NEW TAYCAN: THE ELECTRIC GAME-CHANGER

No smoke Plenty of fire

21 years ago, Porsche was still making air-cooled engines. Now it's going zero-emission with the Taycan. We go for a ride in the electric car you've been waiting for

Words Georg Kacher **Illustration** Avarvarii

What's the story?

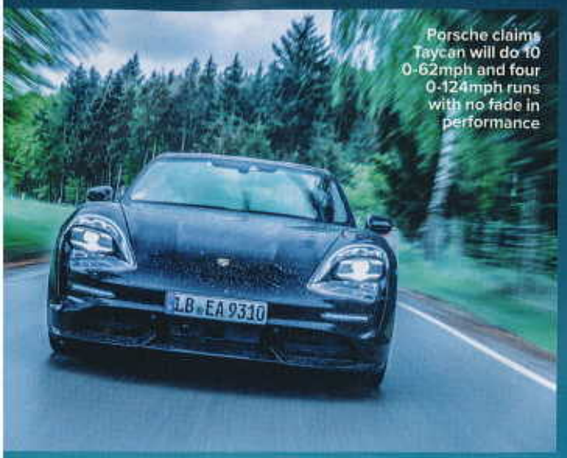
Seven years after the Tesla Model S, the Taycan is Porsche's first electric car – with many more close behind, as it wants more than half its sales to be electric by 2025. Porsche insiders have indicated Taycan prices may start between a Cayenne and Panamera when deliveries start late this year, close to the Model S's £70k jugular. So far 20,000 buyers have put down a deposit. Originally a 20,000-car annual volume was forecast; that may increase, although the supply of batteries – rather than demand from customers – may dictate production volumes.

Riding in an all-electric Porsche Taycan with chief engineer Stefan Weckbach is like a Marvel fantasy adventure augmented by virtual reality headset and F1 simulator. We leave Porsche's Weissach test centre, strike out onto the road, and the very first g-force attack feels like a cocaine bomb that hits the brain before the nose.

This pre-production Taycan Turbo prototype features a beefy 96kWh lithium-ion battery weighing 650kg. It juices a 215bhp/221lb ft motor on the front axle, and a 402bhp/406lb ft powerplant at the rear. All told it's a vast 649lb ft of peak torque, or 738lb ft in the 10-second overboost window.

In launch-control mode, it's as though your eyeballs are being squeezed to the back of your skull. Porsche claims just over three seconds from take-off to 62mph, and to 124mph in sub-10 seconds. Acceleration is brutal enough to shred the driveline if it weren't for the protective torque limiter, the two-speed transmission that can block first gear to prevent mechanical disintegration, and the electronic rear diff lock.

The Taycan isn't just about spectacular acceleration: it's happy to cruise at 162mph for miles without battery heatstroke or exceeding the motors' 16,000rpm maximum. Nor is it unduly focused on high-velocity autobahn runs. This car's true forte – just like so many Porsches – is monstering empty secondary roads on which the low-riding two-tonner is every bit as quick ▶



Porsche claims Taycan will do 10 0-62mph and four 0-124mph runs with no fade in performance

as the lighter and nimbler 911 Turbo – it's even lapped the Nordschleife in under eight minutes.

High-tech dynamic goodies are key. The complex set-up includes air suspension (except on the base car), all-wheel drive (rear-drive for the base car), rear-wheel steering on some models, 48-volt anti-roll bars, active aerodynamics, and steel brakes with serious stopping power. The pulse inverter that masterminds the torque vectoring acts five times faster than chips that govern conventional four-wheel-drive systems. Forget stability management by brake actuation: the Taycan's black box controls everything by wheel-selective torque feed. 'Zero loss, 100 per cent dynamic efficiency,' grins Weckbach.

Genetically, this DNA is more closely related to the 992-generation 911 than the Panamera. In fact, the Taycan actually sports an even lower centre of gravity than its rear-engined brother, in large part because more than half a tonne of batteries are mounted low down and cooled by a liquid circuit integrated into the floorpan.

When we reach a suitably quiet stretch of road, the driver suddenly ups the pace. The stability-control warning symbol starts flashing. Sport Plus firms up the ride, adds macho steering and quickens the throttle response.

And the optional sound generator adds bass to the oomph, like the subdued hum of a synthetic multi-cylinder boxer engine.

