TechArt GTstreet
Brute Bling

TPC 993 GT2 Evo
Orange Crush

Ruf RK Coupe
The Italian German

Autobahn Ambition

The PORSCHE Tuner Magazine

Summer Issue

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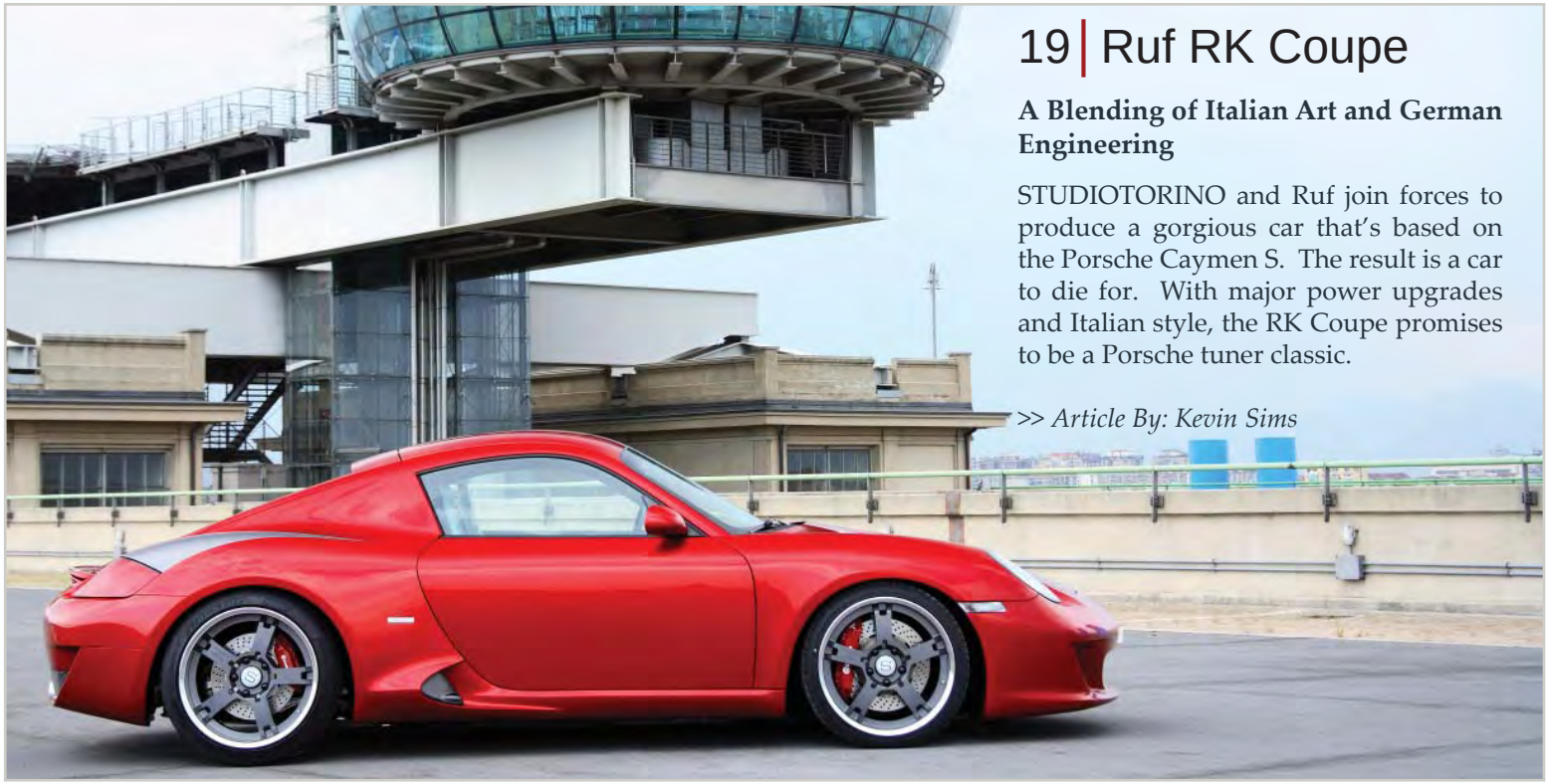

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Current Trends

Porsche AG & the Future of Tuners

By: Robert Besl and Kevin Sims

Porsche AG has come a long way from turnaround case in the early 90s to a highly profitable car manufacturer. The company harnessed brand desirability to spread out its product range, thus introducing Boxster and Cayman as entry models and expanding into the increasingly controversial, albeit lucrative SUV segment with the Cayenne. With the Panamera looming on the horizon, car sales are expected to soon exceed 100,000 units. The AG's recent acquisition of a considerable share of Volkswagen stocks indicates that Zuffenhausen is on its way to becoming a major player in the industry.

The steps that were taken to elevate Porsche to where it is today are well known and have filled the pages of many a textbook. Suffice it to say that utilizing advanced Japanese production methods as well as sharing numerous parts for the 911, Boxster and, recently, the Cayman helped reduce both time and cost of development and production. Two key product strategies contributed to the AG's success:

Above: The TechArt 997 Carrera 4S Cabriolet includes a performance package with a sport air filter and a reprogrammed engine electronics producing 15 more horsepower.

- Diversifying the 911 as Porsche's core model has attracted a broader customer base. At present, 11 (!) variants of the 997 ensure that everybody can pick and choose something they like. Even atrocious combinations like a full-spec C4 Tiptronic convertible are available through your trustworthy Porsche dealership. Let us not conceal by prevailing opinion that today only the GT3 conveys the driving pleasure and challenge so loved by the purist and shunned by the more "normal" sports car consumer. Kudos to Porsche for successfully getting away with charging a hefty $34,000 premium over the base Carrera for the only vehicle in the line-up that still caters to its original clientele.

- Thanks to one of the smartest joint-ventures in the industry's history, Porsche contributed to only a fraction of the Cayenne's development cost, leaving the lion's share, including production, to VW. A similar agreement is apparently in the works for the Panamera.

Above: The Gemballa GTR 650 EVO sports a new GT2 frontskirt, Front/Rear GTR fender extensions, GT sideskirts, and a GTR EVO rear spoiler.

All this alone will not necessarily pose a major challenge to the tuning community. In fact, the ever increasing demand for customization and individualization has helped transform a fringe group of garage tweekers into a billion dollar industry. However, tuners today have to face challenges caused by a variety of factors.

The early days of tuning were characterized by a small number of tuners

"While Porsches are easier to assemble, their level of complexity has multiplied in a short time span. Tuners have had to rapidly update their know-how base, particularly with electronics, to stay in business."

Top: Ruf's Rt12 with its 650 hp 3.8 liter, Flat-6 engine and twin turbos. Middle: The beautiful Ruf RK Spyder inspired by Porsche's classic 550 Spyder. Bottom: TechArt's Cayman S Widebody sporting a 3.8 liter, Flat-6 engine with 385 hp.

that focused either on technological improvement over the base product or on individualization through major design modifications. With the first group, visual features such as wheels or spoilers were only added if they would serve specific functions; custom-made interior packages were rare and only available upon request. The second group relied on heavy modifications to both the exterior and interior to distinguish their product. Technology was usually purchased from specialists of the first group and vice versa. Iconic examples are Gemballa´s notorious Avalanche, a child of the 80s to the core, and the RUF CTR from the same era. The first Gemballa was a super-wide 930 Slantnose with tons of plush inside, relying on the RUF BTR 3.4 turbo engine for power. The RUF CTR had inside what the factory had to offer back in the day and less, development focus was clearly on making a lightweight, aerodynamic coupé with a powerful twin-turbo.

Not too long after that, the lines started to blur when Porsche introduced the 993. Ever eager to cash in on lucrative opportunities, Porsche AG deployed its own customization programs, occupying a field formerly exclusive to tuners. Increased demand for the first 911 that appealed to a broader customer base triggered new companies to join the tuning fray. Hence, it didn´t take a lot of time until every established tuner started offering technology and styling upgrades today. Former key points of differentiation thus became a standard base range of products and services for any industry participant. Cooperation thus turned into competition for customers.

While Porsche cars are easier to assemble than before, the level of technological complexity has multiplied in a short time span. Tuners have had to rapidly update their know-how base, particularly in all things involving electronics. In addition the not so distant future holds changes in fuels. Alcohol fuel in America and new diesel fuels in Europe will require much rethinking on behave of the tuner. In all actuality the new emerging "green" fuels present an opportunity for tuners. Production manufacturers will need to program fuel/ignition tuning and compression ratios to consider the slow

receding of the old fuel's availability, thus not being able to optimize the new fuel's octane benefits. Many tuners have already begun testing with the new fuels and found great performance advantages by pushing up compression. The result of these new technological considerations will always require adding staff and acquiring equipment which will continue to increase their costs. Since the majority of tuners are small businesses, resources are often stretched thin. Consistently shortening product life cycles only exacerbate the issue.

Now what are the implications of these developments? Incumbents are put on the spot to up their game. Quantum leaps in technology, particularly the rapid advances in the electronics department, force tuners to either hire experts in these areas or foster them in-house. While advantageous in the long run, growing talent requires time and resources and yields little short-term benefits. Outsourcing technical development is a possible alternative, but still requires investment. Customers know competition is good because it offers them more variety and better products at lower costs. For suppliers, this means reduced margins if everything remains as is on their part. However, the supplier who can innovate product development to make it more cost effective could have a real advantage competitively.

A return to the good old days is highly unlikely so re-thinking the basic elements of their business would be a good start. Let us put ourselves in the position of an established tuner who is faced with the reality of newbies trampling on their turf. Let us further assume he is already past the stage of moaning, complaining, disbelief and self-pity. Then they should take a step back and ask themselves some questions before taking action:

- What parts of the business does our revenue come from? Which parts of it are profitable?

- Where have we developed specific skills that offer value to the customer and differentiate ourselves from the competition? Which of our resources are scarce, valuable, hard to imitate and hard to substitute?

- Do customers expect our brand to offer everything for their car? Do the products generated from these core competences make up an essential part of our revenue or do we just drag them along because we have grown accustomed to having them?

- What is the focus of our business? Should we target every model built by Porsche or can we afford to focus on select types and vehicles? What are the implications of that decision?

Thinking about these questions will most likely reveal some more or less pleasant truths. Ideally, it will confirm the tuner company´s current path to be viable. If that's not the case, some strategy options should be discussed:

Above: The Sportec tuned Carrara GT.

Below: Marc Basseng drove a Cargraphic 997 GT3 RSC 4.0, like the car below, to an outright victory in the 2007 Tuner Grand Prix.

- Assuming customer demand for those goods and service identified as core competences is strong and the rest of the range is doing alright, dropping everything that is not "core" would be premature. Customers might expect a brand to offer everything for their car. Finding that out will require research.

- If competitors are faced with a similar situation, it might be wise to join forces and develop a base mold for front and spoilers, side skirts or even wheels. This process could be applied to engine and turbo components as well. This strategy of tuners working together would help significantly reduce ramp-up cost and time. They could furthermore team up for buying interior parts such as steering wheels or pedals, lowering prices by increasing purchasing power.

These options should be pursued carefully, though. A line needs to be drawn when it comes to a competence the customer considers unique. Coachwork or interior leather trim can be viewed as such.

Summing up, life hasn't been made easier for the tuning community, neither by Porsche AG nor by the developments in the industry itself. If incumbents take some time and pause to consider what served them well in the past, don't lose their grip on gauging changing customer demands and aren't shy to at least think of new options as outlined above, the future will look bright for them. We are definitively looking forward to seeing exciting new cars in the years to come! ***AA***

Above: The Gemballa Roadster GTR based on the 986 Boxster.

Porsche Factory Releases

Porsche Release >> 2008 911 Turbo Cabriolet

By: Kevin Sims
Photos By: Porsche Press

Calling all lovers of open air driving. Porsche is set to release their new 911 Turbo Cabriolet in the US on September 8th. For the first time since the release of the 997 series, customers will be able to select a turbocharged Porsche that combines racecar-like high performance with the 'wind through your hair' thrill that only a convertible can provide.

Continuing the company's esteemed 20-year tradition of offering a convertible version of their turbo 911 model; this 2+2 seater can reach speeds of nearly 200 mph and accelerate from a stop to 60 mph in just 3.5 seconds. Starting at $136,500, the all-wheel-drive 911 Turbo Cabriolet is available with the same 3.6-liter, six-cylinder, twin-turbocharged boxer engine that delivers 480 horsepower in the 911 Turbo Coupe.

The 911 Turbo Cabriolet uses a light, three-layer soft top that can be opened and closed at speeds of up to about 30 mph in just 20 seconds. Once open, the car boasts top-down beauty and sophistication in its extensive details: including hand-stitched leather, a high-performance Bose Surround Sound System stereo with settings ideal for top down driving, a wind buffeting system, Bi-Xenon headlights, 19-inch forged wheels with two-tone appearance and Porsche Communication Management (PCM) – a sophisticated entertainment and navigation system that seamlessly combines audio, navigation and timing features.

The 911 Turbo Cabriolet promises to be the ultimate Porsche for those who want to get away from it all by enjoying a lively yet refined drop-top driving experience. ***AA***

Porsche Release >> 2008 Porsche 911 GT2

By: Kevin Sims
Photos By: Porsche Press

Porsche will unveil their most powerful 911 ever built at the 2007 Frankfurt Motor Show. The 2008 911 GT2 improves upon the 911 Turbo by delivering a stronger 530 hp engine with rear wheel drive making it more racing oriented.

Engine power is increased by each of the GT2's twin-turbos receiving a larger compressor wheel and a flow-optimized turbine housing to raise induction pressure. To further the car's racing attitude, wider wheels with 235/35 ZR 19 tires up front and 325/30 ZR 19 tires out back are supplied. Porsche endows the GT2 with brakes featuring discs made of a composite carbon fiber/ceramic compound to ensure the utmost braking power.

The GT2 trims weight off its tail by utilizing a muffler and tailpipes made of titanium. The innovative design reduces weight by 50% as compared to a stainless steal unit. Other features include larger air intakes at its front and rear wing and a closer ratio 6-speed transmission. The resulting affect is a meaner 911 Turbo that rockets from 0 to 60 mph in a pulse quickening 3.6 seconds and has a terminal velocity of 204 mph.

The 911 GT2 with its lighter weight, more muscular turbos, and rear wheel drive is a car that no ultra-enthusiastic Porschephile will be able to resist. ***AA***

Porsche Racing News

Porsche Wins at LeMans and at the Nurburgring

By: Kevin Sims
Photos By: Porsche Press

LeMans France -- Changing weather conditions at the 2007 LeMans race did not stop Porsche from seizing the top GT2 class podium spot. IMSA Performance's winning trio - Raymond Narac (France), German factory driver Richard Lietz and American factory driver Patrick Long - ran a steady pace throughout the race to bring home the victory in the Porsche 911 GT3 RSR.

The winning Porsche outlasted a pair of faster Ferrari F430 GTs that were forced to exit the race prematurely due to water pump problems. The IMSA Performance Porsche finished six laps ahead of a third Ferrari F430 GT, operated by the Risi Competizione/Krohn Racing team, to take home the glory.

"Once we forged a good lead, we reduced our speed in the last seven hours to conserve our car and were able to control the pace at the top of the GT2 class," said Long after winning his second career victory at LeMans.

Porsche's good fortune continued with team Autorlando securing the third place GT2 finish in their 911 GT3 RSR with drivers Lars Erik Nielsen (Denmark), Allan Simonsen (Denmark) and Pierre Ehret (Germany).

The triumph at LeMans marked the eighth GT2 class win in 9 years for the Porsche 911 GT3. Moreover, Porsche's victory claimed the 34th class success for the Porsche 911 series at the Sarthe Circuit.

LeMans was not the only endurance racing conquest recently captured by a Porsche GT3 RSR. Manthey Racing clinched an overall victory at the 2007 Nürburgring 24-Hour race making it their second consecutive win at the circuit. ***AA***

Porsche 1-2 Overall Win at Limerock

By: Kevin Sims
Photos By: Porsche Press

Limerock Motorsports Park, Conn. - The Penske Porsche RS Spyder played the underdog victor by defeating the mighty Audi R10s with a dominate one-two overall triumph. Sascha Maassen (Germany) and Ryan Briscoe (Australia) scored the fourth straight AMLS overall win for the Penske Porsche LMP2 race team by edging out fellow teammates Romain Dumas (France) and Timo Bernhard (Germany).

