

Target 200

The double century's an easy mark in a race car. But just try it in a street-legal Porsche on 2.2 miles of two-lane blacktop

By David Barry

The coyote was standing by the midpoint of the straightaway of the Chrysler Proving Ground in the Arizona desert, a sparse landscape of sandy scrub, sage and cholla cactus. Like the cactus, the coyote belonged there, and had every right to watch what a group of evolutionary newcomers was up to: trying to get a bright red, slope-nosed, wide-fendered Ruf-motored Porsche 911 Turbo moving down a two-mile stretch of pavement at 200mph.

Coyotes, with thousands of years' seniority over man as earth residents, did not survive two Ice Ages and countless forgotten species by being stupid. This coyote was clearly out to watch—not make a jackrabbit's suicide dash across the pavement in front of the car. But a pickup truck was dispatched to chase it away anyway. Then an all-clear signal was radioed to the trailer where Sid Stewart Jr and Sid Stewart III, a father-and-son team from the Arizona Sports Timing Assoc, had their home-built solid-state timing equipment set up. The bank of electronic circuitry was connected to a pair of lights 132ft apart, just past the two-mile mark on the track. The equipment, the Stewarts said, is accurate to nine decimal points.

An ambulance crew was standing by. All was ready. After a final radio confirmation from finish-line to start line, a cloud of dust churned the still desert air at the far end of the strip. The Porsche was launching a fierce charge off the line. The run was on.

The morning had started like all top-speed run mornings: early. The Stewarts had arrived just after daybreak to set up their marker cones and timing lights. Everything was ready by the time a slightly bleary-eyed contingent reached the track after a 40-mile drive from Scottsdale.

Motorsports Design owner Robert Holcombe, 26, and partner John Stanchina, 23, made a pair of preliminary passes in the car together, easily clearing an indicated 170mph at part throttle. That had been promising. Now, not quite 9am, the first run was underway and it was going almost too smoothly.

The speed run had faced obstacles almost from the outset. Holcombe and his wife Debby, 24, had initially applied for permission to run on state highways, which in Arizona are frequently straight and flat for 10 miles or more. Permits could be had, they were told, by going through proper channels. But those channels proved more and more frustrating and time-consuming to pursue until, after several days, they gave up on the effort to run on public roads. They turned to the Gila Bend Indians, who had recently allowed a top-speed attempt by a factory twin-turbo Corvette on reservation roads. But that, too, meant petitioning and waiting for a committee response, and time was running short. When the Chrysler Proving Ground facilities turned out to be available on a rental basis, they decided to go there, even though the 2.2-mile two-lane straight test-run stretch was less than ideal for a 200mph run.

Consider. Accelerating to 200mph and stopping in such a short distance is a far more daunting challenge than hitting a target top speed on the Bonneville Salt Flats or test tracks with straightaways several miles long. This effort would require fierce acceleration followed by immediate and massive braking once through the traps. Despite the obvious odds against reaching the stated 200mph goal, the Motorsport Design crew was confident. So confident that they had driven the red record-run Porsche to the track, with no provision for a tow vehicle to