This sudden eruption of extra energy does little to disrupt the cool professionalism of the chassis. The directional stability is unerring, and there's breathtaking grip and traction from what these days must be classed as relatively modestly-sized 275/40 ZR20 tyres. Even at speeds that – being unfamiliar with the Taycan – you might expect to be overwhelming, there is absolutely no tugging, twitching or fidgeting, almost as if we're magnetised to an induction loop running beneath the road surface.

The chassis' one de-merit is a lumpy ride, despite the potentially calming effect of the generous 2910mm wheelbase (shorter than a Panamera, longer than a Macan, much longer than a 911) and substantial kerbweight (estimated at just under 2100kg, which is in the Cayenne's ball park).

In so far as you can tell anything from the passenger seat, this ride leaves no doubt that the Taycan will handle like a true Porsche.

Braking is similarly impressive. All Taycans will be equipped as standard with specially-coated PSCB brakes for reduced brake dust, but you can also specify overkill carbon-ceramic stoppers. One of the biggest challenges facing the development team was blending the conventional disc-and-pad system with regenerative braking via the e-motors; plenty of other electric cars offer a compromise that seems to give too much emphasis to recharging the battery and too little to driving pleasure. But this is a Porsche, and that wouldn't play at all well among the faithful. Weckbach says they've cracked it with software that progressively dials out the e-motors as hydraulic braking kicks in. He claims nothing recuperates energy this effectively, and describes a totally progressive pedal feel.

Selecting Range mode helps extend the Taycan's mileage by about 10 per cent. Rather than enfeebling your right foot, it achieves this by scaling back the air-con and adjusting the torque vectoring, though it automatically checks out above 85mph, having twigged that you're not fully committed to stretching the range. ▶

The Taycan is as quick as the 911 Turbo – it's lapped the Nordschleife in under eight minutes

IS IT *REALLY* A PORSCHE?

Every car from the VW Group involves some sharing of hardware and ideas, but the pioneering nature of the Taycan means most of it debuts here. The J1 platform will be used in the production version of the Mission E Cross Turismo, the Taycan Sport Turismo and the Audi e-Tron GT. Porsche fans will be reassured by the familiar curves and details, but are likely to be as appalled as anyone by those rear lights. Bring on the facelift...

A HIGH-TECH POWERTRAIN...

The Taycan Turbo features a 96kWh lithium-ion battery supplied by LG. It's made up of 408 pouch cells packaged in 34 separate modules. It weighs 650kg, and supplies the juice to a 215bhp/221lb ft e-motor driving the front wheels, and a 402bhp/406lb ft motor for the rears, both spinning to 16,000rpm. There's a two-speed gearbox. Acceleration from 0-62mph takes just over 3sec, and the Taycan can cover 0-124mph in under 10sec.

... DESERVES A HIGH-TECH CHASSIS

Top-spec chassis includes air suspension, all-wheel drive, optional rear-wheel steering, 48-volt electronically-controlled anti-roll bars, with the option of carbon-ceramic brakes. It's all helped the Taycan lap the Nürburgring Nordschleife in less than eight minutes.