The two Penske Porsches dueled for must of the race with Bernhard mostly in the lead. During a yellow flag pit stop, Bernhard received only fuel while Briscoe got fuel and new tires. Shortly after the stop, Briscoe passed Bernhard in the last lead change with only 25 minutes left.

"It was a good call by Roger Penske, as it gave Timo a quick pit stop to maintain the lead, but gave us fresh tires in case something happened and we had to battle the Acuras at the finish," said Briscoe, "There were no team orders other than to avoid running into each other. With fresh tires and a good run on Timo down the straightaway, I was able to get by him cleanly."

In a David verse Goliath scenario, the Penske RS Spyders outdistanced the faster LMP1 class cars in earlier races this season at Long Beach, Houston, and Utah.

With the astonishing Limerock victory, Porsche has taken a commanding lead in the ALMS engine manufacturers points chase over Acura with 119 points to 86. ***AA***

What's New

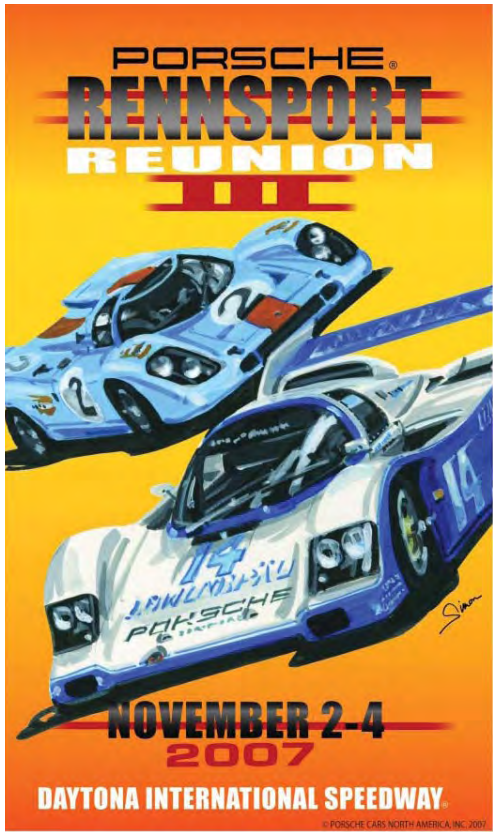
Porsche Event Announcement >> Rennsport III

By: Mark Ruffin

Three years of anticipation by Porsche enthusiasts will be rewarded with the 2007 Rennsport III event honoring the 917 series of racecars. The 917 is famed for its deliverance of Porsche's first overall win at Le Mans in 1970 and claiming another victory at the French circuit in 1971. The car's brutal performance, capable of 0 to 60 in less than 2.5 seconds and achieving speeds of over 248 MPH, will be one aspect of Porsche's vintage racing heritage on exhibit at the renowned Daytona International Speedway in Florida on November 2nd through the 4th.

"Given the tremendous response to our last event at Daytona," said Peter Schwarzenbauer, President and CEO of Porsche Cars North America, "Daytona International Speedway is the logical choice as the site for Rennsport III. The event will be steeped in Porsche racing history and the Daytona speedway is one of the few tracks in America capable of conducting an event of this magnitude."

Rennsport Reunion III will be a one-of-a-kind occasion where significant Porsche



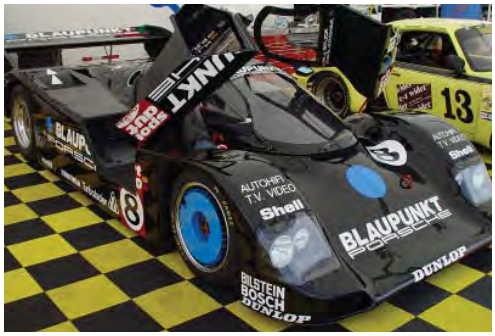
The Rennsport III will be held at the Daytona Speedway on Nov. 2nd to the 4th. This year's event will honor the 917 and 956/962 Porsche racecars.

"Just hearing the symphony of Porsche vintage race engines running flat out on the Daytona Speedway would make attending the event a once in a lifetime experience."

race cars from all eras will share the limelight and be able to strut their stuff on the track. Private collectors and the Porsche Museum will present the event's menu of vintage racecars that are only occasionally on display and rarely seen together. Just hearing the symphony of Porsche vintage race engines running flat out on the Daytona Speedway would make attending the event a once in a lifetime experience.

Sponsored by Porsche Cars North America and organized by Brian Redman's Intercontinental Events, Inc., the 3rd Rennsport event adds a Concours D'elegance of invitation-only Porsche racecars to its schedule. The "25th Anniversary of the Porsche 956/962" will be the focus of celebration at the Rennsport Concours D'elegance. Drivers such as John Andretti, Derek Bell, David Hobbs, Bruce Leven, Jochen Mass, John Morton, and Bobby Rahal will be present to share their personal racing experiences with event participants. The Porsche fraternity of race drivers appearing also includes such 917 drivers as Richard Attwood, Vic Elford, George Follmer, Hurley Haywood, Willy Kauhsen, Charlie Kemp, Gerald Larrousse, Rudi Lins, David Piper, Brian Redman, Derek Bell and Gijs van Lennep. The 'open to the public' councours and track events will be an intimate opportunity to surround oneself in Porsche racing history.

The last Rennsport Reunion, held in August of 2004, drew in hundreds of car collectors and their Porsche racecars. It's expected that the 2007 event will surpass the lofty attendance numbers of Rennsport II. With such an unparalleled collection of significant Porsche racecars, a rare reunion of important Porsche race drivers, and the unbridled enthusiasm of the most dedicated Porschephiles, Rennsport III promises to be another success. ***AA***



What's New

Porsche Tuning Releases

Farnbacher-Loles Cayman GTR Now In Production

The Farnbacher-Loles Cayman GTR made its debut at the LA-Auto Show as one of the featured cars on the Yokohama booth. While the display car was a pro-totype, it sported such production equipment as a 400HP 3.8 liter X-51 engine, a Sachs Sport clutch and a third radiator to assist in cooling the bigger engine. Carbon fiber mirrors, a height-adjustable rear spoiler, a 997 Cup inspired front end and a Euro-spec rear bumper are employed to make the GTRstandout in a crowd. To match the car's awesome accel-eration, the car's handling was improved by a CROSS Engineering developed coil-over suspension. The GTRis currently in production. With just 20 cars being pro-duced, the GTR is surely an exclusive piece of hardware.

Koro Introduces 4.0 to 5.1 Liter engines for 996 & 997

Koro Motors, known for assembling customer requested race cars in Germany, is working on offering customers with the ultimate GT3 configured 911 "Big Block." Ob-serving the popularity of the GT3, Koro believes that some customers simply prefer a non-turbocharged 911. Given the GT3's relatively small displacement, it seemed to Koro that the most realistic way of building a normally aspirated car to compete with either a factory or tuner 911 Turbo was to enlarge the flat-6 engine. Koro has produced several prototype 996 GT3s with upgraded engines varying in displacement from 4.0 to 5.1 liters. Though unavailable for sale, the Koro "Big Block" engine's potential is clearly worth noting.

TechArt's Vario & Vario Plus Suspensions

TechArt introduces 2 suspension systems for the Porsche 997 that give drivers more flexibility. The VarioPlus coil-over suspension, designed for PASM equipped cars, offers adjustable ride height by up to 25 millime-ters and selectable 'Normal'and 'Sport' damper se ings. Both se ings automatically firm up during sporty driving thus providing excellent ride comfort during leisurely driving and highly respon-sive handling during fast cornering. The Vario sport sus-pension, for cars with conventional damping, was set up with Bilstein's racing service and allows lowering up to 35 mm front and rear. Vario uses sport shock absorbers that are 9-way adjustable. As a result, the set-up can be adapted to any driver whether on racetrack or road.

EVOMS 997 TT Tuning System

Evolution Motorsport's new 997 Turbo tuning systems gives the opportunity to make a fast car evener faster. Working in conjunction with Garrett Lim and GIAC, EVOMS has developed 3 upgrades. The first, EVT S1 550, develops an additional 35 hp and 35 lb/ft of torque by reprogramming the computer's software while maintaining stock boost levels. The next level, EVT S2 580, provides more vroom by adjusting the first package's software upgrades to include an over-boost "sport Mode," thus delivering an extra 60 HP and 50 lb/ft of torque as compared to stock. For those desiring even more, EVOMS offers the EVT S2 package with a Sport Exhaust system delivering 80 hp and 80 lbs/ft of torque over stock.

Recent Release

TechArt GTstreet >> Brute Force Meets Hollywood

By: Kevin Sims

Whether needing a car to blitz the Autobahn or to display bling at a Hollywood party, the TechArt GTstreet is the perfect car for both venues. The GTstreet continues TechArt's tradition, injecting more "Wow Factor" into Porsche derived cars through performance and styling enhancements. The resulting affect of TechArt's magic is a car that sets it self apart from the 997 Turbo from which it is based.

AUTOBAHN PROWESS

In its second generation, the GTstreet delivers performance that firmly places it among the world's fastest sports cars. The car is an acceleration beast that requires only 3.2 seconds to attain 62 mph and only 10.9 seconds to swish past the 124 mph mark. The car's quickness is matched with a land devouring top speed of 214 mph.

The heart and soul of the new GTstreet is its powerful engine. The TechArt modified 3.6-liter twin-turbo flat engine cranks out 630 hp at 6,800 rpm with a peak torque rating of 590 lb/ft at 4,500 rpm. With such motivation it's no wonder that the car possesses such world class performance.

TechArt's TA 097/T3 engine conversion provides the "go-fast" technology for the GTstreet. The conversion package comprises of two special VTG turbochargers, a new air box with sport air filter, high-performance manifolds, intercoolers and a stainless-steel sport exhaust system with high-performance catalysts. The fuel delivery, ignition timing and turbo boost levels are optimized through a newly programmed TechArt engine management system.

All of this power is a waste unless it is delivered to the ground. The 997 derived all wheel drive system applies power to the pavement via a modified transmission with TechArt gear-throw shortening.

The GTstreet comes with a TechArt VarioPlus coil-over suspension that is based on the electronically adjustable PASM damping system of the 911 Turbo. This chassis allows individual ride-height

lowering by up to 25 millimeters and push-button selection of two different damper settings, "Normal" or "Sport."

HOLLYWOOD GLAMOUR PRODUCED IN A WIND TUNNEL

Sports cars in Hollywood are not just playthings; they are jewelry. Spoilers, air dams, scoops, and air defusers are all necessary to grab attention. Excess is always in. TechArt shaped the GTstreet with plenty of such exotic features. However, unlike Hollywood, the GTstreet's bling has substance.

The car's body modifications were developed at Stuttgart University's wind tunnel that is cable of testing automotive aerodynamics up to 200 MPH.

The beautifully scalped front fascia features retractable carbon-fiber splitters to produce additional downforce and provides air inlets for radiator, oil and brake cooling. Fender flares on the front axle add 10 mm to the car's door width and air outlets behind the front wheel houses optimize brake venting. The larger air ducts in the rear sidewalls provide the engine and intercoolers with additional air for cooling. TechArt designed rocker panels are included to optimize aerodynamic transition between the front and rear fenders. A roof spoiler is designed to improve airflow to the car's adjustable rear airfoil. The aerodynamic overhaul concludes with a rear fascia integrated with a carbon-fiber diffuser.

The combined aerodynamic tweaking generates an addition 150 lbs of downforce at 100 mph giving the GTstreet better stability at speed.

The GTStreet gives its buyers two chooses of rotational bling; the TechArt one-piece Formula wheels or the multi-piece Formula II wheels both featuring 8.5Jx20 up front and 12Jx20 out back. TechArt provides ContiSportContact 3 high-performance tires in sizes 245/30 ZR 20 and 325/25 ZR 20. The extra wheel height as compared to stock provides the necessary room for TechArt's high-performance brake system featuring six-piston aluminum fixed calipers and 390-millimeter discs on the front and 365-millimeter discs and four-piston fixed calipers at the rear.

With more power, enhanced aerodynamics, and a tuned suspension the TechArt GTstreet raises the bar for other ultra-performance car companies to match. ***AA***

TechArt GTstreet Specs

General
Length: 175.2 in
Width: 72.9 in
Height: 50.2 in
Wheelbase: 92.5 in
Curb Weight: 3509.8 lb (Manual)
3586.9 lb (Tiptronic S)

Engine
Watercooled Flat-6, twin-turbo
Displacement: 3,600 cc
Bore x Stroke: 100 x 76.4 mm
Max Power: 630 hp @ 6,800 rpm
Max Torque: 604 lb/ft @ 4,500 rpm

Performance
0 to 62 mph: 3.4 sec (manual)
3.2 (Tiptronic S)
0 to 124 mph: 11.4 sec (manual)
10.9 (Tiptronic S)

RUF CTR3

Ruf Enters New Territory

By: Kevin Sims

It was roughly twenty years ago that Ruf's first CTR, nicknamed "Yellowbird," trounced the best the automotive world had to offer in Road and Track Magazine's Top Speed showdown. Achieving a terminal velocity of 213 mph, Yellowbird even defeated the Porsche factory's technological pride and joy, the 959. As a result, the Ruf reputation for speed and technology became known by enthusiasts around the world. Ruf is once again ready to stun the world with performance and innovation.

Unveiled at the recent ground opening of Ruf's new Bahrain factory, the CTR3 is a real head turner and delivers astonishing performance. The car accelerates from 0-62 mph in a mere 3.2 seconds and rockets to a stellar maximum speed of 235 mph. Considering that Ruf's new faculty is located at the modern Bahrain F1 circuit, Ruf test drivers must have a load of fun whining out this bad boy.

According to Ruf their new CTR3 represents a step forward in the company's thinking as a supercar builder. Unlike previous Ruf cars that are built around unmarked Porsche frames, the CTR3 only shares the front portion of the steel Porsche 911 GT3 RS frame (from the A-pillar forward) thus allowing Ruf to design an original

"The CTR3's classical lines and rear-windowless design were influenced by the '53 Porsche LeMans Coupe. The car's rear spoiler, air venting and under body diffuser add a modern touch to this beautiful shape."

space frame to mount aft. The aluminum rear space frame generates a longer overall wheelbase of 103.3 inches, an increase of 10.4 inches over the GT3 RS frame. The new platform creates enough room to develop the CTR3 into a mid engine design that provides exceptional balance and agile handling.

The body of the CTR3 is a completely new development. Only the aluminum doors and hood are supplied by Porsche. The rest of the carbon fiber body is an in-house Ruf design and penned by Ben Soderberg. The classical sports car lines and rear-windowless design were influenced by the 1953 Porsche LeMans Coupe. Aerodynamically designed for high speed, the CTR3's rear spoiler, air venting and under body diffuser add a modern touch to this beautiful shape. With an empty weight of 3,086 lbs the resulting power to weight ratio is only 4.4lbs per hp.

The CTR3 engine relies on RUF's 30 years of experience with turbocharged boxer engines. Its twin turbocharged 3.8 liter flat six cylinder engine has an output of 700 hp at 7,000 rpm with a maximum torque of 657 lb/ft at 4,000 rpm. Each turbocharger is provided a Ruf designed intercooler placed in front of each rear wheel.

Ruf endowed the CTR3 with a sequential shift six speed transmission that's transversally mounted to car's rear space frame. We are told that the unit can manage torque of up to 885 ft/lbs. A shift indicator on the dashboard shows the gear in use. A limited slip differential is

Unlike other Ruf cars, the CTR3 features a rear space frame mounted to the front portion of a Porsche 911 GT3 RS's unibody.

provided to maximize the "spirited driving" performance.

