face always just a couple of feet away, there is no margin for error.

Even pushing hard on this road, there is no sign of the suspension running out of travel, tram lining or the ABS even hinting of kicking in, and only once or twice does the deep front spoiler lip come into contact with the Tarmac.

Lower unsprung weight always helps ride, traction, braking and even acceleration, so the HRE Monoblok P43S centre-lock wheels in factory sizes that shave a total of 5.5kg from the unsprung weight play their own part here.

With a shade more grunt, soundtrack and handling than it came with out of the box, the modest SharkWerks alterations to the RS 3.8 score a bull's eye. They leave the RS 3.8 slightly more focused as a keen drivers' car, without upsetting its fine balance or eating into its ability to be used as a daily driver. 🏁

“From the first
gearshift
I know that
I am sitting on a
flat six”



When Alex told me that local property developer Ralph Jackson, whose 2007 GT3 was the first recipient of the SharkWerks 3.9-litre engine, was keen to join our little soirée, I was elated. I have heard so much about Ralph, his car and the SharkWerks 3.9-litre engine that my expectations are running close to escape velocity.

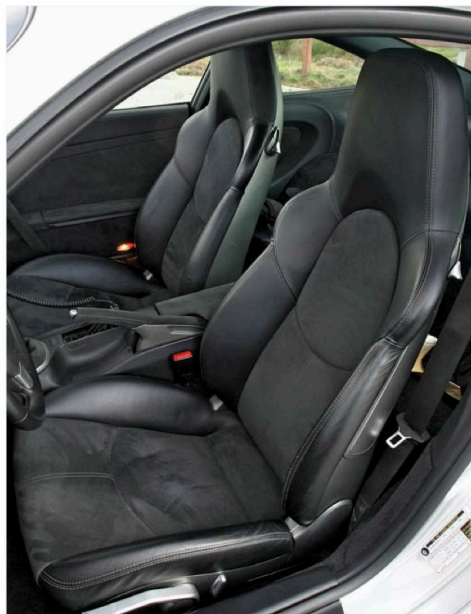
Ralph's 2007 GT3 is no garage queen. It was the very first 009 GT3 delivered in Northern California and is used as a daily driver. It is also probably one of the highest mileage GT3s in the world, with over 58,000 miles under its belt, 23,000 of those covered with the 3.9-litre engine.

"I live on the northern part of the loop that we are driving today, where the roads are similar but smoother, so the steering, suspension, tyres and engine get a good daily workout," explained Ralph. "It is a testament to the basic toughness of the GT3 and SharkWerks' engine-building skills that the car has never missed a beat.

"The only thing that has ever gone wrong was the shafts of the stock front dampers bending at 50,000 miles with the torture this infamous road gave them," he continued. "But since I replaced them with aftermarket Bilsteins, everything has been fine."

Ralph is no ordinary GT3 owner. 65 years of age this year, he is a GT3 Rennlist member who has been associated with Porsche since his teens when he worked for the legendary Vasek Polak, and drove Abarth Carreras and RSK around the Riverside Raceway.

"Ralph has had many modified Porsches over the years, and says that this is his favourite and last," said Alex. "He is a big capacity, naturally aspirated motor junkie, and when he met us in



late 2006, he made it his mission to wean us off the crazy Turbo scene. No question that he has succeeded there.

"He was one of our first customers for the GT3 street exhaust system and has number four of the 467 sold so far. His car has been a testbed for many of our new parts, and the good news is that five years down the line, his faith in our work is undiminished."

Halfway to the observatory, we spot a pullover and I switch to Ralph's silver 3.9-litre bullet. As expected of a US-spec GT3, this car has the conventional sports seats rather than the lightweight race seats fitted to the RoW version. No matter, Ralph decided not to change them for practical reasons.

One thing I am less happy with is the steering wheel, whose leather rim has become shiny and slippery after four years of hard use. After the grippy Alcantara-covered wheel in the RS 3.8, I initially feel less in control. Ralph, however, grew up on a diet of Porsches with thin, shiny plastic steering wheels and it does not bother him.

Compared to the 415bhp and 403.7Nm of torque from the first generation 997 GT3 3.6-litre motor on which it is based, the 3.9-litre conversion is a sensational improvement that actually jumps over both the second-generation 3.8 and the RS 3.8 to make 502bhp at 7,700rpm and 481Nm of torque at 5,250rpm.

With forged lightweight pistons weighing just 496g each including the wrist pin (stock 3.6 pistons 519g, stock 3.8 pistons 539g), running in steel liners, and a single-mass flywheel, it also revs like a race engine with a screaming 8,800rpm rev limit. Peak power arrives just under 8,000rpm, and amazingly only drops 5bhp from that point to the limiter.

Thanks to the other mods like the EVOMS intake and exhaust camshafts and their bespoke ECU mapping, there are also gobs of torque along the way. In fact, the big numbers made by the SharkWerks 3.9 compare very favourably to the 450bhp and 430Nm of torque generated by the factory RS 3.8, and even the 500bhp and 460Nm of the RS 4.0.

All this extra power and torque is fed through an uprated clutch and pressure plate from the Carrera Cup car, and you can feel the resistance of their stronger springs when you depress the left pedal.

From the very first gearshift, I just know that I am sitting on a flat-six bombshell. The 3.9-litre engine has power and torque coming out of its ears, and whether I am driving conservatively as I get to know the car, or hanging it out later on, I realise that

I am instinctively using one gear higher in most places than I would be even in the RS 3.8.