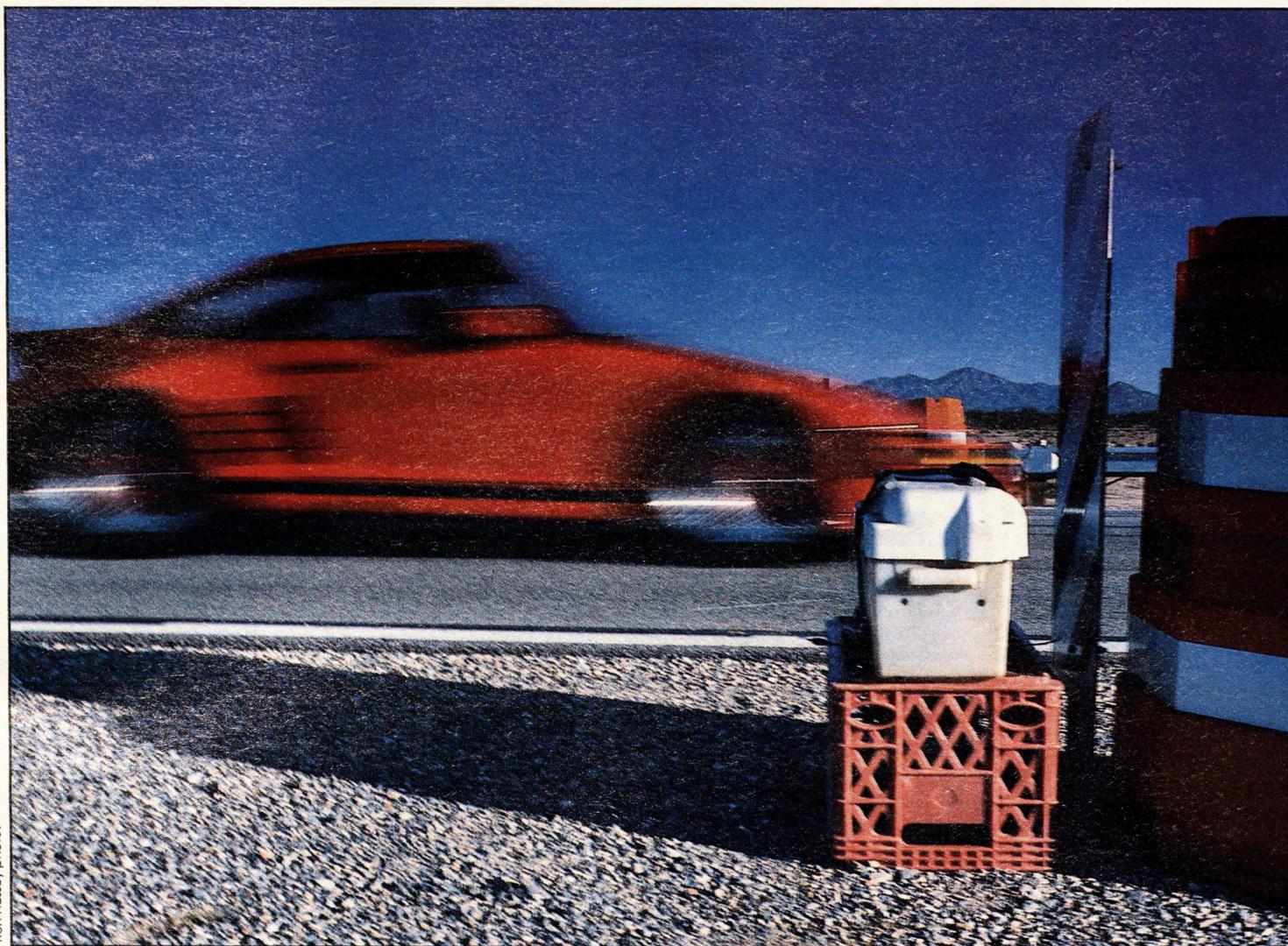
haul it home if something broke, which is what usually happens on speed record runs.

Now the car was growing, materializing from the dust plume into a visible red dot well before the sound reached us. It was a 1986 911 Turbo with a slope nose and 935-style wide rear bodywork and an engine Holcombe said was built to 934 race-motor specs, with twin-plug ignition, intercooler and special cams and exhaust. The motor was supposed to be good for 450bhp, maybe more, well beyond the stated 375bhp output of the Ruf-modified 911 Turbos which have clocked 187mph in Germany.

This car, of course, was handicapped by the ultra-wide rear bodywork, which presented a very wide profile to the air. It's difficult to guess the top-speed penalty involved, but the 187mph clocked by the Ruf 911 Turbo in Germany was achieved in a car wearing the skinny, narrow-hipped bodywork of the standard 911 Carrera.

Holcombe and Stanchina, the engine-builder and driver, were confident they had the power to raise the Ruf Porsche mark by over 13mph, to crack 200mph. The car had run like a tiger on the way to the track, demonstrating acceleration several wavelengths hotter than the standard Porsche Turbo, which itself is no slouch. It was a really fast car.