As with the rest of the CTR, the sport-tuned suspension is designed with high speed driving and safety in mind. The front McPherson strut suspension is derived from the Porsche 911 GT3 RS and is enhanced with Ruf's usual upgrades including anti-roll bar, Bilstein Shocks and more. The rear suspension shares nothing with a Porsche. Its horizontal coil over shock with fixed push rod design is more in line with a modern prototype racecar than the usual street passenger car. Ruf wants to give the CTR3 driver the closest possible racing feel without making its day-day driving reality harsh. The CTR3 is intended to be used as a daily driver and track car as one package.

The brake system is designed to match the high performance of the engine and suspension. Both front and rear axles utilize 6 piston fixed light alloy calipers and ventilated, cross drilled ceramic composite discs. Each brake disc is 15 inches in diameter. A specially designed Bosch anti-lock braking system is standard.

The CTR3 rolls on forged aluminum wheels with central locking. At the front 255/35 ZR 19" tires are mounted on 8.5" X 19" wheels, while at the rear 335/30 ZR 20" tires are mounted on 12.5" X 20" wheels.

The Ruf CTR3 is planned to be available for customer delivery in October 2007. The sale price will be 380,000 Euros plus VAT taxes in Europe. According to Wayne Corley at Ruf Auto Center in Dallas, TX, the CTR3 is coming State-side. However, a date is yet to be released on US deliveries.

In a sense the RUF CTR3 represents territory yet to be explored by the little firm from Pfaffenhausen, Germany. Surely the CTR3's in-house designed body and rear subframe represent new engineering endeavors for Ruf; however, the idea a more Ruf designed car should be no surprise. Ruf has been on a steady path towards industrial independence for more than 30 years. There will come a day when Ruf will introduce a car that is wholly Ruf. And on that day journalists will write that the greatness of CTR3 made it possible. ***AA***

Ruf CTR3 Specs

General
Length: 175 in
Width: 76.5 in
Height: 47.2 in
Wheelbase: 103.3 in
Curb Weight: 3086.4 lb

Body
Body build in steel, aluminium and kevlar-carbon
Rollover protection in A-pillar and in tubular unit
Tubular unit joined w/ front chassis at sill beam & A pillar

Engine
Watercooled Flat-6, twin-turbo
Displacement: 3,746 cc
Bore x Stroke: 102 x 76.4 mm
Max Power: 700 hp @ 7000 rpm
Max Torque: 656.5 lb/ft
C/R: 9.2:1
ECU: Bosch Motronic w/ OBD-2
Turbochargers: 2 KKK
Intercoolers: 2 Ruf Air to Air

Transmission
Type: Sequential 6-speed-manual, transversal, angle drive, shift indicator in the instrument panel.
Limited Slip Diff: Multi-disc locking
Power Delivery: Mid engine/Rear wheel

Suspension, Wheel & Brakes
Front Axle: McPherson struts, anti-roll bar
Rear Axle: Multilink rear axle, anti-roll bar; horiz. coil over shock absorbers
Brake Calliper f/r: 6 piston fixed light alloy
Brake Disc f/r: Ventilated & cross drilled; ceramic composite discs
Brake Diameter f/r: 15 in/15 in
Wheels f/r: 8.5" x 19 / 12.5" x 20
Tires: F - 255/35 ZR 19
R - 335/30 ZR 20

Performance
0 to 62 mph: 3.2 sec
Top Speed: 235 mph

Ruf RK Coupe

A Blending of Italian Art and German Engineering

By: Kevin Sims

The Ruf RK Coupe is an expression of automotive passion more than a motive for high-end transportation. Alfredo Stola, founder of STUDIOTORINO, develops the RK Coupe's beautifully sculpted shape. He intended the body of the Porsche Cayman S based car to reflect his own tastes in cars. His personal collection houses examples of some of the most coveted cars in history, including a Lamborghini Miura S, a Maserati 200 SI, a Ferrari Dino 246 GTS, and a Bugatti 57 Cabriolet.

"RK Coupe clients are sophisticated automotive people, who desire artistic grace as much as engineering prowess. Many of them are dedicated Porsche customers who want to take a car and purify it."

Being Italian, the cars from home have a special place in his collection, however, the Porsches he owns are as close to his heart as any from Italy. In his opinion, cars such as the 904, the Speedster and the 550 Spyder established a style that is as relevant today as when they were built. He has one of each of these classics.

"From my car collection I find design inspiration to apply to modern times," Alfredo shares with a smile of pride.

The idea for the RK car concept came to him after the production Boxster was released in 1997. He believed the Boxster was a missed opportunity to pay homage to the great Porsches of the past. Although beautiful, Alfredo felt that the production car lacked subtle vintage qualities found in the Boxster concept car. The low mounted air vents in the quarter panels, the twin-pipe exhaust, and the racing-inspired gas lid are a few of the tasty niceties that didn't reach production.

Alfredo thought that a true Porschephile would appreciate such details and somehow should be corrected. After approaching Ruf about the idea, Alois Ruf agreed. A joint venture between STUDIOTORINO and Ruf was formed that yielded the RK Spyder, based on the Boxster. The stunning attention to detail and styling on this car is directly influenced by the 550 Spyder and Speedster. Released in 2005, the car created a sensation. The RK Spyder was featured in all the automotive press and its pictures were plastered all over the internet. Alfredo's idea was a success.

AN ARTIST'S EYE

The Ruf RK Coupe, released in 2006, continues Alfredo Stola's concept of blending classic Porsche details to modern cars.

"RK Coupe clients are sophisticated and cultured automotive people, who desire artistic grace as much as engineering prowess. Many of them are dedicated Porsche customers who want to take a car and purify it. They want to take an outstanding concept, such as the Cayman, and make it even more special by adding hand sculpted details. Since Porsche is now a higher volume manufacture, it is not viable for them to make cars that appeal to such niche tastes as in the days of old. The RK Coupe fills the needs of the artist." explains Alfredo.

In traditional Ruf fashion, the RK Coupe's frame is based on an unmarked Porsche Cayman S unit. The car's body is manufactured by STUDIOTORINO at their shop in Turin, Italy. Except for the front left fender the body is a whole new design and hand crafted. The materials used for the custom body are steel sheets, aluminum and carbon fiber. Special attention was made to the front and rear bumpers to give the car a distinctive style and is the most Italian feature of the RK Coupe. Style meets function as the front bumpers also provide additional air flow to the engine's larger radiators and massive centrally located water-charged intercoolers for the supercharger. The opening mesh on the rear bumpers assists in cooling the engine by allowing hot air to vent.

The RK Coupe's most obvious visual distinction from the Cayman S is the removal of the rear hatch and the C-pillar's side window. STUDIOTORINO replaces the stock hatch with a "flying buttress" style design that features a vertical rear window. Alfredo's inspiration for both of these hand-crafted alterations was the Porsche 904 and transforms the car to a true fast-back form. The Cayman's side air vents were also moved from just in front of the rear wheels to the lower part of the quarter panels to remind one of Boxster concept car's vintage look. The observant eye will notice a colored band at the back of the RK Coupé that traces two distinct lines onto the rear fenders. This beautiful detail harks back to the early 550 Spyder racecars and helps accentuate the RK Coupe's larger rear fender flaring as compared to the Cayman.

"Hand tailored quality surrounds the RK Coupe. Such details furnish the car a level of quality seldomly seen on modern cars and help contribute to Alfredo's artistic vision."

After viewing the quality and beauty of the RK Coupe, it's clear that Alfredo Stola (pictured below wearing glasses) has mastered the fusion of classical and modern styling.

Hand tailored quality surrounds the car. The hood mounted fuel tank lid and the muffler's end pipes are milled from forged aluminum and are hand finished. The gorgeous PPG paint is applied through five coats and is also hand finished. Under close inspection there is absolutely no sign of orange peel, a condition that must Italian super cars manufacturers can not say of their cars. As an extra added eccentricity, the Ruf and RK Coupe logos are painted onto the car with a subtle metallic deep gray finish. Such details furnish the car a level of quality seldomly seen on modern cars and help contribute to Alfredo's artistic vision.

Special attention has been focused on the aesthetics of the interior. The lower part of the dashboard, the steering wheel, the door panels and the center console has been hand upholstered with luxurious leather by POLTRONA FRAU. The lightweight carbon fiber sport seats by Toora are hand upholstered using lavish leather and feature an electronically reclining back rest. STUDIOTORINO has blocked off the Cayman's hatchback luggage space from the interior by adding a leather covered wall behind the RK Coupe's front seats to give the car more of a driver's cockpit feel. The resulting affect gives the car an Italian super car facade.

After viewing the quality and beauty of the RK Coupe in person it's clear that Alfredo Stola's designers have mastered the fusion of classical and modern styling. We look forward to seeing more work from STUDIOTORINO in the future.

GERMAN SUPERCHARGED BRAWN

As with all Ruf cars, the RK Coupe's main attraction is its powerful engine. The basis for the car's kompressor powerplant is the 997's 3.8 liter flat-6. The com-

"Ruf employs an ASA centrifugal supercharger to supply the forced air into the RK's engine. The belt driven blower receives its crankshaft torque via a unique system Ruf calls a Planetary Gearbox."

Below: The RK Coupe includes a specially designed Bilstein coil spring/shock system with larger Bremo brakes. Bottom: STUDIOTORINO modifying the Cayman S body.

pression ratio has been slightly lowered to 10.0:1 using specially designed thinner head gaskets to strengthen the engine internally for the addition of forced induction. Ruf decided not to reduce the compression further to retain the engine's lower RPM performance.

Ruf employs an ASA centrifugal supercharger to supply the forced air into the engine. The centrifugal supercharger design was selected over a more traditional roots model due to it's inherit compactness and improved higher RPM performance.

The belt driven blower receives its crankshaft torque via a unique system Ruf calls a Planetary Gearbox. The system is essentially a compound planetary gearset that adjusts the supercharger's drive gearing to help match the engine's volumetric efficiency as RPMs change. The result is a supercharger that delivers the right amount of forced air when it's needed. As compared to a stock Porsche turbocharged engine, the Ruf planetary gearbox driven supercharger delivers a flatter torque curve while providing power at the top end. To the driver, the system provides a feel that's a lot more like a larger displacement engine with normal aspiration. After all, the Ruf customer desires grunt at all ends of the RPM spectrum.

The supercharger's pressurized air is cooled directly in the engine's cast alloy manifolds through an integrated water intercooler system. An electronically operated pump circulates water from jackets inside each manifold through its own front-mounted radiator. The Ruf designed system saves weight while greatly improving the induction airflow as compared to more traditional arrangements. The usage of larger capacity fuel injectors and the mentioned supercharging technology yields a maximum boost of 10.2 PSI while maintaining stock fuel pressure levels.

Further Ruf tweaking includes a custom air box, higher capacity catalytic converters, and a sport tuned exhaust. The car's ECU is an improved Motronic system that is tasked with monitoring the engine's fuel, manifold pressure, and

"It's important to note that the car's engine doesn't only deliver top end power. The Ruf RK's engine was designed to create power everywhere in the rev range making it a flexible unit."

ignition needs. The complete RK engine package only adds a mere 44 lbs as compared to the stock Cayman S unit yet delivers massive power. Ruf quotes the RK engine as producing a whooping 440 hp at 7,000 RPM and a blistering 347 lb/ft of torque at 5500 RPM. The RK unit adds a tremendous 145 hp as compared to the original engine. In discussions with Alfredo Stola, he reminded us that Alois Ruf prefers to underestimate horsepower ratings and believes that the engine produces more power than quoted. He also disclosed to us that Road and Track Magazine tested the car as producing a 0 to 60 time of 3.8 seconds that's 1.3 seconds quicker than the stock Cayman S as quoted by Porsche.

It's important to note that the car's engine doesn't only deliver strong top engine power. The Ruf RK engine package was designed to create power everywhere in the rev range making it a flexible motor. For those that love this car's engine and would rather retain the stock Porsche Cayman S body and interior, Ruf offers the RK engine to anyone wanting to upgrade their factory car.

COMPLETING THE ENHANCEMENT

Upgrading a car without making suspension and braking enhancements is similar to only half dressing in the morning. No matter the greatness of what was completed the missing elements are going to be quite noticeable. It appears that Ruf would agree with this analogy as they made sure the RK Coupe leaves the factory with proper upgraded suspension and braking attire.

Ruf replaced Porsche's PASM driving assistance system with its own suspension design. Developed in conjunction with Bilstein, the RK Coupe is equipped with a specially designed coil spring and shock/strut arrangement that's intended to give the car a more communicative ride without jarring its occupants. The new setup improves corning ability by lowering the car's ride height; 20mm in the front and 10mm in the rear.

The five spoke wheels provide a unique visual detail. Customers can choice between the classic Ruf wheel design and a newly created STUDIOTORINO design. Both wheels are of the same dimensions. The front receive 19 x 8.5 inch wheels sporting 235/35 ZR 19 tires, while the rear utilizes 19 x 10 inch wheels with 265/30 ZR 19 tires. The extra rubber in the front not only enhances the car's road holding ability the added width improves the car's steering feel.

The 19 inches wheels create the extra space needed for the larger Bremo braking system. Extra braking power is guaranteed with a front 6 piston, fixed caliper design using 13.8 inch vented and perforated rotors. Out back the addition of a 4 piston, fixed caliper design with 11.8 inch vented and perforated rotors rounds out the car's braking improvements. The car retains Porsche's Bosch ABS 8.0 system to ensure a lockless braking experience.

SUMMING IT UP

The joint venture between STUDIOTORINO and Ruf achieves its goals with the RK Coupe. Through a unique Italian and German partnership, this collaboration bears a stunning car with styling cues that are reminiscent of the past's great Porsches while clearly being a modern design. Its 440 hp, 3.8 liter supercharged flat-6 engine delivers performance that any car enthusiast would appreciate. And lastly, the car's hand built quality and attention to artistic details proves that even in our modern, high-tech society a car can still be produced with soul.

Simply expressed, the Ruf RK Coupe is Alfredo Stola's vision realized. With a total planned production of 49 examples, interested buyers need to act quickly to ensure they can purchase one. ***AA***

Ruf RK Coupe Specs

General
Length: 170.4 in
Width: 70.9 in
Height: 49.2 in
Wheelbase: 95.1 in
Curb Weight: 3210 lb

Engine
Watercooled Flat-6, Supercharged
Displacement: 3,824 cc
Bore x Stroke: 99 x 82.8 mm
Max Power: 440 hp @ 7000 rpm
Max Torque: 347 lb/ft @ 5500 rpm
C/R: 10.0:1
ECU: Bosch ME7.8
Supercharger: ASA centrifugal w/ plantary geardrive
Intercoolers: Ruf Watercharged

Transmission
Type: 6-speed-manual transmission
Limited Slip Diff: Multi-disc locking
Power Delivery: Mid engine/Rear wheel
Suspension, Wheel & Brakes
Front Axle: McPherson struts, anti-roll bar
Rear Axle: Multilink rear axle, anti-roll bar; horiz. coil over shock absorbers
Brake Calliper f/r: 6 piston/4 piston
Brake Disc f/r: Ventilated & cross drilled
Brake Diameter f/r: 13.8 in/11.8 in
Wheels f/r: 8.5" x 19 / 10" x 19
Tires: F - 235/35 ZR 19
R - 265/35 ZR 19

Performance
0 to 62 mph: 4.0 sec
Top Speed: 170 mph
(gear limited)

TPC Racing's 993 GT2 EVO

Mike Levitas on the Brute Force of "Orange Crush"

By: Brian Nixon
Photos By: John Squire

Michael Levitas, a 2006 Rolex 24 at Daytona champion racecar driver, and owner of the winning team TPC Racing, roots are firmly founded in his orange crush. No, not the soft drink, but a carbon-fiber clad 800-plus horsepower twin-turbocharged machine that marries key elements of a Porsche 964 and a 993 GT2 EVO.

This car has taken Levitas from Porsche Club of America club racing to campaigns in the old Rolex Grand-Am Super GT class and now back to club and vintage racing events. For Levitas, the car has been a learning tool -- both on the track and in the shop -- and a test mule. He's poured

his expertise and sweat equity into it and gained new knowledge in return. He's had a lot of fun, too.

