



Peugeot Car Club (Auckland)

# Peugeototex<sup>©</sup>



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Front cover – Leapmotor C10  
Above – Donald Webster

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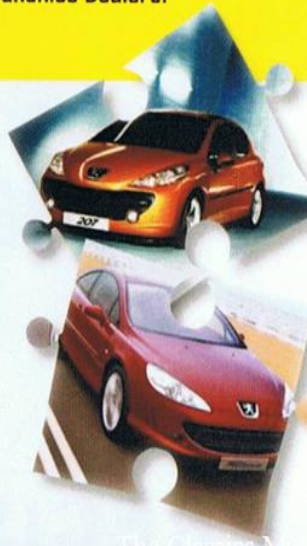
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## COMING EVENTS

**peugeotclub.org.nz**

**For updates on events, keep  
an eye on our website  
peugeotclub.org.nz**

October 24-28 – NZ Targa

November 17 – 1.30pm - Pride of  
Ownership aka Show & Shine

2025

February 9 – Ellerslie Classic Car Show;  
the theme is “Summer Holiday”.

March 9 – Auckland Brit & Euro Classic  
Car Show

## THOUGHT FOR THE MONTH

**Borrow money from pessimists –  
they don't expect it back.**



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responsibility for any views expressed in it.

## PRESIDENT'S RAMBLE

Brace yourselves - I have decided to not deal with car club business in this Ramble. It has been a case for many years now that I have considered, or at least significantly wondered, whether I can or could be a competitive eater. (I have never been interested in entering eating hot chilli competitions – that lot are just mad!) However, although wondering it, I have never bothered to track down a competition and test my abilities. This wondering was removed recently when I found an appropriate competition at an Auckland Rugby game.

Diane (my mum – some of you know her) and I went along to the first ever Auckland NPC game to be held at a school. Auckland in the last couple of years have taken one game to the community each season rather than holding it at Eden Park. Last year they held a game at Pakuranga Rugby Club; this year they chose their community game to be held at Auckland Grammar School – my old school, also that of Don Howarth, Matthew Ensor, Michael Grant, Alex Grant, Joshua Druskovich and Kevin Hardie too (if I remember correctly – if not I have just started a rumour) and probably other club members I either don't know of their schooling or have simply forgotten as I write this.

For those that know the place the entrances around the main field were closed off with temporary fencing including around the stone walls along Mountain and Clive Roads, entrance being regulated through Barnett Crescent.

But anyway I digress. What should I see there but a pie eating competition being put on by Westie Pies! This was my chance. I had to know. The idea was that anyone could enter. The “job” was to eat two pies as fast as you could to qualify for the final - an ‘on the field match off’ against three others at half time during the game; half time entertainment as such. It was amazing, just how competitive I suddenly became.

I checked the rules, checked how they were timing it and what was expected. When they told me that it was pretty much just scoff down two mince and cheese pies as quickly as you can with the timer starting when you opened the first pack, I knew what I had to do. I informed the judge I was preparing my pie packets for ease of opening first so don't start the timer and pulled the edges out so I could open them as quickly as possible. Who knows if that extra preparation might make the difference between the final or not?

Then rip. I was into it. The “pie crew” couldn't believe my pace, yelling loudly to the others “*he's demolished the first pie in less than a minute*”, the second one was almost too much for me, as it was still hot, I had to stop and have a drink, to cool the burning top of my mouth. My thoughts were that the heat of the pies cost me 15 seconds. And then I was done. One minute 49 seconds and two pies were demolished. The guy on the timer said to me “*we'll see you in the final.*” I was circumspect, I was sure I could have been quicker and told them that the pie temperatures were too hot, they needed to take them



out of the chilli bin or at least keep its lid off to cool down and give others a chance. Any way at that point of the day I was fastest qualifier.

Mum and I then went and claimed a seat. Now as part of the promotion, Auckland Rugby were giving away a beer and a pie to all members; that was us. I looked after the seats and sent mum away for the pies and beer - but I didn't touch mine. I had enough and knew there was a possibility that I was going to have to eat more! (Mine made it home to the fridge and stayed there for another five days before Joshua ate it.)

