

# 357 TO THE POINT: ALL-WHEEL DRIVE

That you're sometimes better off on all fours is a question of physics. Extreme climber **Thomas Bubendorfer** and 911 series head **August Achleitner** talk about traction, technology, and grip. And about the all-wheel drive in the new Carrera 4.

**August Achleitner:** Mr. Bubendorfer, what is the difference between an extreme mountaineer and an extreme climber?

**Thomas Bubendorfer:** Extreme mountaineering has to do with elevation—for example, the 8,000-meter [26,000-foot] peaks in the Himalayas. In extreme climbing, it's not the elevation that matters, but the difficulty of the climb. Conquering a vertical wall by climbing is a fascinating experience. And when the wall is icy, that makes it all the more fascinating.

**Achleitner:** You also climb without ropes ...

**Bubendorfer:** I can only reach my full potential without ropes.

**Achleitner:** Because it's more technically demanding?

**Bubendorfer:** That may be part of it. The challenge was what attracted me to it in the first place. I wanted to do something that no one had ever done before. Doing the north face of the Eiger without ropes was something new. And I just kept going. It's that pioneering spirit that drives me. As a Porsche engineer, I'm sure you know what I mean.

**Achleitner:** (laughs) Yes, I do recall having heard that word around here a time or two.

**Bubendorfer:** What pioneering achievement are you especially proud of at Porsche?

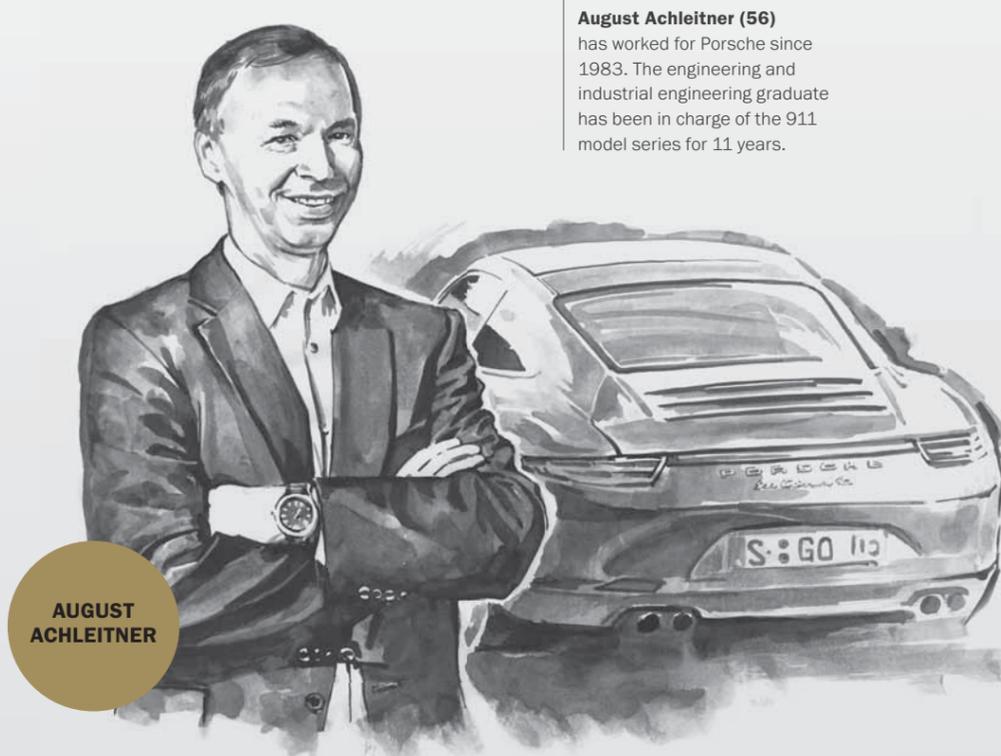
**Achleitner:** Understatement is a part of our corporate culture, but since you asked: our pioneering role in all-wheel drive in sports cars is an important chapter in Porsche's history.

**Bubendorfer:** Of course, a layman might wonder whether a sports car really needs all-wheel drive. Put another way, doesn't the elaborate technology and the associated weight detract from the sports car's core competencies of maneuverability and responsiveness? It's like in climbing: every extra pound or two is just ballast.

**Achleitner:** With one important difference: the decision to climb with just a pick and crampons affects only you personally. The

**August Achleitner (56)** has worked for Porsche since 1983. The engineering and industrial engineering graduate has been in charge of the 911 model series for 11 years.

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focus of our deliberations, by contrast, has to be the customer's safety. And that's where all-wheel drive makes a major difference, particularly in inclement weather—more grip, more safety. And as far as responsiveness is concerned, the minimal extra weight compared to the rear-wheel-drive version is itself a benchmark in the segment. The advancements in Porsche Traction Management in the new Carrera 4 have yielded improvements in driving behavior that until recently we wouldn't have thought possible. Every all-wheel-drive 911 is now a dyed-in-the-wool Porsche in terms of responsiveness, too.

**Bubendorfer:** You're referring to its talent for lateral dynamics.

Illustrations by: Bernd Schifferdecker

**Achleitner:** I'm talking about the talents that a gifted specialist in lateral dynamics has to have in order to meet such demanding technical specifications—talents that are nurtured practically from day one. In the automotive world, if the underlying concept isn't right, the end result isn't a sports car. Or to put it in concrete terms: we're talking about weight, center of gravity, axle load distribution, body stiffness—at best, you can try to hide design flaws with exorbitant electronics and performance overkill. I presume it's not much different in your area of expertise, climbing.