THAT COUPLED FEELING

In many circles, it's known simply as "the orange car." On circuits around the country -- particularly those on the East Coast -- it's also known as the one other drivers try to beat. It's a noble cause to chase a thoroughbred, but be forewarned if the orange car is in your run group. This car ran away from an angry pack of 962s at Rennsport Reunion II at Daytona.

Levitas describes the car as a 1990 Porsche GT2 EVO, but there's more to it. It was purpose built for Grand-Am racing following homologation rules and minimum weight requirements.

Under the rules at the time, the minimum weight in the unrestricted category was 2,660 pounds (with an empty fuel tank but all other required fluids on board). The final "dry" weight of Levitas' car was 2,666. That's a result within 0.23 percent of the goal. And Levitas got there without added dead-weight ballast, an accomplishment that other spec-built car builders can't always brag about.

The car's carbon fiber body -- were talking fenders, hood, doors, etc. -- is indeed a Porsche 993 EVO and was built from molds taken directly from 993 panels. The GT2 rear decklid and required Crawford rear wing are also carbon fiber.

The carbon fiber panels are hung on an earlier 964 chassis tub. Dzus fasteners securely mount the body components to the chassis while enabling easier and quicker access to internal and suspension components.

Levitas says he chose the 964 tub platform "because it was a very proven chassis." As important, he adds, is that he could shift the rear engine/transaxle combination forward 1 inch.

The devil is in the details -- and the 1-inch move forward was anything but dead simple -- but the gain in balance and handling was well worth it. "It made a huge difference," says Levitas. "The 993 guys couldn't get the exit speed out of the corner."

Inside the car, a custom cage fabricated by Levitas and his TPC team out of 4340 alloy steel adds serious rigidity to the car while protecting the driver. This added rigidity is important in connecting the front and rear of a car and avoiding having a hinge in the middle.

TPC Racing's 993 GT2 Evo is a full-fledge race car. With roughly 825 hp pushing a 2,666 lb car it is easy to see why the "Orange Car" is feared at PCA club events.

As Levitas explains, "You want to have that coupled feeling."

And lots of horsepower. The twin-turbocharged 1998 993 3.6 liter engine produces around 824 ponies on the TPC dynamometer (actually TPC racing has two dynos in its shop). By way of comparison, the turbocharged Penske Racing 917/10 driven by George Follmer that won the 1972 Can-Am series produced 850 horsepower. Elite company, you might say.

Much like the rest of the car, details abound when it comes to the engine's setup.

For one thing, the engine's cooling fan (remember, this is a Porsche air-cooled flat six), is driven by twin belts connected to the rear crank pulley. Most air-cooled 911s have but one belt for this application. However, with the torque and RPM range this engine is capable of (the redline is at 8,000 RPMs under 1.1 bar of boost), a single belt would simply give up the ghost. In fact, at the extremes, belt deflection and stretch was a very real issue, as Levitas could see in dyno testing.

Top: The NACA inspired intercooler is vital in making big power. The design's flow dynamics limit the amount of resistance thus generating more boost. Bottom: The engine/transaxle are moved 1 inch within the wheelbase to improve weight distribution.

The solution was the twin-belt drive. Even so, Levitas hunted around for industrial belts that were up to the abuse of the engine's crank spinning at only-on-a-racetrack crazy revolutions.

Another detail underneath is the header-collector design feeding the twin turbos and exhaust system. For this application, Levitas, whose background is in engineering with a degree from Embry-Riddle Aeronautical University (based, interestingly enough, in Daytona Beach, Fla.), borrowed a design for a Lycoming aircraft engine he found online in old National Advisory Committee for Aeronautics -- NACA -- research files from the 1930s. The NACA, was founded in 1915 as a federal agency for aeronautical research. In 1958, NACA became the National Aeronautics and Space Administration, or NASA.

What the old Lycoming research and design showed was that engineers even then were paying close attention to engine airflow dynamics, including exhaust header tube size, angles, lengths and curves. While their modeling techniques were crude compared to what can be accomplished today, their results were quite contemporary and applicable. What works, works.

"Rocket science comes to mind when you ask Levitas about driving his orange GT2 Evo car. "All you feel is this horrible g load," he says. "It feels like you're in an experiment with a NASA rocket sled."

Left: No extra weight here. Top: Serious brakes for a serious job. Below: Aerodynamic aids assist in the car's stability.

Inside the engine's case, a set of Carillo rods connect the TPC Racing-machined Mahle pistons to the balanced and polished crank. The engine's compression ratio is 9 to 1 and a Motec engine management system provides the brains behind the brute force.

One particular innovation is the engine's sealed combustion chamber designed by Levitas and his TPC Racing team. This involved sourcing a suitable material and machining a thin L-shaped ring that helps locate and seal the cylinder heads to the jugs. This sort of thing isn't necessary on a street or even a moderate-duty track car. However, in the performance regime Levitas' car lives in, successfully sealing the combustion chamber means no loss of compression and power at the extreme.

The engine's intercooler is another custom TPC Racing touch. Here again, Levitas paid close attention to airflow dynamics in smoothing things out to maximize the engine's breathing. Ditto for the plumbing feeding the Garrett twin turbos, which feature lightweight integrated wastegates.

A custom TPC Racing flywheel connects the engine to the transaxle through a Tilton Engineering three-plate clutch. The GT2 gearbox features straight-cut gears. Driver gear changes are executed through a Fabcar Engineering shift assembly. The transmission is dry sumped and has an external cooler to keep things comfy under hard loads.

One footnote about the 1.1 bar of boost Levitas runs. While this might seem low, given the system's efficiency, it packs plenty of punch without risking damage to costly engine internals.

GIVING AN INCH

Remember our mention of Levitas moving the engine/transaxle assembly forward 1 inch? While we don't want to overstate things, getting there was nearly one of those for-want-of-a-nail situations.

Moving all that weight forward would reduce the pendulum effect at work in the turns. At the same time, Levitas didn't want to change the car's fore-aft wheelbase, since doing so would likely moot the gains made in the first place.

To accomplish both objectives, Levitas moved the engine and transaxle forward the required one inch while the drive shafts -- no longer perpendicular to the gearbox and differential -- would still

connect to the rear wheels through pairs of inboard and outboard 935-type constant-velocity joints.

Because of the somewhat unusual--and continuous--trailing operating agle, the drive shafts had to be longer than stock. And, with an engine wanting to put gobs of power to the pavement at the twitch of a right foot, drive shaft axle strength was also a concern.

Levitas sourced high-strength axles (think off-road carting here) that he had to cut down to fit -- not a simple machining task given the hardness of the material. With patience and perspiration the job got done. Next up was machining the CV joint balls and races by a half-thousandth of an inch to improve their running because of the tricky operating angles.

Much thought went into the car's other components systems, including the JRZ Suspension Engineering shocks, springs, struts and bushings, dual master cylinders that enable brake biasing adjustments from the cockpit, and multi-piston Brembo brake calipers for stopping power. There are lots more details, so take some time to study our spec sheet on the car.

One key takeaway from Levitas' experience in building the car is that it takes effort and attention to detail. "The biggest lesson is if you're determined to work hard, you can make any project work," he says. "Technology and practical applications have to blend. It's got to meet the pavement somewhere along the line."

WORDS OF WISDOM

When it comes to race car design, set up and driving Michael Levitas has two words of wisdom: "Exit speed, exit speed, exit speed."

OK, that's six words, but the treble emphasis underscores the importance of his advice. If you want to go fast around a circuit, it's not so much about speed into a turn as it is about quickly departing a turn. You may have heard this bit of wisdom also described as "slow in, fast out."

You want smooth corner entry and then the ability to get out quickly to the next turn. In fact, rocket science comes to mind when you ask Levitas about driving his orange 1990 GT2 EVO GTS car.

"All you feel is this horrible g load," Levitas says. "It feels like you're in an experiment with a NASA rocket sled."

With its tremendous power and acceleration, driving the car around a track breaks down to a series of sprints. Accelerate hard, slow to corner smoothly and blast out. Repeat again and again, up to 24 hours.

"There's something about pressing that gas pedal and freaking going," Levi-

Right: Michael Levitas is not only a Porsche tuner, but a race champion with his 2006 Rolex 24 at Daytona GT Class victory in a TPC prepared 911 GT3.

tas says. "Any straightaway is a fun time. It's an acceleration machine."

So much fun that Levitas wonders why drag racers limit themselves to the quarter-mile. On a road course, drivers get to enjoy repeated drag races as they circuit the track.

On the track with his car, Levitas also gets to enjoy the feeling of the car pulling 1 g in fifth gear. "That's brutal acceleration," he says. "It gets your attention."

And the attention of other drivers and onlookers as "the orange car" and its champion driver continue to dice and dance on various venues around the country.

IN LIVING COLOR

Levitas' car is clad in a distinctive orange coating, and the interior cockpit and roll cage is yellow. It's only natural to ponder what the exact orange color is. However, guess again if you suspect that the car is Porsche signal orange or a similar factory shade.

The car is actually industrial orange, as in, ahem, tractor-trailer fleet orange. Levitas found it one day while flipping through a book of industrial paint chips. The complimentary yellow for the car's interior came from the same source book.

Put down your coffee now and take a deep breath.

Before getting wrapped around the axle about Porsche colors -- how Stuttgart and the boys at BASF Glasurit rightly understand best how a performance car ought to look --know that a race car lives a hard, dedicated life. Levitas wanted a finish that could stand up to abuse -- the indignities of close encounters with Armco barriers and tire walls, the constant sandblasting from track particles and debris, and the normal scrubbing and rubbing from other cars in the circuit scrum.

Race car designers and builders seek elegant, simple solutions to manifold challenges. In this case, Levitas' orange paint, like so many elements of the car, works well. Add in the splashes of green -- he got this idea from son Harry's watching of Nickelodeon TV -- and the car makes a distinctive and durable presentation.

OK, you can pick up that grande-sized coffee again.

Along with club racing and Grand-Am, the car has not missed a Rennsport Reunion, making on-track appearances at the first event at Watkins Glen International and the second at Daytona International Speedway.

It was at Rennsport Reunion II in the spring of 2004 that Levitas found himself on the grid with the clutch of 962s. The scene resulted in puzzlement from the 962 jockeys, who were clearly wondering, in Levitas' words, "What's that guy doing here?"

"Brian Redman (the famed driver and Rennsport Reunion organizer) knew what he was doing," Levitas recalls. The 962 drivers, on the other hand, did not know what was coming.

Adding to the confusion was the fact that Randy Pobst was introduced by the track announcer as the driver of the orange car, which resulted in much amusement from the Daytona paddock, where Pobst was watching events unfold.

The 962s got a surprise as Levitas sprinted off in the orange car and quickly cleared the field before dialing back the turbo boost a bit as the oil temp began to rise to an alarming level. "I was a half a lap ahead of the field," he says. "By then I had proved my point. It's just great fun."

On the Daytona road course, Levitas' car is running right around 199 mph as he passes the flagman and will top 200 entering the next turn.

Levitas plans to continue to campaign the car in Historic Sportscar Racing events, club events and this fall's Rennsport Reunion III at Daytona.

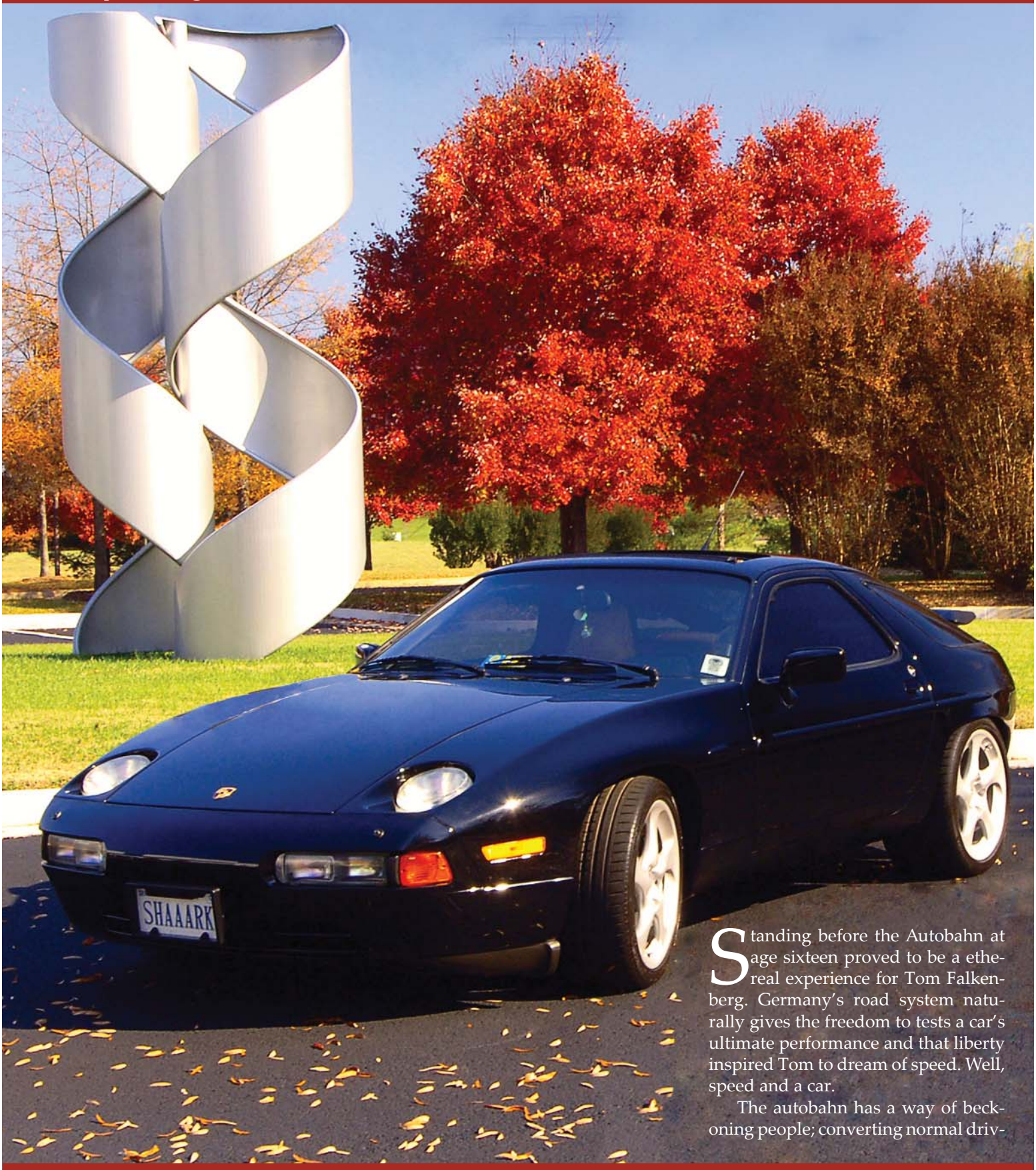
"The car kind of speaks for itself," says Levitas. "It's a balance of everything. It still presents to this day as a modern fighter." ***AA***

Brian Nixon is a veteran Washington, D.C.-based journalist. When not involved in writing projects, he can often be found in his garage, wrenching on his 1982 Porsche 911SC Targa and pondering the Teutonic mysticism of the five-gauge dash.

Supercharged 1989 928 S4

Sharpening the Teeth of a Black Shark

By: Jon Norsworthy and Kevin Sims
Photos By: John Squire



Standing before the Autobahn at age sixteen proved to be a ethereal experience for Tom Falkenberg. Germany's road system naturally gives the freedom to tests a car's ultimate performance and that liberty inspired Tom to dream of speed. Well, speed and a car.

The autobahn has a way of beckoning people; converting normal driv-

"Originality would not be enough to satisfy the shark builder within. Tom desired a 928 that, as he put it, had a 'real kick in the pants' and could exit corners hard."

ers into car enthusiasts and Tom was no different. Tom was ready to feel the push of downforce on a sports car at speeds of over 120 miles per hour. But he had one large obstacle ahead of him. Who would lend a sports car to an American teenager to frolic at top speeds? His choices were slim. The German relatives the Falkenbergs were visiting had a 1976 Mercedes-Benz 240D sporting a hole in its exhaust and they also owned a brand new 1978 Porsche 928 just released to the public. To his surprise, the relatives handed over the keys to the Porsche. "Now, this is the way to experience the Autobahn," exclaimed Tom.