It is the same kind of feeling I had with the RS 4.0, and tells me that not only can you go faster when you are pushing on, you can also almost treat the big engine like it has an automatic transmission when you are not in a hurry.

I dropped down to just over 1,000rpm in third for my tractability test, and when I began to feed in throttle, the car simply pulled away smoothly from there, enthusiastically from 1,500rpm, and then took off like a dingbat after that.

When the original dampers in Ralph's car gave up the ghost, he fitted a set of fully adjustable Bilstein B16 Damptronic coilovers. They were set up to drop the ride height another 15mm over stock, are compatible with PASM, but reduce the ten selectable settings to two in that configuration. The springs are also firmer than factory issue.

When I later read off the long list of suspension modifications around the Bilsteins, I was not surprised one bit. RSS/SharkWerks bump-steer correction and toe-steer kits, RSS inner rose joints and adjustable thrust arm bushings all round, rear adjustable links.

This car came with steel brakes, and Ralph replaced these with the Brembo GT upgrade, which uses 380mm vented, cross-drilled discs all round, and six and four-piston calipers front and rear.

This updated brake system takes 7.8kg off the car's unsprung weight, while the HRE Competition C93 three-piece wheels, shod with 225/35R19 and 305/30R19 Michelin Super Sport System tyres, remove a further 11.4kg.

On this undulating road with its broken surface, the ride was borderline uncomfortable. It felt like the suspension was wound up tight and did not 'breathe' like the PASM system in the RS 3.8. If anything, the ride reminded me of a 996 GT3, which illustrates how far the suspension technology in the current generation car has advanced.

However, for all that firmness the car also felt very well planted on the hard deck. So although my spine was taking a good pounding over some of the more uncompromising bumps, there was no loss of traction front or rear, and the car's nose dived for apex like it was an Olympic event, the back end following through without hesitation. It may not exactly glide over the broken surfaces of this mountain road, but this is one car I would love to try on a smooth racetrack. 🏁

With 55,000 miles on the clock, this is one of the highest mileage GT3 RSs we've driven, but it's proved super-reliable



It is time to get into a blue car again, but one without a lick of orange paint in sight. The 2010 997 GT3 3.8's owner, Larry Cable, is a fellow Scot, so we were off to a good start.

This Mexico Blue car is Larry's third GT3, and you will get an idea of his commitment by his reputation on Rennlist, and the fact that he was chosen for the Michelin Pilot Super Sport R&D programme, going to Dubai and other places for testing.

Larry's GT3 is a work in progress, and when I drove it on the day it had the SharkWerks Stage One engine and suspension conversion. Thus, it is close to being the GT3 3.8 version of SharkWerks' GT3 RS 3.8 demo car.

The motor benefits from an EVOMS remap for an extra 12 horses and 13.5Nm of torque on 91 Octane pump fuel. The e-gas throttle has also been dialled right up and left-foot braking enabled. A small handful of those extra horses come from the SharkWerks exhaust, whose main mission in life is to carve 7.2kg from the extreme end of the car and also give it a more enticing soundtrack.

As a keen track junkie, Larry knows the difference between a road and a race car, aiming to keep his ride civilised on the street while taking out most of the slack in the rear suspension for greater precision on track.

That happy medium was achieved using the RSS/SharkWerks rear adjustable link kit, bump-steer correction kit and 997 GT2 antiroll bars. The wheels are one of the first sets of HRE's 19-inch centre-lock wheels for the GT3 MkII. Larry chose the satin black finish on the P40 wheel design that saves 9.5kg a set over the standard wheels. When I drove the car, it was wearing stock-sized Pirelli Corsa tyres.

Despite its power and torque deficit compared to the other two, this GT3 car felt very together and balanced. If longer

straights had been involved, the other two might have pulled out some distance, but on this twisty road, the blue GT3 had no trouble keeping up.

I was not surprised at all to see that the one area where the GT3 was lacking was its ability to rev as hard and high as its running mates.

Naturally, the dual-mass flywheel is the culprit here, and Larry plans to fit a single-mass flywheel and a Guard limited-slip differential as part of his Stage 2 upgrade. As with the factory RS, the single-mass flywheel will also allow the ignition timing to be made more aggressive at lower revs, further enhancing the car's pickup.

Driving these modified GT3s and GT3 RS 3.8 all in one day was quite an adventure. Weeks later, my fun-meter is still tingling from that awesome drive over Mt Hamilton, and I would do it again in a heartbeat.

While there is no doubt that the wider front track of the GT3 RS 3.8 and its more advanced suspension gave it the ultimate edge in the ride and handling stakes, on a public road where you cannot go all out, there was simply not much in it.

Ralph's car in particular, with its well-run-in 3.9-litre engine, is breathtakingly fast, with torque and high-revving ability that push the similarly powerful factory RS 4.0 very hard indeed.

Given that all of the 4.0 litres are sold, and that they were a lot more money even if you were lucky enough to get your name down in time, GT3 and RS 3.8 owners now have an alternative.

In fact, they will soon have two alternatives as Alex is talking about a SharkWerks 4.0-litre GT3 conversion. With the new 991 GT3 two years away and plenty of good used 997 GT3s on the market, it looks like this is a story that could run for quite a while. **911**

This 2010 GT3 RS is a work in progress, with a remapped ECU, sports exhaust and uprated suspension