The difference between a fast car and a really fast car is the back-pinning acceleration in third gear, where a fast car begins to lose the edge of real excitement. A really fast car, like a 935, keeps pulling just as hard all the way up. This car, on the road, felt really fast up to what seemed an effortless 130 or 140mph, when Holcombe backed off. Acceleration test figures of 0 to 150mph in 15sec had been mentioned, which was promising enough to bring *AutoWeek* to Scottsdale—all at the instigation of



Accelerate, hit the traps, nail the brakes. Turns out 2.2 miles is a little short for 200mph work. Even with a 490bhp Porsche motor. Even without a coyote

the customer for whom the car was being built, Alabama auto dealer Ken Evans.

For a few moments Evans' car did not seem to be coming. Then the sound cut over the desert like a 727, the turbocharger muffling the exhaust and intake noise into a sustained, low whoosh as the car hurtled into the foreground and passed in an eye-blink. Standing near the barrier it was hard to guess the speed—fast, but how fast?

The goal of 200mph has not been reached by any production-based street Porsche other than the 959. Reaching it here would put this \$112,000 911 Turbo a giant step ahead of the Ferrari Testarossa, the fastest US-legal production car with a recorded top speed of 181mph. (The Ferrari GTO, which can be brought into compliance with US standards, has shown no higher top speed

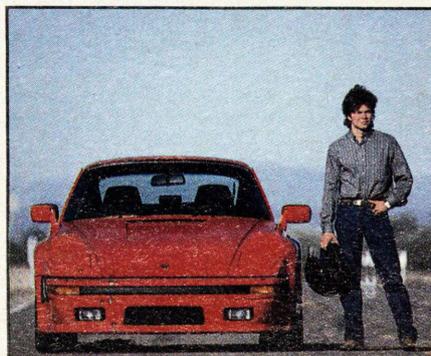
than the Testarossa in magazine road tests.)

In fact, 200mph has been reached by only a few non-racing cars. Forget the claims you've heard made for ultra-modified cars with 200mph-plus top speeds—some offered for sale to the unwary in the back

pages of this and other magazines. Until those digits show up on timing sheets, they're nothing but unsupported advertising claims. The number of street cars actually clocked at 200mph, or close to it, is tiny.

Only four come to mind: Andy Granatelli's berserker 880bhp Chevrolets, one a Camaro Z28 clocked at 239mph, the other a Caprice clocked at 195mph; the Gale Banks' twin-turbo Pontiac Trans-Am is another, and then there is the twin-turbo Chevrolet Corvette prototype recently timed at just over 200mph on the Gila Bend Indian land. There may be others, but they can be counted on the fingers of one hand.

And those runs were made with plenty of running room for acceleration and plenty of shut-down room at the far end. To crack 200mph in roughly one-and-three-quarter



John Stachina: Not exactly satisfied with 181mph



Sid Stewart Jr and the magic piece of string: When the markers were only 100ft apart, the 244mph speed reading made you sit up and pay attention

miles, which is where the timing traps were set up at the Chrysler Proving Ground strip, then stop the car in time to avoid a high-speed desert landing would have been remarkable. At its \$112,000 price (including \$28,000 in engine work) the Motorsport Design Ruf-Porsche would have represented the best European performance car bang for the buck, faster than everything but the 959. (Bear in mind that NASCAR, Formula One cars, Indycars and IMSA prototypes exceed 200mph with ease, but the differences between these pure racing cars and the most radical of street cars are enormous.)

So. The cool desert air crackled with expectation as the Scottsdale group, none of whom looked over 25, waited for the results from the timing trailer: 168.46mph. Groans of dismay gave way to stunned quiet as Stanchina U-turned at the end of the straight. There was the unspoken hope that something had held him back and there was more speed coming.

"I wasn't even up to six grand in fourth," he told Holcombe. He already knew it was a slow run. "The needle didn't pass 5800rpm. That's slower than we went on the way to Tucson."

After a few words with Holcombe, he headed back to make another run just as slow as the first: 168mph and change. But there was hope; the fuel warning light had come on and the car was sucking gas from a

near-empty tank. It might be fuel starvation.