What then transpired, was a week long high speed nirvana. And after that Tom was hooked. Fast forward to 2007 and now Tom is a bit of a 928 connoisseur. Since his autobahn rebirth, Tom has owned seven 928s in just 29 years. Currently he owns four, yes that is right, four 928s. His taste for unspoiled antiquities is represented in his '90 GT with only 27,000 miles purchased from a collector in Beverley Hills, CA. Even with his pallet for pristine collectibles, the blood of an American Hot Rod maniac pumped though his veins. Precision and originality would not be enough to satisfy the shark builder within. He desired a 928 that, as he put it, had a "real kick in the pants" and could exit corners hard at the racetrack. Over time he discovered that more than one modified 928 would be required to fulfill his varying appetites.

What has emerged from his cravings is a diverse assortment of sharks on steroids. In addition to his perfectly preserved 1990 GT, he also has a full fledged race car on an '87 chassis with a stroked and supercharged engine. He loves the tremendous punch that a supercharger adds to a 928 on the track and thus he has two for the street. The one currently on the road is a centrifugally supercharged, black '89 S4 and is the subject of this "appetite teaser" article. Tom's shark werks is currently pushing the envelope with his fourth 928, a '91 GT, that will be utilizing a twin screw supercharger design that's in development by the renowned folks at 928 Specialists.

GREAT STARTING PLATFORM

Porsche developed a well balanced, very drivable car with a very solid structure. Not only do 928s possess great handling and outstanding speed, but they are relatively easy to drive fast due to the bi-polar inertia created by the engine and transmission located at opposite ends of

Top: A-pillar mounted gauges are a hint of the power harbored within the black shark.

"Look at all the V-8 luxury performance coupes available today. With this in mind it is easy to say that the 928 was ahead of its time," explains Tom.

Below: Not your normal 928 engine bay. Notice the Vortex supercharger at the engine's front and the modified air intake toward its rear.

the car. 928s also provide a high level of comfort. And of course, let's not forget the 928's exotic styling. When it was released in the late 1970's the car looked like it came from another world. Even today 928s are mistaken for new cars some 12 years after the last car was built.

When new, the Porsche 928 offered drivers a revolutionary package of attributes, such as speed, luxury, futuristic styling, an advanced Weissach rear axle that has been called the predecessor to modern four-wheel steering, and the ability to transport 4 passengers in a truly sporting platform. In addition, 928s presented a leap forward in crash safety and exhaust emissions. The 928's blending of these attributes started a new automotive product category, the luxury GT coupe. "Look at all the V-8 powered luxury performance coupes available today. With all this in mind it is easy to say that the 928 was ahead of its time," explains Tom.

Tom took a look at his black 1989 S4 and saw in his mind's eye a meaner shark aggressively navigating the roads of rural Virginia, thus endangering the pride of any car's driver. To make this land predator a reality he needed more bite and the wailing of a supercharger fit the bill.

In 2002, Tom started to think about supercharging because people were starting to do it on 928s on a more regular basis. There were some basic kits available, and after some research he decided to piece together components himself. Tom also read the book 'Supercharged!' by Corky Bell, which he found to be a good information source. It took him about a year and a half to really figure everything out. Because he decided to purchase the components separately it took him another six months before he had everything he needed.

Tom went ahead and rebuilt the engine at the time of the supercharger installation, which he recommends to anybody thinking of supercharging a used car. His car had about 67,000 miles on it and did not need refurbishing, but considered the supercharger's extra stress to the engine justified thinking ahead.

SUPERCHARGING AND FUEL

When Tom began his endeavor the roots type superchargers for 928s were

"With proper fuel management modifications one can increase fuel pressure while essentially fooling the computer even though it is being sent stock signals," states Tom.

Sporting 996 Turbo wheels, 8x18 with 225/40 ZR 18 tires in front and 11x18 with 295/30 ZR 18 out back, this 928 is all business.

still under development so he chose the Vortech V-1 S-Trim centrifugal model that is air-to-water intercooled. "I used a Vortech Maxflo Racing bypass valve as a wastegate to bleed off boost. I added a cold air intake to further reduce the airflow's temperature. The exhaust system was upgraded with headers and a more open exhaust," recalls Tom.

Tom through his tedious research and dialogues with other owners and vendors identified a way to basically fool the stock computer unit. He did this through the use of a Vortech Super FMU to boost fuel pressure to deliver the proper amount of fuel. The device is very sensitive and increases the fuel pressure dependent on the amount of boost being generated by the supercharger. The Super FMU is different from Vortech's other FMU products because of its extra level of adjustment. It has a vacuum input as well as boost input and uses interchangeable discs that allow it to change its rate of raise. The Vortech Super FMU is essentially a fuel pressure and boast regulator in one unit. So when the manifold pressure becomes greater it increases the fuel pressure to match the increase. Tom then changed the injectors out to units that can cope with a little higher poundage.

According to Tom, "By doing these fuel management modifications one can essentially fool the computer while not blowing up your engine. The computer still is being sent their stock signals, but the actual fuel pressure is greater". The only ignition system upgrades were the plugs and wires. No modifications were made to the stock automatic transmission.

IMPROVED SHARK BREATHING

Due to the supercharger eliminating the stock air intake he had to figure out a way of getting air into the engine. Usually in most cars, people just take air into the supercharger that was already behind the radiator. Tom didn't think this was the optimal approach so he fabricated a system that brought the air from the front fender well, along the back side of the radiator, and into the supercharger. Tom developed the unit using 3 inch diameter aluminum piping and silicone hosing.

The exhaust upgrades were installed prior to the supercharger. This shark has

MSDS headers with 1 1/3 inch primers feeding into a 3 inch pipe. The headers feed into a 3 inch Y-pipe that leads into a non-stock single cat converter. From there he is using a 3 inch open exhaust pipe through a universal Borla exhaust muffler. "Most people don't think it sounds like a Porsche, but rather more like a mean American Muscle Car at lower RPMs and under light throttle. It sounds like a visceral screeching eagle at high throttle loads and higher RPMs." Tom admits. All of this sound is accompanied by the hissing and turbine jet-like swirling of a centrifugal supercharger. At high RPM and under full throttle the engine sounds like it's about to launch into space. This shark announces its kill bite.

ENHANCING SHARK HANDLING

Tom installed wider wheels and tires. From a 996 Twin Turbo, he employed that car's 8 x 18 wheels and 225/40 ZR 18 Continental Contisport 2 tires on the front. Out back the shark sports the 996 Twin Turbo's 11 x 18 wheels with 295/ 30 ZR 18 tires. Tom cleverly created room for these giant rear wheels & tires by heating up the fender's edges and using a bakery roller to flare them. Once cooled the resulting body work looks quite good. He retained the stock Boge S4 shocks and coil springs but employed 928 Specialist front and rear Sway Bars, which are 28MM and 22MM and are adjustable. The brakes have been upgraded to 928 GTS calipers and rotors. The strut tower brace also does a marvelous job of maintaining front suspension alignments. The only real issue is not spinning the tires under hard acceleration. In a corner, when you reach apex you have to feather the throttle a bit more due to the instant torque of the supercharger, but the 928's neutral handling was retained. The black shark prefers to do a four wheel drift in the turns if it is pushed past its tire's adhesion limits. Tom manages this situation though throttle inputs. Tom adds, "The resulting car takes a bit to get to know, but once you have learned the importance of throttle steering the car is a blast to drive."

Supercharging a 928 really reveals how well a car Porsche built. With all this extra power the car's frame is extremely solid. The only modifications made to the frame were an upgraded engine cross brace and a Devek Strut Brace in the front. When the torque applies forcefully at 3000 RPM the frame does not flex at all. Even in high G load curves when the engine's power is released the frame remains rigid. What other car design originating in the 1970's and has had a ton of extra torque applied to it can do this? None comes to mind.

Tom tells us a story about the making of the second Cannonball Run movie that's relative. "As you may remember from the movie, a 928 was crushed by a heavy monster truck. When they filmed the movie they attempted to crush one several times with no success. The film makers had to cut the car's A-pillars in advance in order for the monster truck to crush it. Now that's a solid frame," Tom shares with pride.

WHEN THE SHARK MEETS THE ROAD

The result of Tom's shark enhancements is an additional 200 HP to the rear wheels. Tom believes he can attain more with additional ignition tuning. Like most centrifugal superchargers, the power comes on gradually until you reach about 3000 RPM. At this point the power and torque really comes on quite hard. When the supercharger and pulley combinations were selected the gearing is such to allow a maximum boost of 10 PSI at 6000 RPM. The car redlines at around 6200 to 6300 RPM, so it is designed to be more of a top end car, staying true to the 928s intentional design. At around 4500 RPM the shark generates about 6.5 PSI of pressure into the manifold, which allows for a good amount of mid-range torque. Despite the focus on top end bite this car accomplishes 0-60 MPH acceleration in low 4 second range. How is that for a hard attack bite?

TOM ON SHARK BUILDING

"The biggest challenge is to make sure you don't blow up the engine," Tom warns, "That is why reading the books and doing your research is so important. You really need to make sure that your fuel delivery system is right. It is not rocket science to figure out how to get more air into an engine, but to do it right involves some knowledge of fuel systems." He also highly recommends applying locktite to the crank bolts, "If this is not done the bolts will twist loose while lefting the throttle after hard boost." With all these modifications Tom still prefers to do all the maintenance work himself. Tom found talking to "people in the know" makes all the difference in tackling such a project. Such people include both the ones who have already made the modification and to the ones who make the kits. He also stays in dialogue with people through online forums such as Rennlist and other members of the 928 Owners Club. ***AA***

1970 911T with a Short-Stroke 3.2

The 30 Year Plus Evolution of a Tiger's 911

By: Brian Nixon
Photos By: John Squire

Rick Garlock has been pursuing a tuning vision since America's bicentennial. In a 30-plus year journey that highlights the spirit of Porsche ownership and stewardship, he's taken a 1970 911T and stepped up its performance while maintaining its original outward characteristics. This multi-year work-in-progress today represents a signature exercise in execution and clarity.

It's there, under the gray cover in his garage, forming a distinctive shape that even veiled appears poised as if ready to spring. Or run. Anything but sit still.

When Garlock carefully pulls up the cover to reveal his 1970 conda green 911T in all of its glory, you can't help but be slightly stunned. It takes a moment to process what your eyes are telling you that you're seeing.

"This 911 is a light, lithe thoroughbred that looks factory fresh -- chomping at the bit for its shakedown cruise."

The right words to describe the car don't come easily. "Wow!" seems trite. "Nice!" is an understatement. Maybe this is more a case of "Porsche: Expletives Are Expected."

This is a light, lithe thoroughbred that looks factory fresh -- chomping at the bit for its famous off-the-assembly line Zuffenhausen shakedown cruise.

Let's go for a ride.

"There's 85," says Garlock, who's calmly and capably piloting the 911T along a tree-lined back-country road near his home in Glen Burnie, Md., on a clear-at-the-moment brisk January morning.

Several things strike you at once during this all-too-brief performance foray in which Autobahn Ambition has been graciously invited to experience.

First, the car's vintage -- but slightly modified -- 901 transmission is in third gear and there's still room for the engine to run before considering a shift up to fourth. We're building speed … quickly.

Second, this 911T is tight. Close your eyes and enjoy the sensory feedback of a vintage longhood Porsche that has been tastefully and effectively modified with performance in mind. A slight whiff of leather and oil, a touch of distinctive dry heat on a cool day to keep things warm in the cockpit and a ride quality that is stiff -- but in no way jarring -- all combine to signal the type of car you're riding in.

Third, everything about this car feels right. The handling, performance, look and sound all come together in a well-executed package. Getting to this point has been a journey for Garlock -- one that started back in the year of America's bi-centennial.

This is a story as much about Garlock's Porsche tuning philosophy as it is about exactly what he has done to put more power to the road with his T. And there are instructive lessons here no matter what breed of high-performance steed you might prefer.

FIRST TUNING STEPS

Garlock bought his Porsche just after graduating from high school. At the time, the car had 40,000 miles on the odometer. Its history was that of a European delivery

Garlock's 911 is a rarer tan version compared to the more common black.

"With performance car tuning, there are often layers of implications that have to considered and balanced. In some cases, sacrifices have to be made."

to an American serviceman who eventually had the car shipped stateside.

In the beginning, the car was a stock 911T. The car would gradually change. It would gain the 911S appearance group, including wider deco trim on the bumpers, numerical analog gauges and correct-year Fuchs magnesium alloy wheels. The car would accompany Garlock through moves to Florida, New Mexico, California, Louisiana and, eventually, Maryland. Each part of the car's evolution to where it is today involved carefully calculated decisions.

That's part of Garlock's take on tuning: Think carefully and think ahead. With performance car tuning, there are often layers of implications that have to be considered and balanced. In some cases, sacrifices have to be made. Is the final destination where you really want to go?

Garlock's first venture into performance tuning and his T came in Florida under the mechanical skills of Frank Eibell, a veteran Porsche hand and proprietor of Eibell Performance Inc. in Clearwater, on the state's Suncoast. It was there that he first learned about Porsche sport mufflers, including subsequently experimenting with an Abarth four-outlet sport muffler. While this set up did allow the engine to breathe easier, the resonance noise created a feel that Garlock describes as being in a small airplane. Chalk this up as a lesson learned.

As part of a move to New Mexico, Garlock had the stock Webber carburetors rebuilt, partly in response to the change in operating altitudes.

GETTING SERIOUS

Later, in 1984, things got more serious. "That was when I started really doing things to improve the car," says Garlock. The car was lowered, and he began to experiment with stiffening the ride and adding swaybars.

By 1985, the original 2.2T engine had gone 235,000 miles -- certainly an enviable record. At this time, the engine was rebuilt to 2.2 911S specifications, resulting in higher compression and greater performance. This configuration took the T into the '90s.

In 1998, Garlock -- now living in Maryland -- bought a basket-case 3.0L 911SC aluminum engine case with large-port heads and assorted parts. This is when the performance tuning took a more serious turn.

Along with the SC engine parts, Garlock found a set of 98mm Mahle pistons and cylinders from Stoddard Imported Cars in Willoughby, Ohio. This P&C set, combined with a stock SC case and crankshaft, produces a 3.2-liter displacement configuration through the greater-than-stock SC cylinder bore diameter of 95mm. This is a different approach from what Porsche did in its ongoing development from the stock 3.0 SC engine to the later 3.2 911 Carrera engine. In Porsche's case, the displacement increase came about through stroking rather than increasing the cylinder bore diameter.

To put it differently, Garlock's engine was built to what has become known as a short-stroke 3.2. And the person behind the completion of the engine build was Charlie Murphy, owner of Intersport Performance in McLean, Va.

Murphy is another veteran hand when it comes to Porsche maintenance and repair. Do you sense a trend here with Garlock's reliance on experienced mechanics? As he admits, "They know how I care for the car."

This is high praise indeed. Garlock admits that he's particular about just who should be allowed to wrench on his car.

The engine features a high-lift cam to extract the best range of power from its PMO 46 MM carburetors. Compression is 10.5:1 using Mahle high-domed, Nikasil-coated pistons. The 3.2 flat-6 produces nearly 300 hp at the fly.

"Going from the previous 2.2 S-spec engine to the short-stroke 3.2 is a big leap in power in a lightweight 911 chassis."

Intersport's Murphy is one. "He made me feel that could take that car and drop it off," Garlock says. "That's very unusual for me. You can do that with these guys."

WITH GREAT POWER …

Going from the previous 2.2 S-spec engine to the 3.2 is a big leap in power in a lightweight 911 chassis. This is when the implications have to be weighed and decisions made.

The engine itself features high-lift cams, partly to extract the best range of power from the PMO 46mm carburetors (tuned by Intersport). Compression is 10.5:1 from the Mahle high-dome Nikasil-coated pistons, which requires higher-octane premium fuel. Igniting the mixture are Bosch W8DC plugs (gapped at .045 of an inch) energized through an MSD Ignition capacitive discharge system, a Jacobs coil and an MSD programmable timing computer.