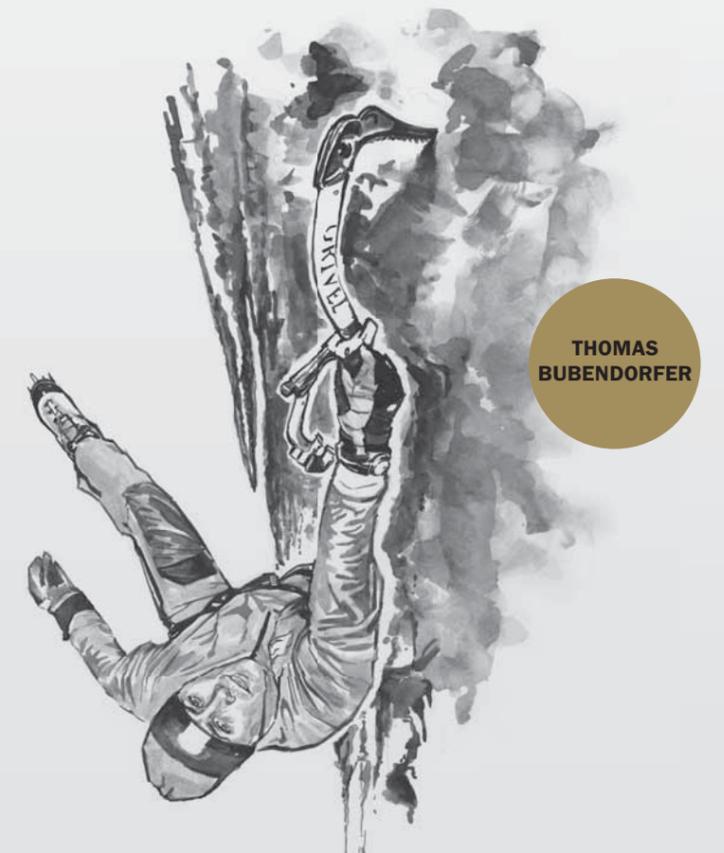
**Bubendorfer:** Of course, fitness, technique, and experience are the fundamental requirements. Advancements in equipment

technology can, unfortunately, quickly lead to trade-offs. Nowadays there are materials with which you can make a very light pick. But I don't like picks that are too light—with carbon shafts, for example—because I like to have something solid in my hands. That extra weight in my backpack doesn't bother me.

**Achleitner:** Which brings us back to all-wheel drive. The mechanical parts—additional driveshaft, differential, cardan shaft—add up to a few extra pounds in the new Carrera, which is minimal for the segment. And they're made of muscle, not fat.

**Bubendorfer:** Muscle mass, to a certain degree, is positive weight. That's true on the

**Thomas Bubendorfer (50)** is an extreme climber with more than 90 first ascents in the Alps, the Andes, Alaska, and the Himalayas.



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mountain as well. If you don't have the muscle, on the wall you have no grip, no traction, no chance. With sports cars, the question is a bit different: What's more important, responsiveness or traction?

**Achleitner:** If I can have both, I take both. And with the all-wheel-drive Carrera, I can have both.

**Bubendorfer:** But that still doesn't change the fact that a true 911 really only needs rear-wheel drive.

**Achleitner:** I'd put it another way. A true 911 always primarily drives the rear axle. It's in its technological genes. The car was conceived as a rear-engine sports car, and it will always remain a rear-engine sports car. If I am able to partially divert the power flow to the front axle when I need to, that doesn't change the basic rear-wheel-drive layout in itself at all. Sensitive drivers already lose, in subjective terms, that little bit of responsiveness with the additional weight I mentioned before.

*"In climbing, the fingertips are the indispensable sensors."*

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But that doesn't change the fundamental character of the car at all. On the contrary, the electronically controlled multiple-plate clutch reads the sensor data—the respective rpms of the wheels, longitudinal and lateral acceleration, or steering angle—with such a high degree of differentiation that, together with the Porsche Stability Management system, and with good road conditions, we can deliver the kind of driving behavior that makes the Carrera so unique.

**Bubendorfer:** And the Carrera 4 is also safer at the same time?

**Achleitner:** That four-wheel drive is a better alternative in inclement weather conditions is a question of physics. You're safer climbing with all four limbs too, right? Speaking of which, are your arms or your legs the more important drive axle?

**Bubendorfer:** Each and every muscle has a role to play in climbing. That's what makes the sport so complex in terms of bodily ex-

*"All-wheel drive is definitely the better alternative in inclement weather conditions."*

ertion. The fingers are perhaps the most important. They not only give you your hold, but can develop enormous strength. The sense of touch, especially, is what makes the fingers so valuable.

**Achleitner:** Comparable to the all-wheel sensors in the car.

**Bubendorfer:** In principle, yes. In climbing, the fingertips are the sensors. If I'm on a difficult passage, I take my gloves off even if it's well below freezing. It's especially unpleasant when there are strong winds. But you just can't replace the fingers' sense of touch. Perhaps it's the same with all-wheel drive. Is the Carrera 4 a better car at the end of the day?

**Achleitner:** If you live in an area with harsh winters, definitely. Otherwise, not necessarily. I'd put it this way: the Carrera 4 is the more complete car.

*Interview recorded by Oskar Weber*