I did drink the beer however. It was a Pilsner, not as hoppy as most NZ Pilsner are, but not like the German or Czech ones either. I enjoyed it, but other than being able to tell you it was from NZ and in a "Rheineck" blue coloured can, I didn't notice what brand it was, so I guess I wasn't the best for that promotion.

Whilst sitting waiting for the game to start, watching the Auckland and Bay of Plenty teams warm up, a Samoan chap, slightly bigger than me, but not much bigger, and about 10 years, maybe 15 years younger than me, sat down beside and in front of us. His parents were sitting next to me, and I overheard him say he had just qualified fastest at the pie competition, 1m 25 seconds, a full 24 seconds faster than me. I thought *"well that is probably it, I am unlikely to be in the final, surely there are enough between his and my times for me to be eliminated."*

Eventually he went off and got his free beer and pie too. The pie he gave to his sons and he offered me the beer – I said no, still hoping that I would be in the final at that point. I told him my time and that as I was still a little hopeful of competing against him, I needed the space not the beer!

Halftime approached, those in the final got a text to meet on the far side of the field about 10 minutes before halftime, so off I went, making some space (whether real or psychological) at the port-a-loos on the way. I got to meet the other finalists and not much to my surprise, we were all men (women are too intelligent to do such a silly thing).

To my surprise my new Samoan friend is the youngest and I'm not the oldest. I asked the organisers, because I am curious, did anyone young try? To which I was told yes and none were even close. Maybe speed eating develops with age? As it turns out I was second fastest qualifier, the slowest of the finalists took 2 minutes 16. Taking away my calculated 15 second heat enforced drink break I am still 9 seconds down on the fastest – I have some real work to do if I want to win this...and I do!

Rules are different this time, it's like an old fashioned election – First Past the Post. No timer involved, but there are large television cameras focused on us (apparently we were live on Sky TV – let me know if you saw me). As a minimum we were on the big screen for the crowd.

Is it time to get nervous, or even doubtful of *do I really want to be this*

*public that I can eat that much that fast? Don't know.* I did have my doubts, but I still wanted to know, can I do it, can I be competitive, 25 seconds to make up, will the pies be too hot?

I asked the question, they said no, they were properly cooled down by now. I decided not to risk it, cans of drink were supplied on the table, I pulled a tab of one so I could grab it and not lose time opening it if I did need one. The others heard me ask the question, watched me and pulled open drinks too. I selected the right hand end of the table whilst the other three stood behind it. It meant I could eye up my opposition without having to turn to see them (I never knew I was so strategic – but I knew I wanted to know how they were doing and didn't want to lose precious seconds turning my head).

The countdown is on - and off we go, I quickly realise the 2 minute 16 guy just ain't in the running - unless... ? Us other three are close, but my Samoan friend is fastest, the other guy (about my age, slightly shorter, slightly wider) has a similar pace to me. The promoters in their commentary are saying I'm third, I'm looking at my pie, looking at the opposition and feeling my chewing, I am sure they are wrong, I am sure I am second. I suspect their third call egged me on. The slow guy is getting further behind, reaching for his drink, the pies aren't hot, he just needs something to wash the pastry down.

I reckon I have maintained my speed, the others are starting to slow, some bites I think I might be in front, but the crew are still calling the

Samoan in front, every bite he takes it looks like he could be in front, I take one and think I am in front.

The promoters call it; they call that he is going to win. I think they might be right. The TV camera goes off the group and focuses only on him.....he hits a wall, I keep going. Keep chewing, suddenly the commentators realise they called it wrong. I am the centre of attention, the camera swings to me. I am determined, but oh what pressure! And then done! I am the winner, but I have no time for a victory yelp. I found that last bit of pastry was just about too much, I needed something else in my throat, I grab the can and scull it all - I would think in less than 5 seconds flat. The relief to have something other than pie in my mouth!

And there you have it, 'Pie Eating Champion' My wondering has been answered.

I let the family know through WhatsApp that I have won and they congratulate me. I then let them know I don't want dinner tonight; four pies at speed in an afternoon is more than enough. As I type this, it has been eight days since the event and I haven't had a pie; in fact, I am still not ready to have another.....yet.