With programmable timing, the engine's distributor acts only to spark when told to by the MSD timing unit. The original distributor vacuum and centrifugal timing advance equipment are not used. Instead, the advance curve can be customized depending on the user and application.

Taken together, Garlock's 3.2 engine produces something just south of 300 horsepower at the flywheel. As we've mentioned, with great power comes great responsibility (sorry, Spidey). "With a bigger engine, you get modifications like it or not," says Garlock.

Case in point: Murphy, along with supervising the build of the 3.2 engine, also rebuilt the T's Type 901 later-style magnesium-cased five-speed transmission. Reflecting the need to match up with the greater horsepower and torque of the bigger engine, taller gears were used in the refreshed transmission.

A quick word about the Type 901 transmission: It features a racing-style shift pattern. Reverse and first are to the top and bottom left, respectively. Second and third are on the same plane in the middle, with fourth and fifth likewise on the far right. On the later Type 915 911 transmission, first and second are on the left, third and fourth in the middle, and fifth and reverse on the right.

Staying True to a Vision

One thing you won't see when you look at Rick Garlock's 1970 Porsche 911T are visual clues about what lies beneath this coupe's striking conda green exterior.

Flared or rolled fenders allowing wider-than-stock tires? Nope. What about aerodynamic aids, such as a duck or whale tail? Forget about it.

There are some things that, even when hot rodding and modding, just shouldn't be done. At least that's Garlock's view as he's taken his car from 2.2-liter stock status to one that's abundantly powered, agile and responsive with a 3.2 at the rear.

"I want the car to look the way it's supposed to look," he says. Evidence of this view is apparent when you consider how well the car does in the various Porsche Club of America chapters' wash-and-shine events. Not to mention the attention it gets at national Porsche Parades and other vintage car gatherings. What Garlock set out to do was to create his vision of the ultimate 911S -- and without distracting outward accoutrements.

He also points out that, in general, 911s left Stuttgart in pretty darn good road-going trim. That's a polite way of saying be careful with modifying one.

"It's really hard to improve anything [Porsche's engineers] did to those cars," he says. When modifying, "Ask yourself what you are going to sacrifice."

In the case of Garlock's 911T, the car in its stock form is tossable and trackable, with the driver getting plenty of warning feedback (if one is skilled enough to listen) at the limits.

However -- and this is an important tuning point -- Garlock's modified T will take a driver deep into unknown territory where trouble can lurk for the unwary. "When it goes, it's really going to go in a violent way," he says.

And that's a polite way of saying know your limits.

"The custom-made sport muffler with four outlets looks distinctive and the sound is exquisite without being overly loud."

Garlock says the 901 isn't known for strength out of the hole in first. Use it to get rolling, ease in to second and start bringing in the power. "You never get on it in first gear," he says. You've been warned now.

To stiffen the chassis, larger SC-type torsion bars are used front and back. Adjustable front and rear sway bars, more precise 930 Turbo-style tie rods and Koni Red adjustable shocks were installed. Brakes were also upgraded to provide additional stopping power.

A larger displacement engine also has bigger cooling needs. To handle that load, a finned Carrera radiator-style oil cooler was mounted in the right front fender. To date, the T has seen both serious over-the-road and track use, and temps have always been in a very comfortable range.

"You have to have all of the modifications work together in a nice way," says Garlock. Oh, and speaking of nice, remember those early experiments with sport mufflers? Garlock now uses a custom-made sport muffler with four outlets divided across the center rear of the car. The look is distinctive and the sound is exquisite without being overly loud.

A Tilton Engineering high-torque starter connected to dual WestCo Battery sealed 12-volt units delivering 600 cranking amps gets the high-compression engine up and running. The two sealed batteries reside in their original right and left front compartments. The twin-battery setup was an important feature in keeping early 911s properly balanced.

Power is transferred from the engine to the transmission via a lightweight flywheel manufactured by Fidanza Engineering Corp. Garlock recently installed a Weltmeister short shifter kit, which reduces the shift throws through the pattern. This changes shifting from arm to wrist movements on the part of the driver.

In between phone calls on what must have been a busy shop day, Intersport's Murphy describes the T "as a great little car. It really goes well." You'd think with that bit of understatement that Murphy is no stranger to being under the boot with a spanner turning fasteners on a British sports car.

More details: Murphy says correctly jetting the PMO carburetors was challeng-

ing at times, but at this point "the engine runs really well" with scads of power. And he's not surprised by the dyno figures the car produces.

THERE AND BACK AGAIN

When Garlock became the second owner of the conda green 911T, he admits -- heresy warning here -- that the color didn't thrill him at the time, and that he has always preferred -- and advises others -- to buy a car on condition rather than an appearance item.

History, of course, has shown that when Zuffenhausen began to let fly with a creative palette of colors in the late '60s and early '70s -- the conda greens, signal yellows, Gulf blues, leaf greens, and more -- a generation of performance-car enthusiasts were captivated. Today, a unique, vintage color on display at a show is virtually guaranteed to draw people offering admiring comments. The striking color one of the car's unique qualities.

Garlock says he's grown to love the color of his 911, as evidenced by the two high-quality re-sprays the car has had under his stewardship. The most recent one was part of an intensive windows-out effort during which the white headliner, dash and rubber seals were replaced. By the way, the interior of Garlock's 911 is a rarer tan version compared to the much more common black basket weave.

The final package is about 100 pounds heavier than a stock 911T and provides a speed of 150 mph at 5,800 RPMs.

"What I tried to create was a nice road-going car that could compete with newer cars," Garlock says. He figures the car spends 90 percent of its time on the road with the remaining 10 percent on tracks, including Summit Point, Virginia International Raceway, Pocono, Watkins Glen and other East Coast venues. As Garlock notes, "Half of the fun is driving the car to the track."

And across country. Last year, Garlock drove the 911 to the Porsche Club of America's Parade (the group's annual convention) in Portland, Ore. The route from Baltimore to Portland took Garlock through the Midwest, on to Wyoming, Utah, Nevada and California, then up the West Coast to complete the outbound journey.

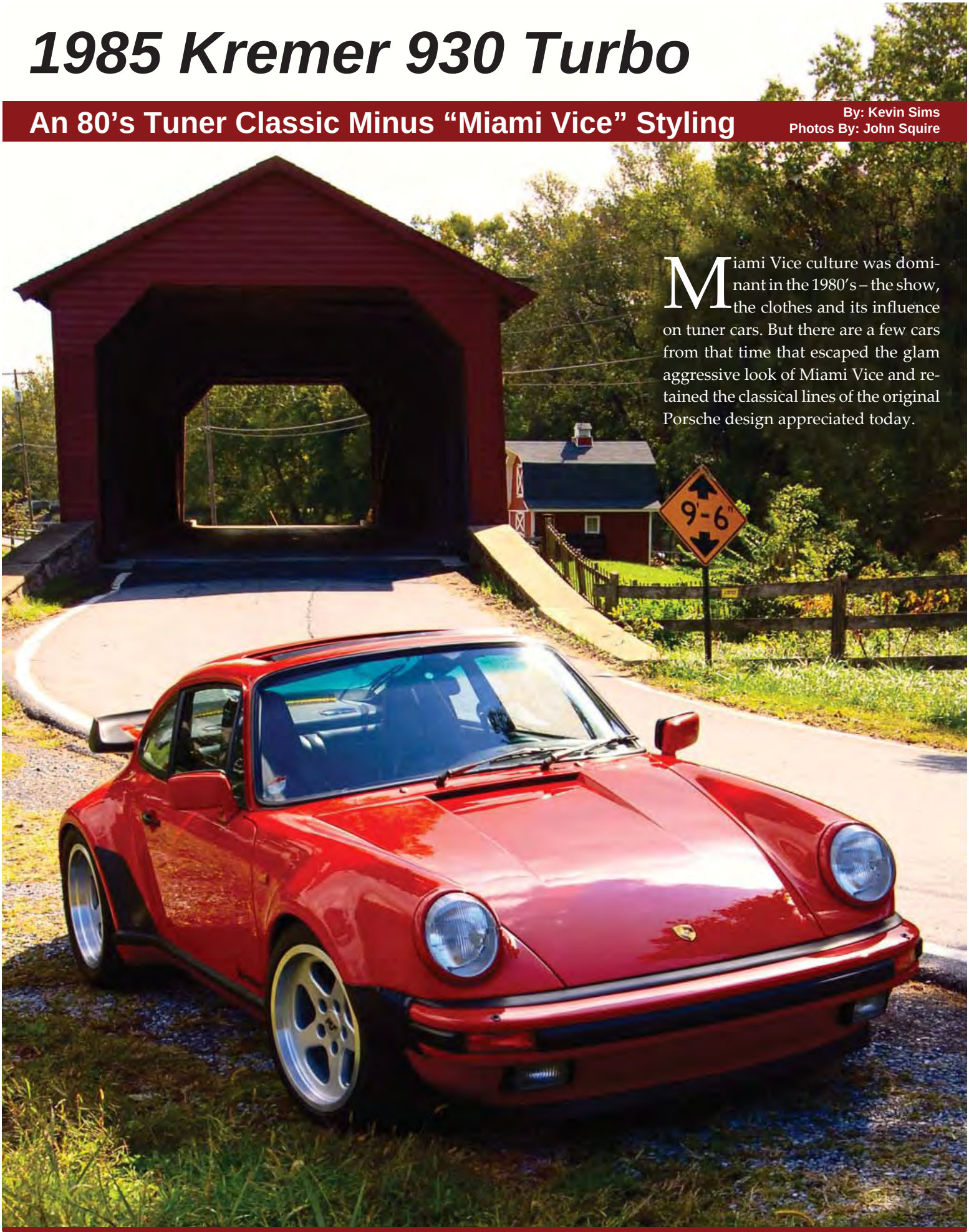
The back nine ambled through Montana, Utah, Colorado, New Mexico and Texas on a gradual course towards the east. The round-trip journey totaled 8,800 miles.

In all, the car has covered 335,000 miles. There will be more. "I never get tired of driving that car," says Garlock. ***AA***

1985 Kremer 930 Turbo

An 80's Tuner Classic Minus "Miami Vice" Styling

By: Kevin Sims
Photos By: John Squire



Miami Vice culture was dominant in the 1980's – the show, the clothes and its influence on tuner cars. But there are a few cars from that time that escaped the glam aggressive look of Miami Vice and retained the classical lines of the original Porsche design appreciated today.

"Only an accomplished Porschephile would recognize that this isn't a Kramer knock-off, but a genuine article by Kremer."

Mike Smalley is a proud owner of such a relic. And when you walk into his office you understand why. The shelves in his home office are filled with every Porsche book that has been published. He has spent vast amounts of time educating himself about the focus of his automotive affection. Smalley's enthusiasm for Porsche is infectious. Whether he is driving one of his two classic Kremer Porsches, displaying his 993 Cab that's supercharged with the help of TPC Racing at a concours, or clicking off some quick lap times in his race prepared 951, Mike personifies the Porsche tuning customer. He wants to extract the most exuberance from Porsche ownership as possible and loves to share the "good times" with other certifiable Porsche crazies.

So, when this rare 1985 Kremer 930 Turbo became available for sale, Mike sprang into action. Only an accomplished Porschephile would recognize that this isn't a Kramer knock-off, but a genuine article by Kremer where the body was kept to factory stock and the mechanics were modified. Gratefully, Mike did, and has kept the significance of this rare 1980's tuner car pure. We are pleased to have a conversation with Mike about his introverted Kremer gem:

>> How did Kremer's philosophy of tuning a Porsche differ from other 80's companies?

Mike Smalley: In my opinion, they took a more radical approach for the time. Kremer Porsches usually have a more unique look as compared to other tuner Porsches at the time. Working with Design Plastics allowed for some very radical exterior designs. Their engine, drivetrain & suspension modifications were very well thought out and effective. Since they were the creator of the K3 935, the only production based 911 to win the 24 hrs of Le Mans, I feel this gave Kremer Porsches an advantage.

>> What is unique about this particular car? How is the car historically significant?

My red 930 is a Euro 1985, full leather coupe that received a fairly mild Kremer conversion. The body was left alone. This attracted me to the car as I did not have an original bodied example of the 930 at the

time I purchased it. This car's ride height and suspension modifications provide an excellent driving experience. The engine modifications add reliable additional horsepower without changing the rear wing, or creating additional turbo lag. In fact, turbo lag is greatly reduced. The significance to me is that it was an originally built car by Kremer for a customer, made to order. It represents how Kremer can make a 911 Turbo better without necessarily changing the look of the car. Conversations between the previous owner of the car and Erwin Kremer via email state there were very few non slant nose cars done by Kremer Racing. Additionally, Erwin Kremer stated the total production of modified cars from 1980-1985 was between 50-56 units.

>> In your opinion how does this car embody the Kremer spirit?

The modifications are done with a single goal in mind, thus they work together as a package to yield a superior driving experience. After driving the car it is clear a large amount of thought went into the modification package. Everything works as a system and has the quality feel of a production car as opposed to a tuner car. Kremer sorted the car out from the start.

>> What modifications did Kremer make to the car? What are the power and torque gains from Kremer's efforts?

The ride height was lowered, front and rear sway bar sizes increased. The turbo was upgraded to a K-27, the intercooler was replaced by a much larger full width Kremer produced unit, and the Camshafts were upgraded to the stage 1 units. Power was improved by Kremer's stage 2 modification level package, which adds about 90 hp and an "unquoted" amount of torque. The stage 2 differed from their stage 1 package (75 hp gain) by having a 3 in. stainless steel exhaust. More importantly, turbo lag in the Stage 2 was more greatly reduced. Boost begins to build at around 2,500 rpm. Not bad for an 80's turbo system. The Stage 2 package's torque band was widened significantly.

It must be mentioned that this car was in stock at the Kremer dealership when the customer came to place an order. It

Top: Kremer's massive intercooler assissts in producing much of the additional 90 hp. Bottom: Stylish 17inch Ruf Speedline wheels were added after importation to the US.

was a color that looks like Gold or a variation, but the customer wanted a Guards Red car. The car was disassembled and painted at the Kremer Dealership in Europe. The paint job was meticulous. The car still sports the original service sticker on the right side of the windshield from the Kremer Dealership, and has a decal on the right rear quarter window alluding to the 10 years Kremer had won the Porsche Cup. A dash badge is in place on the glove box, and a HK electronic boost

Conversations with Erwin Kremer state there were very few non-slant nose cars done by Kremer Racing. The total production of modified cars from 1980-1985 was between 50-56 units.

gauge resides in the position the clock once occupied. The face of the gauge is labeled "Porsche Kremer Racing".

Modifications added in the US include a high flow intake from ImagineAuto, and 17 in Ruf Speedline wheels and Electonic Boost Control.

>> What is your car's history?

The owner of the car directly previous to me is a Porsche Enthusiast from New Jersey named Doug Harris. Doug purchased the car from a collector in Glen Cove NY. It was reported in a conversation between Mr. Harris and the then owner that the car was imported by a Stock Broker in NY, and was sold to the owner of the Porsche repair shop in NY where the original owner had the car serviced. The car was then purchased by the collector who sold it to Mr. Harris. Import documents in my possession show the car being imported on May 20, 1986 at JFK International Airport. As a side note, this date happens to be Mr. Harris's birthday, and only one day after my birthday.

>> What grabbed your attention about this car?

Before buying the car, Doug contacted me as I have another Kremer car, to inquire about how to authenticate the car, and to see what the value of a Kremer modified car might be. We discussed the car and he decided to purchase it. After adding the Ruf Speedlines, Electronic Boost Control, the High Flow Intake, and having the car thoroughly freshened, Doug enjoyed the car and the condition it was in. After searching for a car for a while, and after owning several other early 911's, Doug was impressed by the cars tightness and overall stance. His mechanic also noted that the car was a lofty example.