"I think that's it," Stanchina said. "The fuel supply just isn't keeping up with the engine at that speed."

Two pickups and a rental car followed the Porsche back to the starting point, and 100octane aviation gas was pumped from a portable rubber container into the gas tank. Then Stanchina ran again.

There was another tense wait of a long 30sec for the read-out: 167. Then utter chagrin at a car humiliating itself and its builders, a story crumbling.

"It's going like crazy up through third and up to 5800 in fourth," Stanchina said. "It pulls so hard I'm getting peak revs half-

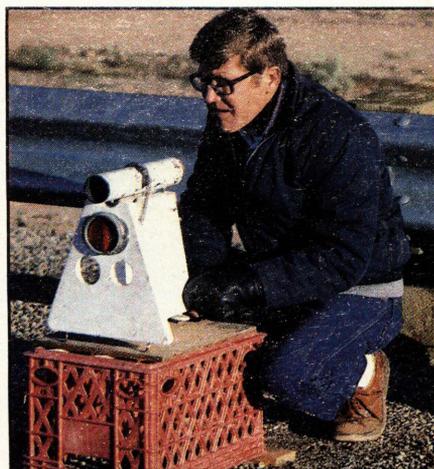
way down the straight. Then it's like I'm hitting a wall. It just sits there and won't pull anymore."

The next run was slower: 164mph. Then came the final, seemingly inevitable act to a disappointing drama: a pop and puff of smoke through the traps as something inside the engine gave up. It was all over, at least for this week. Holcombe was undaunted, lining up a tow rope to pull the wounded Porsche back to Scottsdale.

"We'll take it apart tomorrow, find out what the problem is, and come back next weekend." Holcombe suspected a holed piston, a very sanguine deduction in a sustained speed attempt like this, especially with a low fuel situation.

What had happened is what most often happens when a car is taken out to break a speed record: The car breaks, not the record.

Usually you read about the records that get broken. The stories about cars that break instead usually don't get written. They get killed, and everyone goes home unsatisfied. This story is getting written because the flow of recent stories of monster speeds in auto magazines gives a false impression of reality: Pack a bag, hop a plane from LA to Phoenix, drive to the track, spend a couple of hours and see a car break a speed mark that is still a global rarity except on race-tracks and the Bonneville Salt Flats.



Sid Stewart III: Alas, the voice of disappointment



One of two things is going on here. Either the crew's refueling the Porsche, or blowing the sucker up

In the real world, it usually happens like this story. Magazine editors and writers know this, which is why boasts of 200mph capability from most sports-car hot rodders are given the same respect as the notice that you have just won a valuable prize (from a list including a portable color TV, a Corvette, a microwave oven, a portable AM-FM stereo, an outboard motor) at the cost of a two-hour drive to hear a two-hour sales pitch for time-share vacation condos.

The Motorsport Design claim was taken seriously because Ruf-built cars have delivered tremendous speed in European tests. What Ruf parts have done in Europe, they could do in the US. This car's engine had, on paper, the power to do 180 or better and perhaps approach 190mph, if not 200. Anything over 180 would warrant a story. But the Holcombes and Stanchina were to learn that numbers on paper don't necessarily produce numbers on the track. A car built with Ruf parts in Arizona is not necessarily the same thing as a car built in the Ruf works in Germany. Besides the aerodynamic handicap, this car's motor was built and installed without benefit of dyno testing, which meant the top speed projections were really no more than guesswork.

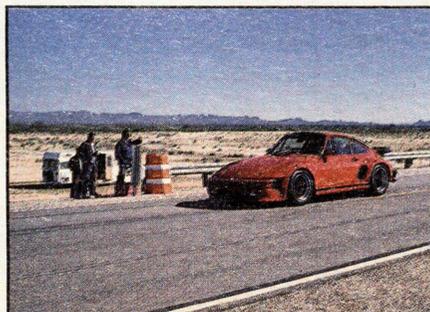
We learned this to our disappointment after the engine failure, because auto journalists are painfully familiar with aftermarket modified cars that go slower than the stock versions. Or break and die at embarrassing moments—just as this one did. In fairness to the Holcombes' and Stanchina's efforts, Holcombe, with prophetic good judgment, had elected to bail out of the speed record project after seeing how difficult it was to even find a place to run the

car. But interest and excitement mutually kindled by the car owner, by *AutoWeek* staffers in Detroit and California, who like nothing better than a good fast-car story, pushed Holcombe into going ahead anyway. He was not crestfallen by the failure, either of the engine or the speed attempt.