Who would have thought after all of those years of reviewing pies and telling you where to get them, what their textures, flavours and aromas are, that I would ever flinch at having another pie? But now the time has come. However, I suspect I'll be back onto them next week.

See you at the upcoming show and shine, Brent ☺

## COMING EVENTS

October 24-28	NZ Targa
November 17	1.30pm. Show & Shine contest at Mangere Boating Club, Kiwi Esplanade, Mangere Bridge
2025 February 9	Ellerslie Classic Car Show; the theme is "Summer Holiday"
March 9	Auckland Brit & Euro Classic Car Show, Pakuranga



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## JEANETTE'S JOTTINGS

Australia has been given the unenviable title of 'allergy capital of the world'. An estimated one in 10 Australian children develops a food allergy in their first year of life, while around six in 100 have a food allergy at age 10.

Using a proprietary chemical process pioneered by Canadian firm Excir, England's The Royal Mint has begun mining old circuit boards from electronic devices for gold and converting what's harvested into a jewellery collection.

Nissan has demonstrated a new automotive paint that can drastically cool a vehicle parked in direct sunshine. Tests have shown that treated cars stay up to 21.6 °F (12 °C) cooler than untreated cars parked side by side.

Kiribati's islands are divided into three groups: the Gilbert Islands, the Line Islands and the Phoenix Islands. These atolls are spread out over the area where the equator and the International Date Line meet, making it the only country in the world that exists in all four hemispheres.

While many countries like the UK can boast about superior vacation time, Americans on average get only 11 days of paid holidays a year. while in Iran, they get 27 paid holidays annually!

A scenic hiking trail has been discovered to be dangerously contaminated with radiation. New tests have discovered that Acid Canyon — a popular hiking and biking trail near the birthplace of the atomic bomb, Los Alamos, New Mexico — is still radioactive today at level's akin to the site of the Soviet Union's Chernobyl nuclear disaster.

In 2019, the USA saw the highest number of fatalities from road accidents in the world at 36,120 deaths - 110 deaths for every one million of its citizens. In 2019, South Carolina had the highest death rate per 100 million miles (160 million km) travelled at 1.73, compared with Massachusetts, the lowest, at just 0.51. It also found 45% of motor vehicle crash deaths in 2019 occurred in rural areas.

An ancient disease linked to malnutrition is on the rise among American children. The rate of scurvy - which can cause teeth to fall out and extreme pain - tripled between 2016 and 2020, from around eight in every 100,000 kids to nearly 27.

A technique originally developed to combat acid rain has the potential to pull an enormous amount of carbon dioxide out of the atmosphere — while helping to de-acidify oceans, restore rivers and boost biodiversity and fish populations.



## FAMILY PEUGEOT STORIES

continued – by John Grant

Meanwhile Alex had also reached the legal driving age. He had been racing go-karts for years and had actually done a racing driver's course. If he had had his own way, he would have been onto a motorbike, particularly as the father of his greatest friend Steven, owned Mt Eden Motorcycle Wreckers and he spent most of his spare time on (and off) motorbikes. However with the memory of my own bike accident still with me whenever my leg got tired, we refused him permission and so he bought a little FIAT 850 coupe. The last owner had overhauled the engine himself - and it wouldn't go. Alex had just had his most serious racing accident and his right arm was in plaster. The wrist had been both broken and sprained and the fingers were badly swollen. After a week they were back to normal size and Alex started pulling the engine out. You can imagine the condition the cast was soon in. He solved the problem very simply. He just got a can of black spray-paint and painted the cast black! (He used the arm almost normally and when they took the cast off, he did not need physiotherapy.)