At the 50th Annual Porsche Parade at Hershey, where I had entered 2 of my cars in the Concours de Elegance, Doug approached me and introduced himself. We chatted in front of my Kremer K2, and hit it off. We met at Summit Point, WV for a 3 day Porsche event. For the track event he trailered down his Kremer. The moment he fired it up and backed it out of the trailer, I knew I would someday own that car. Incidentally, the car took first place in class.

>> What race tracks have you had the car out on? How does the car perform on these tracks?

I have driven it on Parade laps on Summit Point, and have had the chance to drive it fairly hard. At the high boost setting (1.0

bar), it was capable of staying close to a 996 Twin Turbo in acceleration, but not in handling of course. It did, however, feel very solid, and performed well at speed. Braking was excellent, and aside from the normal understeer, it was pretty neutral. Of course, I was not driving at the limits of the car.

>> What should an unsuspecting driver know about the car's handling characteristics?

All early Turbo's should be respected for their tail happy tendencies but this car has proved to be quite stable. The ride height is quite low, so care should be taken in regards to this.

>> How do other Porsche enthusiasts react to the car when you take it to PCA events?

The car gets its share of attention, mostly because of its condition and its stance. The wide tires, low ride height, and Ruf wheels make the car look a bit menacing. Some people say the car looks aggressive.

>> Does the average Porsche nut value the car's Kremer mystique? Why?

If someone is a fan of tuned cars like Ruf, Gemballa, Kremer, etc, they seem to be more interested in what has been done to the car. Most everyone with a 930 wants the car to be faster and handle better than stock. After all, we are talking about a car that is 22 years old. Kremer has achieved these goals, and most enthusiasts appreciate how they did it. Most hard core Porsche fans appreciate the fact that this particular car still has the original 930 body.

>> What has been your most beloved time in the car?

This car is my most recent purchase, so there is still a lot more to experience with it. I must say every time I drive it, it seems to get better. The feel of this car, the way it handles road imperfections and the forgiving but sporty ride really impress me. Anytime you are on an uphill grade and you roll onto the power, you feel great.

>> In your mind, how has Porsche tuning changed since the time of your Kremer?

It has changed as much as the cars themselves have changed. It has gotten more complex, and the benefits have gotten larger. Technology has provided Porsche tuners with almost limitless ways to make Porsche's better. I have a great deal of respect for the true early pioneers, like the Kremer Brothers and Alouis Ruf, that have given Porsche owners a way to personalize and improve their cars.

>> Are parts for Kremer Porsche still available? Where does one go to find them?

Yes, they are still available. In a letter to Doug Harris by Erwin Kremer prior to his passing, he invited Doug to contact him if he had any needs. It appears that Kremer Racing was still alive and well at that time, and I assume it still is.

>> What Kremer cars would you be interested in purchasing in the future?

I would like to own an original 935K3 someday. Once you have experienced track driving, you tend to prioritize race cars. I looked at the Mario Andretti car that recently came up for sale but decided to pass. Timing is everything. I will keep my eyes open and see what happens. ***AA***

The Kremer 930 dons a number of factory placed stickers celebrating the company's racing heritage and the car's exclusivity.

Special Product Release

Coding Old Porsches New Tricks

By: Kevin Sims

Owners modifying their 80's vintage Porsche have always been limited by the fuel injection computer's chip programming. An owner will reach a certain level of modification and then be required to purchase a new chip to prepare the car for the next level. Multiple chip purchases were a requirement to find the optimum fuel & ignition mapping. As a result, a lot of money was spent and time wasted chasing the "right" chip. Modern domestic or Japanese cars owners have enjoyed Real-Time "tuning" for years, but we've always been stuck in the "buy another chip" quagmire. Well to quote Bob Dylan, "times they are a changin'."

Russell Berry, owner of MAXhp-kit, decided the time was right to remedy the "Real Time" Porsche tuning discrepancy. As an owner of a 951, he first started developing his own brand of performance chips, then realized that "Real Time" tuning could be a reality for all 80's Porsche cars. He locked himself away for 4 months and programmed the impossible, the Max-Tune & Maxtronic products. For the first time Porsche owners do not have to look at modern domestic & Japanese tuning with envy. We are delighted to strike up a conversation with Russell Berry about his revolutionary products.

>> What does the MaxTune & Maxtronic products offer a Porsche owner of an 80's vintage car?

Russell Berry: The Maxtronic and Max-Tune tuning system offers the greatest amount of tunability you can get for these older cars short of a stand alone engine management system. It utilizes the factory computers, factory wiring, and can therefore be used with any configuration of modifications the user chooses.

The Maxtronic system is for anyone who has ever changed a chip, or ever intends to. You open up the DME computer one more time, and then never have to do it again. Some people are buying it with stock maps just for the security features of the no-start and valet maps.

Maxtronic consists of the Ostrich emulator designed and built by Craig Moates of Moates.net, an 8 position digital switch, and switch interface. The Maxtronic system will work with ANY car that uses a single 24 or 28 pin EPROM for it's fuel/ignition maps. Up to 7 user defineable maps may be loaded into the Maxtronic in positions 0-7. Position 0 is a no-start map for security purposes. It can be engaged with a button combination on the switch, or simply by removing the switch from its connector. The emulator has a ribbon cable which plugs into the car's ECU where the EPROM used to be, the unit is mounted near the ECU, and there is a 6' USB cable to program it and load images, and the switch is on another 6' cable for remote mounting.

I currently have chip products for the 944 series Porsche cars, including 944 NA/Turbo/TurboS and 944S/944S2. When someone orders the system with my chip images, they also get a valet map loaded into position 7. The valet map is simply a map similar to the performance map per the car's configuration, with more relaxed timing and a 2500 RPM rev limiter, thus a true valet mode. The Ostrich has a unique feature which allows you to change the contents of all or part of a chip image DURING emulation, which allows for live tuning. To accomplish this, I wrote MaxTune.

MaxTune is aimed at the person who plans to continue to do upgrades, or the guy who just likes to tweak his car to get the most out of it. The Pro version is aimed at developers, tuners, and the like.

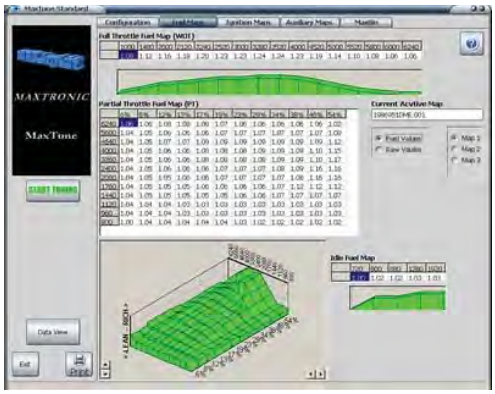
MaxTune gives you full access to all fuel and timing maps, in real time. The car can be tuned on a dyno, or with a co-pilot for real world tuning environments. With this tuning ability, Porsche owners are afforded the tuning ability of a stand alone system, at a fraction of the cost, and while using their stock Bosch Motronic computer. I will be adding chip/image products to our product line to include 968, and all 911 variants this summer. As specifications are developed for these cars, they will be added to the MaxTune spec. Later on, other cars such as BMW, Volvo, Audi, and VW will be added as well. MaxTune is designed to be a tuning 'shell' with all car specific information residing in a single specification file, allowing the greatest flexibility and versatility.

>> What inspired you to create MaxTune and Maxtronic products?

I have to say my inspiration is simply the desire to provide the Porsche community with the most comprehensive and affordable tuning tools available. I wanted to bring our aging market into a level of development of newer markets, and to give the participants more choices. I do not lock users into using my chip images; they are free to use the Maxtronic system and MaxTune with any stock or other aftermarket products.

I began as a member of the Porsche community, a car owner, not a vendor. I designed the 951MAX chip originally for my own car, without any intent of marketing the final product. Local Porsche owners convinced me I should market my chips. Things progressed quite quickly after that. The program I had been using for my chip development I found to be flawed, it was corrupting my chip images arbitrarily. I found this unacceptable.

From the beginning I wanted to implement a chip emulator into the system, just to make it easier for tuning, switch between chip images instead of pulling a 20 year old computer apart a dozen times to keep changing chips to try new tunes. Rather than design & build my own emulator, I searched the market for existing products and found Moates.net. This emulator already had a well established market, and a proven performance record. So I decided to take this path. From inception to completion, it took me 4 months to write MaxTune.



The MaxTune and Maxtronic products allow owners of 80's vintage Porsches to program their own fuel & ignition mapping, thus not requiring additional chip purchases when further mods are performed.

>> How are MaxTune and Maxtronic products better than traditional pre-programmed computer chips?
The common theme in this market is upgrades. Everyone modifies their cars and continues to add modifications as time goes on. Traditionally this meant buying a new chip with every modification, which is a rather expensive path. Quite simply, the Maxtronic system and MaxTune allows you to adjust your own tune for upgrades such as larger injectors, bigger turbos, higher flowing exhaust, etc. I will provide tuning tips, but I am also leaving it up the community to work together, and interact in ways they never have been able to in the past. A motivating goal of mine in developing this system is to foster community camaraderie.

>> How do you envision your MaxTune and Maxtronic products are gong to change the Porsche tuning market for 80's vintage cars?
The biggest changes will be in the user's understanding of their own cars, and tuning practices in general. These products will open up more sharing to the real tuners, and cuts down the hype and misinformation which has engulfed this market so deeply in the past. The MaxTune & Maxtronic products are intended to create a free flow of information that will be useful to the Porsche tuning community.

>> How will your MaxTune and Maxtronic products benefit Track, Street, Long-distance & Autocross drivers?
Track days typically keep the drivers guessing about the car's performance as the day progresses, running strong and lean in the morning, and richer and sluggish later in the day as the ambient temperature effects the engine performance. With the Maxtronic system you can have multiple tunes loaded, and change during the course of the day with the flip of a switch, allowing the driver to concentrate on driving, with consistent performance through out the day. This holds true for street use as well.

>> In General, what are the installation procedures for your MaxTune and Maxtronic products?
Installing the Maxtronic system is as easy as installing a chip. With the base Maxtronic systems comes a program I wrote called MaxBin. This program is what you use to interface with the Maxtronic via a laptop USB connection to determine which tune files or chip images are loaded to a corresponding switch position. MaxBin is intuitive and easy to use, it will not allow you to perform steps out of order, and it won't allow you to load the wrong type of file into the Maxtronic. I've also written very comprehensive help documentation which is distributed with the program to make the experience even easier.

>> Are your MaxTune and Maxtronic products only for mechanically inclined, DIY Porsche owners? If not, how so?
The Maxtronic gives anyone who modifies their car in any way an advantage. You do not have to use MaxTune, you can purchase tune images, and re-tunes from MAXhpkit and let us do the tuning. MaxTune is designed not only for the experienced tuner, but also the novice who wants to learn how to tune their car. Again, I will provide tuning tips and tutorials, but novice and expert alike must keep in mind that you have full control over your car's engine with these products, you can easily do a great deal of damage. I have built in some protection against this, but it is still a very powerful tool and with this power comes many risks. My advice is simply, if you are unsure what to do, don't do it. Ask first.

>> What is included with the purchase of your MaxTune and Maxtronic products? And what technical support is offered?
The Maxtronic system includes the emulator, switch interface, and the switch. 6' remote switch cable, and 6' USB cable, and of course the MaxBin program to manipulate your chip images in the Maxtronic. Aside from the comprehensive documentation provided, I also host a support forum for all of our products at http://forums.maxhpkit.com, and I can personally be contacted by clients via email, or phone most any time. Support is provided free of charge as needed. I have had to walk people through opening up their DME computers and installing chips, I've also had hours of conversation on the phone

with people about what they 'want' to do, not even necessarily customers.

When a Maxtronic unit is ordered I have an automated system in place which sends people an email with their product ID, and instructs them to register their product. Registering the Maxtronic gets you a registration file which unlocks the full features of MaxBin, and also gives you an online storage facility called MaxByte. When you log into MaxByte you will find a copy of your registration file there, and any chip images you have purchased. You may also upload up to 10Meg of your own images, files, or documentation for safe keeping. This way if something happens to your computer, you merely have to download MaxBin from the support site, and log onto MaxByte and retrieve your tune files.

>> What learning curve should a new purchaser expect in programming their own cars?

Overall, the learning curve is no greater than that of other programs, and certainly less than that of any stand alone engine management system. The basic premise of tuning is simple. What the new user must learn are the limits. I illustrate some of these limits in the documentation and tuning tips, and will also post them in tutorials when they are complete. I wouldn't really qualify the learning curve of tuning as a steep one, but a careful one. I don't feel the learning curve of the program to be steep at all. Over 800 people have downloaded the MaxTune demo and I have received numerous emails of praise on the robustness and ease of program use. I have received a few minor bug reports, which I appreciated receiving. My goal is to offer the Porsche community a solid product.

>> What warnings would you offer to a purchaser of your MaxTune and Maxtronic products?

Ask questions. Find out what the limits are for your particular configuration BEFORE you do any tuning. And as I have stated before, I intend this system to foster tuning knowledge amongst the members of the community. Initially I'll be the one telling everyone what they can and cannot do, soon, they will be telling each other. Of this I am certain.

>> What are the costs of your MaxTune and Maxtronic products?

The base Maxtronic system retails for $275.00 USD. This includes the emulator, switch, switch interface, all cabling and MaxBin on a CD. Chip images can be ordered with it at the same price as chips, typically $249.00 for a Turbo chip, $199 for the new Booster chip, which is the turbo chip aimed at a completely stock, non-modified turbo. I charge $175.00 for all of the NA cars including the S and S2. MaxTune retails for $199.00, and will be on sale on promotion for $149.00 for 30 days. The Pro version of MaxTune is aimed at tuners and chip vendors, it retails for $349.00. ***AA***

Vu Nguyen >> Executive Director, Porsche Club of America

What Porsche enthusiast has not pondered how to make their passion a full time profession? Vu Nguyen has done just that by becoming the executive "big cheese" at Porsche Club of America. He is quite literally one of us. His recollections of how he became a Porsche enthusiast reads like any number of other Porschephiles. Perhaps this fact is why he can serve the Porsche community so effectively. The saying 'takes one to know one' surely fits best in his professional case.

Vu was trilled to take time out of his busy PCA schedule to grant us a conversation on his enthusiasm toward Porsche and about the future of the world's largest single-marquee car club. The next time you enjoy a PCA event or publication take time to think of this guy because he is always thinking of you and your love for Porsche.

>> What started your interest in Porsche cars?

Vu Nguyen: For as long as I can remember, cars have been a major part of my life. It's been a passion. As a youngster I cherished my Hot Wheels collection (complete with blue vinyl carrying case) and played with them everyday for hours. As my parents shopped for groceries, I often wandered off to the magazine aisle to read up on the new car previews and road tests. Porsche was often featured in the auto magazine shootouts I read.

In 1990, I befriended a colleague who showed me pictures of his '87 Guards Red Carrera. He was enthusiastic to share with me the story of his car and how Porsches are attainable to those who are interested. "Really," I thought. Of course that's all it took. From that point on I was on the hunt for my "attainable" Porsche.

>> How has your Porsche interest grown and evolved over the years?

Having been at the Porsche Club of America for over a year my enthusiasm and interest has grown exponentially. I only wish I had more time to enjoy all that is available to Porsche enthusiasts.

>> What defines a Porsche to you?

Simply put…Performance and excitement.

>> What Porsche cars do you own & why?

In the fall of 2003 the same friend called with a lead on an '87 911 Turbolook (M491) Cabriolet with 29,000 miles. It was owned by a PCA member. After reviewing a few pictures were shared, a one way flight to Rhode Island, and a PPI, I was then heading south on I-95 in my "new to me" 911. The weather was perfect for top down cruising. No stops except for gas. Six hours later I arrived home, complete with a sun burned forehead. It didn't matter; I was now a Porsche owner.

After I accepted the position at PCA, I personally felt that it would only be appropriate that I drive a Porsche on a daily basis. My understanding wife allowed me to sell her car and purchase a '99 996. I purchased it from a local seller who was leaving the country. The car has been a dream to own. It is Fast, fun, and reliable.

>> What modifications have you made to your car & why? How are you pleased with the results?