FILL 'ER UP, MISTER

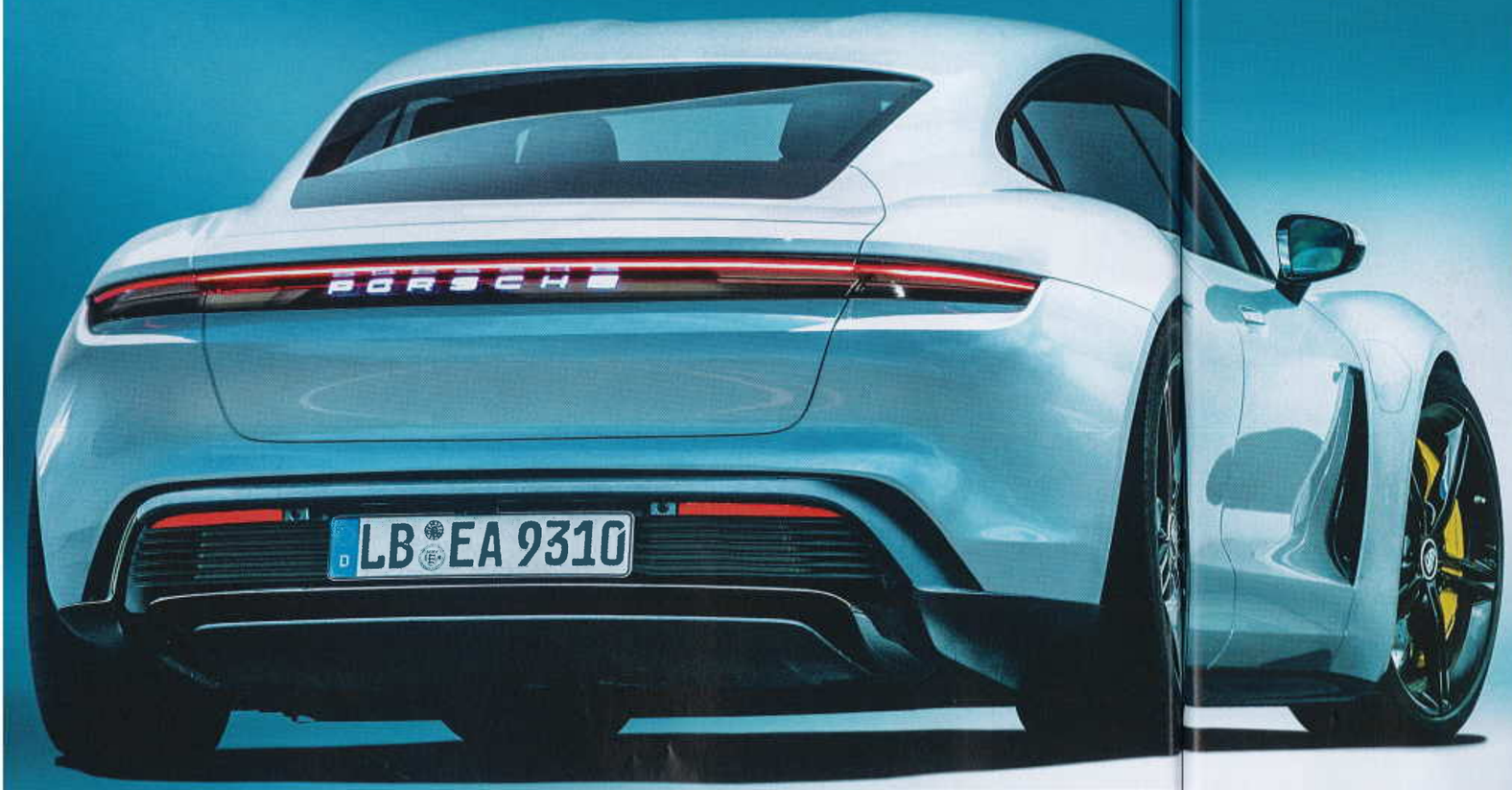
The Taycan is the first EV that can be charged with up to 250kW at an 800-volt charge point. You'll get an 80 per cent charge in 15 minutes – if you can find one, which you probably can't. In fact, you'll be doing well to plug in to 400 volts, which is good for 150kW and an 80 per cent charge in 40 minutes.

We've been cruising swiftly for over two hours now, and the battery still shows 48 per cent charge

Unless the driver activates mild-recuperation mode by pushing a button on the steering wheel, gently lifting off the throttle prompts free-wheeling – Porsche is not interested in slowing the car down unless conditions require it, unlike rivals with one-pedal driving, where a lift off the gas results in braking.

It all seems to be working. Porsche promises a 320-mile range and we're on course for that, having been cruising swiftly through the Weissach hinterland for over two hours now, with the battery still showing 48 per cent charge. It's a lithium-ion unit provided by LG, with a total of 408 pouch cells packaged in 34 individual modules. Performance is said to go the distance, too. Bernd Propfe, platform director for the Taycan, claims you can do 10 full-throttle 0-62mph and four 0-124mph sprints without a decrease in performance. Even if you choose to drive flat out for an hour or more, the Taycan is programmed to let you; it will only go into limp-home mode once the distance-to-empty reads zero. Neither should ambient temperature be an issue, with a -35°C to 45°C window. The Tesla P100D is quicker off the mark, but it's this repeatability of performance, say the Porsche people, that will make the difference for committed drivers.