This little car was in very bad structural shape. Jeanette gave Alex a welding course at Carrington night

school for a birthday present and a very good investment it has turned out to be. He spent a lot of time and a little money getting the 850 into better shape and then sold it and moved up to a 504Ti complete with sunroof. He sent the head and camshaft down to a Christchurch firm and had the head ported and polished and the cam hotted up. It went like a scalded cat. Unfortunately, he misread the way the road was bending in fog and ended up down a bank on the road to Bethells. He and Steven were unharmed but the roof of the car was distorted and once again it was not worth repairing. He bought another 504 from a girl going overseas and transplanted the fuel injection motor into it. (The other 2 litre carburettor engine went into Reay's 404). After a couple of years Alex moved on to a near new Renault Fuego (with a Peugeot engine) and Reay bought the 504 from him. Reay continued to use this car until he left for the UK in 1996. He timed it so that both the REGO & WOF expired the week he left. The car by this time was getting quite rusty so over a few months I stripped off some useful parts and eventually the engine ended up at Mt Maunganui in a 404 and the rest of the car went to the tip.

When Mike started driving he was true to family tradition and bought a Peugeot 404 ute. Well to be quite accurate, he bought it before he could legally drive and various older friends

were only too delighted to drive it for him. One day however, I noticed that the rust in the body was getting to the stage where you could envisage the front separating from the rear and so he was encouraged to sell it to a club member for spare parts.

Some Peugeot engines seem very hard to kill. We bought a 504 and he went to a professional driving instructor whose idea of driving lessons was to make him drive to and from school - Mt Roskill Grammar - in the rush hour traffic. He passed his driving test at the first attempt and began driving proudly to school. After a few years the rust started to show up quite badly on the white car. We were lucky enough to hear of a good 504 with a shot motor so Mike followed in Reay's footsteps and did an engine transplant on the front lawn. By now he had seen Reay do it several times to his own and friends' cars and the thought held no fears for him.

That engine ran for years in his third car - a 505GR which was bought from a deceased estate for \$3000. It had a clapped out motor which died completely the day after he took possession of it. This was no surprise. It was however annoying as it died about four miles from home and had to be towed back.

We have no idea how many times that engine has gone around the clock. Mike did a high mileage every week as the car was used for his work. The only complaint he had is that it was an

automatic and therefore thirstier than a manual. He had to have the transmission overhauled at 220,000 kms at a cost of \$1200 and that proved to be his main expense. He currently drives a 206GTi.

As a family, we have seen several examples of what would appear to be the cars' attempts to do their best for their owners. When they have had a flat tyre, it usually appears at home overnight. When Mike's 504 cracked a piston, he managed to drive it all the way home from Gisborne before it gave up the ghost completely just as he reached Kakariki Ave - from which point he could coast home down the back drive.

Reay once bought a 504 with a dicey clutch. The clutch fork broke so the clutch would not release any more, but he still managed to drive it as far as Kakariki Ave.

When my 505 had problems with the electronic ignition, it also played up early on the way to work before it was out of Kakariki Ave and was able to be rolled home for attention. It is considerate little actions like this which have made me a Peugeot fan for over 40 years.

## RESIGNATIONS

It is with regret that we must accept the resignations of Mark Heimgarten of Remuera, Kaelem Swanepoel of West Harbour and Ralph & Joanne Thompson of Mission Bay.

# PEUGEOTEST

Answers on p 17

1. What was the first Peugeot model to win the World Rally Championship (WRC)?
  - A) Peugeot 205 T16
  - B) Peugeot 206 WRC
  - C) Peugeot 405 T16
  - D) Peugeot 208 R5
2. In what year did Peugeot win its first WRC title?
  - A) 1980
  - B) 1985
  - C) 1990
  - D) 2000
3. What innovative feature did the Peugeot 205 T16 introduce to the WRC during the Group B era, which became a standard in rallying cars?
  - A) Advanced all-wheel drive
  - B) Sequential manual gearbox
  - C) Dual-clutch transmission
  - D) Rear differential cooling system
4. How many World Rally Championship titles did Peugeot win with the 206 WRC?
  - A) One
  - B) Two
  - C) Three
  - D) Four
5. Which famous rally driver helped Peugeot win the WRC title in the early 2000s?
  - A) Sébastien Loeb
  - B) Marcus Grönholm
  - C) Juha Kankkunen
  - D) Ari Vatanen
6. Which rally did the Peugeot 405 T16 famously win?
  - A) Monte Carlo Rally
  - B) Dakar Rally
  - C) Rally Finland
  - D) Rallye Deutschland
7. What was a key feature of the Peugeot 205 T16 that made it stand out in rallying?
  - A) Turbocharged engine
  - B) All-wheel drive
  - C) Mid-engine layout
  - D) All of the above
8. During Peugeot's return to the Dakar Rally in 2015 with the Peugeot 2008 DKR, what unique drivetrain layout did they choose that set them apart from many competitors?
  - A) Front-wheel drive
  - B) Rear-wheel drive
  - C) All-wheel drive
  - D) Four-wheel steering
9. What is the iconic colour scheme of Peugeot's rally cars in the Group B era?
  - A) Red and black
  - B) Blue and white
  - C) Yellow and green
  - D) White with red, yellow, and blue stripes
10. Which Peugeot model was used in the famous 1988 Pikes Peak International Hill Climb victory?
  - A) Peugeot 306 Maxi
  - B) Peugeot 405 T16
  - C) Peugeot 207 S2000
  - D) Peugeot 508 RXH