Since the '87 is 1 of 16 produced that year, I have limited modifications to items that can be converted back to stock. With the help and advice of several buddies in the area and I upgraded the audio system, lowered the car, bolted on an aftermarket ex-

haust, swapped in a high performance computer chip, and swapped factory steering wheel for a Momo piece. After getting hooked on PCA Driver's Education programs, I added a bolt-in roll bar, Sparco fixed seats, 5 point harnesses, 17" Lindsey Racing fuchs, and R-compound tires. The car is fun on the track while still very streetable.

The 996 came with a lot of uninstalled parts when I purchased it. Items like: clear signals and tail lamps, short shifter, extra wheels and tires. However, because it's a daily driver, I've focused mainly on maintenance. I did have the opportunity to add an 8" subwoofer to the audio system, lower it with H&R springs, and replace the driver and passenger seats with newer OEM seats, added modified mufflers, and aftermarket wheels. The car is really fun to drive and is definitely an attention grabber.

>> What cars do you have on the future ownership list & why?
Well…..I'm always looking for a barn find. But I'd really like to find a 356 coupe. I have a 1960 1600s motor but no car attached to it. I'd also like to have a 997. So much about that car is right…performance, look, and four seats (for the kids).

>> How do you feel the Porsche car culture differs from others?
Porsche owners are enthusiasts. When you purchase a Porsche you are purchasing a product with a successful motorsport racing heritage. I think all owners are cut from the same cloth as far as enthusiasm. We've all dreamed about owning this special marque and now that we have one, we are looking for a forum to enjoy ownership.

>> What really gets your emotions going; Tuning Porsches, Attending Events, Racing, Restoring cars or perhaps all the above. Why?
All of the above. I truly appreciate the friendships I have formed around the ownership of a Porsche. Doing everything you mentioned is fun because of the people behind the scenes making it happen and the attendees who are there. I still get giddy the night before an event.

>> How has becoming the PCA Executive Director enriched your Porsche experience?
Prior to coming on board, my experiences with PCA were limited to a member's perspective. I enjoyed many functions (DE, autox, picnics, concours, etc.) hosted by the Chesapeake and Potomac regions. I always attended as a participant and admired the extent of volunteerism in the organization.

Now with a staff perspective, my eyes have been opened to the many details of day-to-day PCA business. I can now truly appreciate all of the hard work our dedicated staff members and volunteers provide to the organization. I am excited to have taken a role in this organization to continue its traditions, as well as bring about positive change. I've worked in many non-profit organizations and the quality of work and dedication of PCA members is unrivaled.

>> What have you learned about Porsche people since starting at PCA?
Our Club comprises of all walks of life. It's amazing to see how we may come from different backgrounds, yet when we talk about Porsches we have the same amount of infectious enthusiasm.

>> What has surprised you the most about working with Porsche North America in club matters? How important is factory support and why?
Porsche Cars North America has been great to work with. They value PCA and PCA members input and support. In fact many of our programs would be difficult to implement without their support. It's only natural that we have a close relationship with the individuals who make the cars we love.

>> How do you feel the Porsche community has changed over the past 10 years? How has PCA adapted to these changes?
It's tough for me to answer this one since I've only been in the community since 2003. I do see younger enthusiasts and more first time Porsche owners getting involved, probably due to more cars available for pretty much any budget.

With a more diverse crowd in terms of Porsche activity/experience, it's important the PCA continue to offer a large range of events (touring, rallys, concours, drivers ed, autocross, technical sessions, social, etc.).

>> In the days of old Porsche owners had a real originality attitude to their car. How are Porsche owners more open to tuning their cars than before?
Absolutely, being unique is important these days. Tuning or adding aftermarket pieces to our cars are a way of expressing our individuality and in some cases a necessity to enjoy our cars in certain environments. Thousands of aftermarket suppliers exist because there is a strong demand. Such aftermarket suppliers are able to offer products that add performance, convenience, and/or style. I'm the type of individual that can't leave any car in the state it was purchased. I always do something to them to make them unique. The aftermarket and tuning scene provides me the ability to do so.

One must be careful not to void warrantees as well as not to perform modifications that may affect long-term value. That said, it's your car enjoy it however you like.

>> Based on your experience with the PCA, what different types of Porsche owner are there and how does the PCA serve each type?

This is a tough question because our members can be typed based on the many competitive and non-competitive events held within PCA.

I guess the basic breakdown could be new car/first-time Porsche owners and long-time Porsche owners.

For the new car/first-time Porsche owners we offer the Quest program. This program allows those who are looking to get into the Porsche world an opportunity to learn the right questions to ask when searching for their first Porsche. For $40, they receive a six- month subscription to Panorama, access to the online PCA Mart, and access to the technical sections of PCA online.

I also receive several calls a week that start out "I'm looking to get into a Porsche…do you have any recommendations." I try to take the time and get people pointed in the right direction and to the right resources.

For the long-time Porsche owners, I'm really just trying to maintain the traditions the Club is based on, while at the same time introduce new resources to improve efficiency and increase excitement. It's important that PCA make participation exciting for even those that have participated for decades.

>> What has been your most enjoyable experience behind the wheel of a Porsche?

I have to say the feeling I had driving home after purchasing my '87. It was a dream come true. I remember enjoying the six-hour drive from Rhode Island to Maryland. Though it was a simple cruise down I-95, I felt like I was on top of the world.

Coming in at a close 2nd, is the feeling I get when I'm on the track and I'm able to reel in cars that I know are much faster and more capable. It's very satisfying to know that a car built over 20 years ago is still very much capable of delivering such a high level of performance.

>> What Porsche experiences are left to be done?

There are many more left, but for now I'm going to focus on becoming a better driver. Even though I attend many events, I often don't have time or have my car with me to drive in the event.

Some day I hope to have a dedicated track car and maybe even try my hand at PCA Club Racing. I'd also like to find my 356 coupe and make it into something special I can drive on a daily basis.

And lastly, I hope to get an opportunity to visit the factory in Germany. It's something all die-hard Porsche enthusiast hope to do.

>> How important is the internet to PCA's future? How has the advent of Online Forums and Chat Bulletins changed PCA's mission?

Like all businesses the Internet is vital in our day-to-day business operations. We have launched a redesign of www.pca.org. The new site will be easier to navigate, contain more useful resources, and provide more exciting content. ***AA***

Alois Ruf >> CEO & President, Ruf Automobile GmbH

As a legend in his own time, Alois Ruf needs no introduction. His accomplishments in the automotive performance car world are truly special. RUF Automobile, under his direction, was first a Porsche aftermarket tuner, and then grew to be a KBA-recognized German car manufacturer and now as of August, 2006 is a fully acclaimed Group 1 member of the German Automotive Industry Manufacturing Association (VDA). Alois Ruf's commitment to quality and innovation is the reason why his company has progressed to the high echelon of German automotive stature. Not to mention his cars are bloody fast and to any car enthusiast represents the ultimate in dream motoring.

With the introduction of the RUF CTR3 and the opening of their new Bahrain manufacturing facility, Alois Ruf is once again leading his company to new horizons. Autobahn Ambition Magazine is proud to have him discuss with us the secret of RUF's success and to do a little reminiscing about his company's past.

>> How has being raised by a father involved in the auto business help shape your interests?

Alois Ruf: As a young boy I loved to be in my fathers work shop to help him and of course to learn from him. So the fascination for cars had to come automatically.

>> What began your passion for Porsche cars?

Back in 1963, my father bought a Porsche 356 Hardtop Coupé that had been in an accident. He repaired it and we kept the car for one year. I think there my Porsche fascination started. You can also call it the Porsche virus.

>> Was your father a Porsche enthusiast? How did he encourage your interest in high-performance sports cars?

My father was a general car enthusiast and, of course, he loved sports cars. He owned a Maserati 3500 GT in 1964. Porsche was the German sports car in the sixties. And, of course, the fascination of the sports car was given from the father to the son.

>> What inspired you to change the RUF Company in 1974 to tuning Porsches?

It was the inspiration to improve the Porsche 911 where it was possible and to make it faster and more individual.

>> Do you still have customers that own early RUF cars such as the 3.3 liter Turbo car or the 3.2 liter normally-aspired car?

Yes, of course we have these customers; they know what they have with their cars. The excitement for these people is to drive a sports car in its purest form.

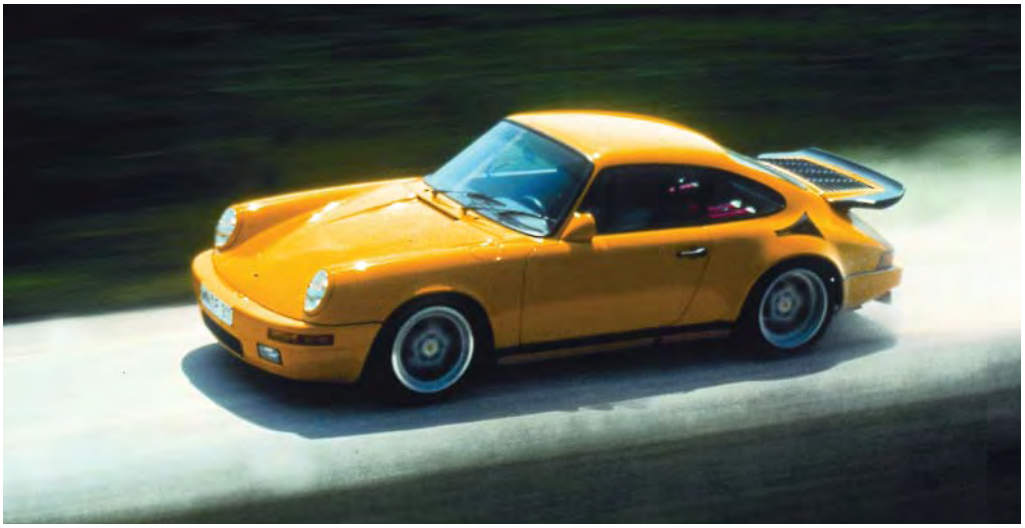
>> How do you feel these early RUF cars influenced later Porsche production cars?

I do not know if the early RUF cars influenced the later Porsche production cars, but in technology, RUF has been several times ahead. Some examples are the 5 and 6 speed transmissions for the 930 Turbo, the Motronic turbo engines, and the 17, 18 and 19 inch wheels to name a few.

>> How has your vision for RUF Automobiles changed since 1975 when your first tuned Porsche appeared? And what makes a RUF car unique?

My vision has changed from a Porsche tuner to a car manufacturer for high performance cars. A Ruf's uniqueness is in the combination of high performance, handling, and durability for

"The CTR "Yellowbird" was the car that pushed the RUF image in the past like no other RUF car before and proved the technical potential a small car manufacturer can have," explains Alois Ruf.



an easy daily use car. Our customers want to have a high performance sports car, that can be used every day and that is reliable. We still cater to the some type of car enthusiast as we did in the beginning.

>> How has the CTR "Yellowbird" car contributed to the RUF image?

The CTR was the car that pushed the RUF image in the past like no other RUF car before. The CTR proved the technical potential a small car manufacturer can have.

>> When you arrived at the Road & Track high speed test in 1987 with the new CTR car, did you realize how this moment would change your life? How so?

At the beginning I did not realize the magnitude and the potential that would be generated by this just simple, light and durable car. Today the CTR is a legend and RUF's best known vintage car. We realized how dominate the car performed when we had done several (private) comparison tests. It had the important details that a high performance sports car should have to be fast; a powerful engine, little weight and good aerodynamics. It was the complete package of the CTR that made it so dominate.

>> How did the Road & Track journalists respond to the "CTR"?

They were playing with words and were in a happy mood after the high speed event. Suddenly the word "Yellowbird" was created and sticks with this car forever.

>> With the exception of "Yellowbird", what is your favorite vintage RUF model and why?

Then my favorite RUF model is the RCT Evo with 425 hp based on the 964. This car has a single turbo engine that nearly feels like a natural aspirated engine, when you drive it. The car is still very fast and is pure fun to drive.

>> How do you view the future of the Porsche tuner market?

At the moment there are so many Porsche tuners on the market. In the future only

the innovative and high quality minded Porsche tuners will survive. But RUF is not a tuner, we are a car manufacturer legalized by the German authorities in 1982. And since August 2006 we are a member of the VDA, that's the German car manufacturers association.

>> How will the joint venture with Diyar Al Bahrain change RUF?

This joint venture will give us more market strength and more possibilities to develop new RUF models.

>> What are the benefits of this venture to RUF Automobile GmbH?

We have more production capacity and a facility in one of the most important markets of the world. There are so many car enthusiasts living in that region. RUF Bahrain will open new possibilities on the world market for us. We will continue to build our cars with the RUF VIN from scratch. The Bahrain factory will produce the same RUF cars as in Pfaffenhausen, Germany.

>> Where do you see RUF Automobile GmbH in 15 years?

My vision is that we will develop new markets in the countries where we are not so well known at the moment, like Russia or China. And we will produce some hundreds of RUF sports cars a year all with outstanding performance. ***AA***

Below: Alois Ruf and Prince Shaikh Salman bin Hamad Al Khalifa at the Ruf Bahrain factory discussing thier joint venture to build more Ruf sport cars.

2007 Rolex 24 of Daytona

Porsche Racing Illustrated >> Porsche GT2 Victory

By: Kevin Sims
Photos By: Randy Stevens

Porsche continued its winning tradition at the Rolex 24 Hours of Daytona race by taking the top podium spot in the GT Class. Struggling through out most of the competition, Alegra Motorsports surprisingly overcame their adversity and brought home the class victory in their Porsche 911 GT3 Cup racecar. With a mere seven second margin and after 668 laps, Alegra's driving team, Carlos de Quesada, Scooter Gabel, Marc Basseng, and Jean-Francois Dumoulin, held off the Pontiac GXPR of Banner Engineering.

Porsche GT2 Victory

"The car was running hot near the end of the race, and the second-place Pontiac closed to within a short distance, but we short-shifted the engine, were easy on the brakes, and stayed away from traffic to stay in front," said Dumoulin, the Grand-Am ST1 champion in 2002 and the GS1 champion in 2003.

Dumoulin, the most experienced Grand American driver of the Alegra Motorsports team, admitted that they were the underdog against the larger Porsche teams. However, they worked hard to prepare the car for the event and did not give up. The team's work ethic and commitment paid off when at the last 30-minute mark of the race their Porsche and the second place Pontiac were in the pits at the same time. Rarely does a 24 hour race come down to a pitstop to decide its conclusion, but the Alegra crew serviced their car and got it back on the track sooner than their competition, thus sealing the win.

Porsche GT2 Victory

"We struggled through winter test days and most of practice without getting the set-up right, and then, right before qualifying on Thursday, we got it right," said de Quesada, owner of Alegra Motorsports.

Team Alegra faced overcoming adversity right from the start. Their #22 Porsche nearly ended their day on lap 4 when Gabel missed judged turn 1 sending the car into a wall of tires. Though embarrassing, the damage to the car was not as severe as thought and the Alegra team dodged a bullet.

Throughout the majority of the race, the Alegra team were running mid field with other teams running Porsches in the lead of the GT class. The most dominate was car #85 of Farnbacher-Loles, driven by Dirk Werner, Jorg Hardt, Pierre Ehret and Leh Keen, held the lead for roughly 15 hours.

On lap 584, blooms of smoke emitted from Farnbacher-Loles 911 GT3 during hard acceleration. The car's team chose to do an unscheduled pitstop to investigate the issue. The bellowing smoke turned out to be resulting from a severe engine oil leak. The racecar continued their lead after the stop, but not for long.

Porsche GT2 Victory

The Farnbacher-Loles Porsche returned to the pits on lap 615 giving the then second place car of Alegra Motorsports an opportunity. With only an hour and 15 minutes left in the race, the Alegra Motorsport team seized the moment and grabbed the GT-Class lead.

Though in the lead, car #22 was not without concerns. An overheating engine required the Alegra Motorsports team to nurse their car the rest of the race. Smooth driving and a successful pitstop gave Alegra Motorsports all the exploits they would need to taste victory in the biggest race victory in the team's history. ***AA***

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