"We've had problems with the pistons before," Holcombe said after the motor was shut down. "I think the motor was leaned out too far running low on fuel and that did the damage."

His assurance that the car would be rebuilt, dyno-tested, and ready to run the next weekend was overly optimistic. It was not ready for a month, and only then after a frantic final week of all-night shopwork, with the engine finally bolted in and but-tuned up at 4:30am Saturday, giving the exhausted team three hours of sleep.

All this is the standard pre-race record-run prep by teams with limited research and development resources. Again, the Holcombes did not know what they were getting into when they began, and could justifiably have backed out after the first run. But they didn't. The engine went back together with stock 3.3liter pistons because they couldn't afford another set of the Ruf-supplied 3.4liter Mahles. After a week of



The finish line of America's straightest autocross

dyno work, the engine was still not doing what they wanted, but there was no time left. They had to go with what they had.

Back at the proving grounds for a second shot, the timing crew was set up in the same place. The cones and lights had been set up at a spot marked by the proving ground manager. Holcombe and Stanchina made a preliminary pass through the clocks just to check the track. The Stewarts gave them astonishing news: the timing equipment showed a speed of 184mph!

There was suspended disbelief and jubilation. They hadn't even been going for top speed! So the anticipation was overwhelming when Stanchina made his first serious pass. The red car flashed by and he U-turned, waiting for the result.

244mph! At first, subdued hysteria. Then, as reality set in, total disbelief. No amount of wishful thinking could make that a plausible number. It wasn't.

The Stewarts didn't know that the markers laid out for their timing cones were 100ft apart, instead of 132ft apart. So both sets of numbers were totally cooked. The lights were correctly placed and another run made. This time a genuine 181mph and change showed up. A second run gave the same result, within a fraction.

With more power aboard, the car was more than 10mph faster, less than six mph short of the Ruf-Porsche tested at over 186 in Germany, despite the wider rear fenders. But 181 was all there was. Stanchina said it was like a replay of the first time, with the car accelerating ferociously up to the power peak, reaching 170mph before the 1.5mile mark, then creeping up the last few hundred rpm to 6200 for 181mph.

There was no mystery to this. It was all visible in the dyno testing, which showed an impressive 490bhp and a staggering 540lb ft of torque. Big numbers. But they were wrong. Race-tuned engines are supposed to deliver more horsepower than torque, not the other way around. And the horsepower peaked at 5000rpm—far too low for an engine red-lined at 7000rpm. With the gearing they were running, they needed 6750rpm in fourth gear for 200mph, by Holcombe's calculations. That was an impossibility with a 5000rpm power peak. The dyno showed a sharp drop-off above 5000rpm, with power down to 432bhp at 6000rpm and torque down to 362lb ft. This suggests that the car had power to do better than the timed 181, but the engine couldn't deliver it at the rpm required to do it. It was almost as if a logic chip in the fuel management system was installed backwards. Or the motor had been programmed for fast trailer hauling rather than top speed running. But after a week of trying different combinations of the variables they had failed to deliver a better power peak.

So that was that. Ken Evans has got him-

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self a 181mph car with 490bhp and 540lb ft of torque. And the Motorsport Design crew has had a major learning experience.

"We're not through yet," Holcombe said cheerfully the day after the second run, refreshed by a 17-hour sleep. "We didn't know what we were getting into when we started. Now we know what it takes."

What it takes, of course, is time, money and long hours of research and development.

"I figure now that it's going to take 600bhp to get 200 with that body shape," Holcombe says. "And the power's in the engine. It's just up to us to deliver it."