## NZ ROAD SAFETY RANKING

Perhaps surprisingly, given its low population of 5.3 million people, high-quality road infrastructure and strict law enforcement, New Zealand is ranked the seventh most dangerous country for road safety.

It reported 353 deaths on its roads in 2019 or 72 per million population, which was a substantial drop from 77 in 2018. Analysis shows that New Zealand's rural roads are the deadliest with 73% of deaths in 2019, while speed was a factor in 73 of the fatal crashes. In December 2019, the government released Road to Zero, a national road safety strategy for 2020-30, which sets a target of a 40% reduction in death and serious injuries.

The six countries with worse death numbers are 1 USA, 2 Romania, 3 Bulgaria, 4 Serbia, 5 Poland & 6 Croatia.

## BELIEVE IT OR NOT

by Peter Wilson  
in TORQUE

The historic car movement survey run by the Mercurious Group consultants on behalf of the Australian Motor Heritage Foundation has concluded that the enthusiastic owners of historic vehicles spend on average \$10,240 a vehicle each year. Their 970,009 vehicles form 4.4% of Australia's total vehicle fleet.

A total of 6,396 owners from 834 motoring clubs responded to the national survey – many more than expected. [They would have been happy with 1000 replies.] Between them, these responders own 19,200 classic and heritage vehicles of all types – cars, vans, utes, trucks, camper vans, buses and motorcycles.

## CITROEN IN AUSTRALIA

By Peter Wilson

Here are a few Extracts from Peter Wilson's article in the September issue of TORQUE

In two months the guillotine falls on sales of Peugeot's stablemate Citroen, an iconic brand that began as a small car brand which helped popularise motoring and speed the local transition from horse transport after World War One.

It goes as an iconic now premium brand with a history of outstanding, sometimes quirky vehicles as the motor trade tries to meet the preferences for SUVs and cope with the transition to electric vehicles.

Australian traders were at the Paris Motor Show in 1919 when André Citroen showed his first model A and signed an agency with Herbert Curtis from Melbourne's Preston Motors on the spot...

In the 1920s Preston Motors were selling up to 300 cars a month, saying they were much cheaper to run than horses which needed daily grooming and feeding, while the Citroen were £100 cheaper to buy, lighter and more economical than Model T Ford.

Citroen sales (in Australia) have fallen from a peak of 3,803 in 2007 to 400 in 2019 when it was losing its van sales to Peugeot, a recent best of 296 in 2020 is down to 87 to date this year...

Both brands accumulated unsold stock that is now being discounted and with the prospect of possible further low volumes, the hard decision was made to concentrate efforts on Peugeot...

## ELECTRIFYING PEUGEOTS

Announced in 2023 by Peugeot is a new, potentially cheaper mild-hybrid system developed in a joint venture between Peugeot owner Stellantis and Punch Powertrain. The French company is hedging its bets with the MHEV system, targeting buyers who find plug-ins and BEVs inconvenient and expensive.

The 3008 PHEV currently sold in Australia has dual electric traction motors as well as a petrol engine delivering sporty performance and a claimed 60km (WTLP) of all-electric driving range via a 13.2kWh lithium-ion battery pack.

The mid-size SUV is powered by an 81kW electric motor on the front axle and an 83kW electric motor at the rear. The dual electric motors work in conjunction with a 147kW 1.6-litre PureTech turbocharged petrol engine to provide a total system output of 222kW/520Nm.