Porsche has done all it reasonably can to stop range anxiety being a problem. Charge anxiety might be a trickier fix. The Taycan is the first EV that can be fed with up to 250kW at an 800-volt charging point, but the infrastructure is at best patchy. Even those lucky enough to discover one of a handful of 400-volt stations – most of which can typically muster only 150kW – will have to play *Grand Theft Auto* for at least 40 minutes before the power pack is 80 per cent full. Imagine being number four in the queue.




Not as big as Porsche's other four-door coupe, but Taycan is roomy and comfortable

'I'll take it. Now' – Georg meets Taycan, and is convinced

However, with technology coming on in leaps and bounds, the Taycan's charge times and performance are set to quickly improve. By 2021 at the latest, peak charging power is set to increase from 250 to 350kW, which should – in combination with those latest 800-volt charge points – reduce charging time to a swift 14 minutes (although, of course, you'd be appalled if you needed to spend 14 minutes filling your car with petrol). In contrast, a plug-in domestic job takes up to 30 hours. Upcoming inductive charging ability is initially restricted to a measly 11kW. Solid-state power packs will be phased in as they become available, and battery weight will come down as energy density goes up.

But let's not get ahead of ourselves, because even for the first models, technical data are still to be taken with a pinch of salt. Taycan production has already started in an extension of the Zuffenhausen parent plant, with potential peak capacity close to 60,000 units per year, but we'll have to wait until September's Frankfurt show unveiling for detailed facts and figures about the car. This much we do know: the base Taycan is rear-drive only, sports a 80kWh battery and is powered by a choice of 322bhp or 376bhp motors. The next model up, which for now we believe will be badged Carrera 4S, is equipped with a 96kWh battery pack, and offers 429bhp or 483bhp. The top model – the 'Turbo' we're driving – will cost perhaps £120,000. All-wheel drive and the bigger battery are standard on the more powerful two versions. An even more potent 724bhp Turbo S and a lighter rear-drive GTS are still to be signed off.

PORSCHE TAYCAN TURBO

PRICE £120,000 (est)
POWERTRAIN Electric motors front and rear
TRANSMISSION 2-speed auto, all-wheel drive
PERFORMANCE 215bhp/221lb ft front, 402/406lb ft rear, 3.2sec 0-62mph (est), 162mph
WEIGHT 2095kg (est)
EFFICIENCY Claimed range 320 miles, 0g/km CO_2

But as it stands the Taycan Turbo is indecently rapid. With my heart still in my boots, I'm grateful for every speed limit and urban area that comes our way, and these short breathers present a welcome opportunity to check out the cabin ambience. The Taycan is a four-seater with just about enough space for two adults in the back where the 'foot garage' – a rectangular recess in the floor made possible by bespoke shaping of the battery – helps accommodate long legs.

Up front, eye-catchers include power-operated lightweight bucket seats and the curved boomerang digital display, which harks back to early 911s. An additional rectangular monitor on the passenger side is offered at cost. The multifunction steering wheel is peppered with 10 control elements distributed across the two horizontal spokes, the conveniently positioned centre stack is loaded with haptic and visual adventures, and if the main full-width multi-content screen is not enough, extra money buys an extended head-up display. You can specify your Taycan without leather in the cabin.

Like most recently launched MMI infotainment systems, the Taycan's needs an in-depth introduction to unlock hidden skills. The selective display puts the focus on speed, state of charge, consumption, range and, when needed, the location of the closest charge points. There's an autopilot function that will be activated as soon as regulations permit, just like in the Audi A8 it's borrowed from. 'It was our goal to create reduced, user-focused, increasingly voice-based ergonomics which provide only the information you need, to reduce distraction,' says Weckbach.

So what is the provisional verdict from this shaken and stirred front passenger? Well, the Taycan is good looking and solid as a rock even at ludicrous speeds, a remarkable high-performance GT that can't wait to set the seat of your pants on fire but leaves behind a virtually invisible CO_2 footprint.

The car's motions are subtly coherent and nicely fluent, following the driver's instructions with aplomb, and the expertly tuned electronic back-up brigade acts in a subtle and sensitive fashion. The one asset that sticks in the memory more than any other dynamic virtue is the amazing tarmac-hugging flatness. For all the Taycan's deviations from Porsche tradition, that single, crucial quality shows that the same high standards are being followed. From a brand that left behind air-cooled flat-sixes only two decades ago, the Taycan looks like a highly convincing leap to a fully electrified future. ▶