Which he is fully confident of doing. Holcombe thinks the power peak problem in the Alabama-bound car stems from an incompatibility between turbo impeller and exhaust snail. In essence, a higher volume of gas was being driven from the exhaust valves than the turbo intake "snail" could handle, which produced a condition comparable to back pressure.

To solve that problem, Holcombe is going to switch from the Porsche KKK turbo to a Garrett Air Research unit, which he says has a sufficiently wide range of intake and outlet hardware to tailor the blower to the engine's needs.

"We were \$5000 to \$10,000 short on the money to get what we were after," Holcombe says, "not to mention the time and experience. But we'll get there."

The effort, which seems to have become a mission for the Scottsdale group, will continue on another car.

"That red car is going to go to the customer," Holcombe said. "We're not going to use it as our design vehicle. When we have the turbo and fuel supply problems all sorted out on the dyno, we'll put it in another car and go out and get the speed."

Why not make it easier and put the engine in a narrow-bodied standard 911 Carrera, the way Ruf did it?

"We're going to do it the wide-bodied way," Holcombe says. "It's just a matter

of getting the power it takes."

There is logic to using the wide bodywork despite the power handicap. Standard-bodied 911's are notoriously tricky to drive at ultra-high speed. Race-car bodywork is designed to cure that difficulty, in addition to providing room for the ultra-wide wheels used on the track. The test car in this story, Holcombe says, has suspension modifications, along with the fender and nose fairing to provide neutral weight balance at speed and a certain amount of downforce.

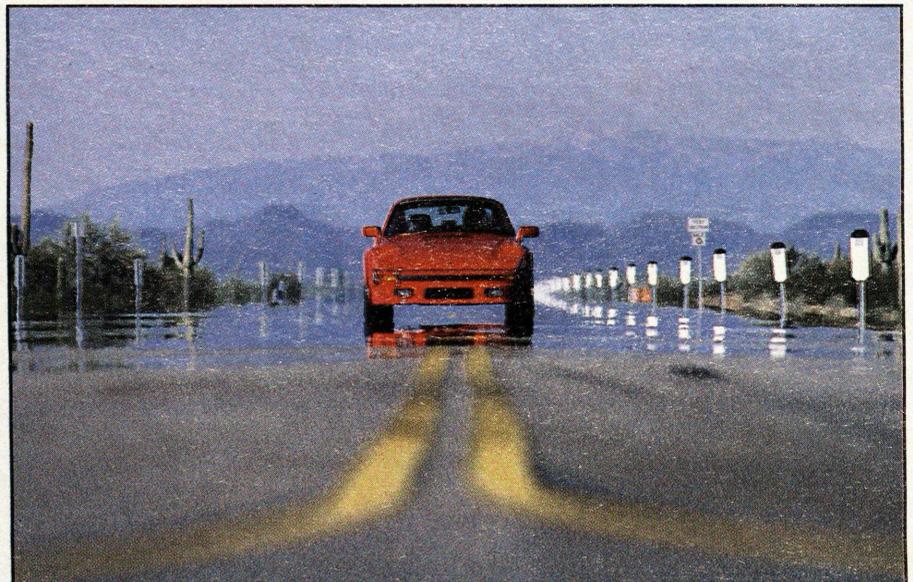
"The car's completely stable at 180," says Stanchina. "It's no problem at all keeping it straight. But it does get hairy braking down from 180 past the timing traps in less than an eighth-of-a-mile."

That makes a good argument for abandoning the Chrysler strip in favor of the Gila Bend Indian Reservation road for the next run. That will make the effort more like a normal high-speed run and less like a high-dive into a swimming pool.

When the next car is ready, we won't be surprised to see it turn a record-breaking speed. The Holcombes and their group have learned a lot about going fast in a short time. They've broken the 180mph mark already, which is a speed that has eluded most people who have sought it.

While 600bhp seems like a very ambitious target for a 911 Turbo engine with any life expectancy, the dyno figures of 490bhp at 5000rpm back up Holcombe's diagnosis of the problem and his planned cure. For the engine to be putting out 540lb ft of torque, he figures there is 550bhp or more waiting to be pumped out once the right combination of turbo pieces is dialed in.