It was the first to introduce an all-wheel-drive system to the French manufacturer's medium SUV range through an 'Electric Rear Axle Drive' (e-RAD), while drive to the front axle is delivered via a petrol-electric combination.

The sleek 508 GT Fastback PHEV sold here delivers a total system output of 165kW/360Nm through the combination of a 133kW, 1.6-litre PureTech turbo-petrol engine and a single 81kW electric motor.

Drive is to the front wheels only with electric power provided by an 11.8kWh lithium-ion battery pack that can give up to 55km (WLTP) of all-electric driving range.

Peugeot says new 'mild' hybrid technology will soon start filtering through its line-up that uses a 48-volt MHEV system. It will first be offered on the Peugeot 3008 and 5008 models before being extended to other vehicles in the line-up. Peugeot says MHEV technology will complement the already extensive family of electrified engines, including plug-in hybrid, pure electric and fuel cell variants.

The hybrid set-up comprises a new generation 'PureTech' 1.2-litre, 100kW/230Nm three-cylinder turbocharged petrol engine coupled with a new six-speed dual-clutch electrified gearbox that incorporates a compact electric motor within its casing. The engine operates on the delayed timing Miller Cycle, uses a variable geometry turbo, and features a chain cam drive for longevity.

The MHEV utilises a 21kW/55Nm permanent magnet synchronous electric motor capable of propelling the vehicle on 100 per cent electricity for low torque requirements as well as assisting the combustion engine to reduce fuel consumption.

During deceleration, the engine acts as a generator to recharge the hybrid system's 48V battery. It also provides the main start for the combustion engine with the assistance of a belt-starter. For convenience, the vehicle's battery recharges while driving. The technology provides extra torque at low engine speeds and Peugeot says it can reduce fuel consumption by up to 15 per cent while also decreasing CO2 emissions.

Using this new MHEV system the mid-size 3008 SUV is said to be capable of operating more than 50 per cent of the time in zero-emission electric mode. The i-Cockpit handset can be used to engage different modes, as well as informing the driver of the vehicle's hybrid status.

The French manufacturer says the MHEV system is particularly efficient in an urban driving environment when the EV mode is employed most of the time. When travelling at low speeds, the electric engine provides 9kW of additional power with a one-off boost function to compensate for turbo lag. At speeds of more than 145km/h, the combustion engine shuts off when the driver releases the accelerator pedal either at a steady speed or when slowing down.

Most of the 48V MHEV system components are located under the car's bonnet, with the battery positioned under the front passenger floor.

The MHEV powertrain went into production in the second quarter of 2023 and will eventually be available across much of Peugeot's current range of passenger vehicles. Initially it will replace the non-hybrid powertrain in the 3008 and larger 5008. The MHEV system is expected to also become available across other Stellantis brands, including Opel/Vauxhall, DS and Citroen.

The EV model, which will rival the likes of the Hyundai Ioniq 5 and Tesla Model Y, is yet to be specified or priced for the local market but will likely feature most of the equipment found in its European counterparts.

Joining other Peugeot electric models – including the E-2008 and E-Partner – the E-3008 is offered with a choice of three powertrains in its home market. These include single axle - and all-wheel drive variants fitted with a 73kWh battery pack, and delivering outputs of 157kW and 240kW respectively, and a long range 98kWh model with a single 170kW motor.

Driving range maximums are listed at up to 700km on the WLTP cycle.

Peugeot says all three E-3008 models may be charged at a rate of up to

160kW when connected to a DC fast charger or at 11kW via an AC wall plug.

The model is the first Peugeot to ride on Stellantis' new SLTA Medium platform and as such can deliver a more spacious cabin and cargo area than may seem apparent. Peugeot quotes a 520-litre cargo area with the rear seats in place, the same as the E-3008's petrol-powered sibling.

Against the tape, the Peugeot E-3008 measures 4540mm in length, 1890mm in width, and 1640mm in height making it 100mm longer, 50mm wider and 20mm taller than the outgoing model. The mid-sized SUV rides on a 2730mm wheelbase, or 55mm longer than the current offering.