How long the engine could last at that power output, of course, is another question. But for a top speed run, it needn't be very long. And in the meantime, Motorsport Design can lay claim to a record of a sort: They have probably recorded the highest speed ever logged in a street-driven, wide-bodied 911 Turbo. **AW**



The car 'pulls so hard I'm getting peak revs halfway down the straight. Then it's like I'm hitting a wall'



Hans Lehmann/Hidden Image photos

New Tricks For the Old Dog

Porsche's aging but ever-popular 911 is due for an adrenaline injection

By John McCormick

Porsche's never-say-die 911 is facing some major changes over the next few years. More powerful engines, exotic transmission systems and four-wheel drive are all in the picture. With sales of 924s and 944s slipping badly in Europe and the dollar/Dmark relationship denting US profits, the Stuttgart sports car maker is keen to make sure that its oldtimer holds its place in the hearts of Porsche lovers. With this in mind Porsche's American boss, Peter W. Schutz, is planning to update the car in stages and to maintain its distinctiveness.

The first step will be taken this fall, probably at September's Frankfurt show, when a mildly restyled version of the current 911 should make an appearance. As our spy pictures show, the '88 911 has a smoother, more aerodynamic nose with integrated bumper and spoiler. At the rear the old whale tail spoiler is replaced by a smaller version (visible on the '88 convertible) that is normally retracted flush to the bodywork and only raises into position at high speeds when it's needed—rather like the Europe-only Lancia Thema 8.32's trunk mounted retractable spoiler.

This evolution 911 will carry over the existing flat-six powertrain, but with a dual ignition system and a new injection system the 3.3-liter engine's output should jump to around 250bhp. Reportedly development work is continuing on four valve per cylinder, water-cooled heads for the air-cooled powerplant, but technical hitches are delaying their introduction.

In 1989 an all-new 911 is scheduled to debut although its exterior design will differ little from next year's evolution

model. Porsche has chosen to keep the basic shape uncluttered by wings or massive fender bulges, which will probably come as a relief to the legions of 911 modifiers and tuners. However one bodywork change Porsche is planning, as an expensive option, is a slope nose model with pop-up lights. Our spy shot shows a convertible variant on the slope nose model currently available from the factory for European buyers.

One important factor from Porsche's point of view is that the new body will be assembled by robotic tooling, which will considerably reduce production costs.

While the '89 model's exterior will be familiar its running gear and cabin design will be much altered. Among the technical highlights are four-wheel drive (based on the 959 system), ABS brakes, six-speed manual or five-speed automatic transmissions and electronic tire pressure sensors (monitored from the cockpit).

Inside, the cabin is to be radically improved with new seats and trim, a modern heating/ventilation system and, best of all, a rationally designed dashboard.

With so much development going into the new car you can look forward to a considerably inflated sticker. With four-

wheel drive and the other options the '89 911 is likely to cost at least \$50,000 to \$60,000 (current 911s start at \$38,500).

Considerably more expensive again will be a new 911 Turbo that should follow in 1990. With four-wheel drive as standard, an adjustable suspension system, a twin-turbocharged intercooled version of the flat-six, good for as much as 400bhp (100bhp more than the current model), and other high-tech hardware derived from the famed 959, the next generation 911 Turbo will effectively be a "cheap" alternative to Porsche's limited-run flagship supercar.

Coming back to this year's Frankfurt show a further special variant of the 911 may possibly make an appearance on the Porsche stand. Sources in Germany say the company is preparing a Speedster 911, with a lowered windscreen and flattened body reminiscent of the original Speedster.

So the news is good for 911 aficionados. Porsche's faith in the 22-year-old sports car remains strong; with so much invested in the car's development its long term future appears secure, at least to the turn of the century. The downside is that the car's price is set to rise even further into the stratosphere. Still, for some people that doesn't seem to be a problem. **AW**

Spy shots of upcoming 911s show Porsche designers' efforts to refine the classic shape without losing essential character. Top left photo shows convertible version of current slope nose Turbo model (optional in Europe); rest of views reveal details of restyle including new, more aerodynamic nose treatment and retractable rear spoiler, seen (right) in the raised position