Debuted in September last year, the Peugeot E-3008 boasts safety technologies including AEB with cyclist and pedestrian detection, adaptive cruise control, blind-spot monitoring, front and rear parking sensors, lane following and lane keeping assist, traffic sign recognition, and 360-degree camera technology.

Features include Matrix LED headlights, LED tail-lights, a choice of 19- and 20-inch alloys, keyless entry and ignition, Peugeot's i-Cockpit instrumentation array with 10.0- and 21.0-inch display screen options, a heated steering wheel, touch-sensitive steering wheel controls, cloth or synthetic leather upholstery options, and heated/ventilated and massaging front seats.

Infotainment highlights include native satellite navigation, wireless Apple CarPlay and Android Auto connectivity, voice control and a 10-speaker Focal premium audio system.

Peugeot also plans to release a 48V mild-hybrid variant of the model in NZ alongside the all-electric E-5008, followed by a plug-in hybrid in 2025.

From GoAuto.co.au and others



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## TOO GOOD TO BE TRUE?

Researchers say they've built and tested a 'structural battery' that packs a device or EV's chassis with energy, saving a ton of weight. It could unlock smartphones as thin as credit cards, laptops at half the weight and a 70% boost to EV range.

EVs rely heavily – pun intended – on large lithium-ion batteries to cover long distances. Researchers at Chalmers University of Technology wondered if they could build a battery that doubles as the load-bearing material holding the car together, and shed some weight.

As part of their work on what they call 'massless energy storage,' the research team in Sweden has developed a battery made of a carbon fibre composite. It promises similar stiffness to aluminium, while also being capable of storing a fair bit of energy – enough to be used commercially.

Carbon fibre, of course, is incredibly light, strong, and rigid – and thus a popular, if expensive, structural and exterior material in performance cars – as well as a critical material in aerospace applications, in which every gram counts.

But it can also serve as an effective electrode material when electrochemically engineered for that purpose. The Chalmers team, led by Professor Leif Asp, has been working on this for years, having initially published a study demonstrating this property of carbon fibre with a specific arrangement of crystals in 2018.

The new battery design has an energy density of 30 Wh/kg, which is not great by automotive standards. For

reference, the 53 kWh battery pack in a Hyundai Ioniq 6 is rated at 153 Wh/kg

But that's the energy density of a battery pack sitting in a box; you've got to add on the weight of the entire car's structural chassis to make it a fair comparison, as this carbon fibre structural battery is designed to replace the whole frame, shaving substantial weight off the overall vehicle, while freeing up space to boot...

Plus, this battery uses a semi-solid electrolyte instead of a liquid one to move lithium ions between its terminals. As such, it's less flammable, and safer to use – although the team admits there's still some issues getting ions through the electrolyte quickly enough for high-power applications. More research is needed there.

Yes, this is another lab battery, and as such, these next-gen EVs and devices are still some years away – but mass production and commercialization is very much in the works...

Source: EurekAlert

## RECYCLING BATTERIES

Let's face it: EVs have some serious limitations, particularly when it comes to their batteries, and it's good to see that lots of manufacturers are investing heavily in the technology to make longer-range batteries and reducing charging times.

However, an often overlooked aspect of EVs involves the circular economy. While gasoline-powered vehicles can last decades upon decades with proper care and maintenance, the same, unfortunately, can't be said about EVs, whose batteries alone tend to have a shelf life a fraction that of internal

combustion engines. And of course, the most expensive component of most EVs is indeed the battery.

Battery recycling has been around for quite some time now, but the process of doing so has always been extremely energy-dense, and as a result, very expensive. Conventional recycling methods usually involve breaking down the batteries into raw materials, in other words, down to the very elements used to produce them....

A team at Rice University, in Houston, Texas, are pioneering a new method to extract purified active materials from battery waste. Their findings just might revolutionize EV batteries, not only by reducing the waste associated with depleted EV batteries but also with the overall lowering of costs...

The team proposes that magnetic properties could handle the separation and purification of depleted batteries. It makes use of a method called solvent-free flash Joule heating, or FJH. The process involves "passing a current through a moderately resistive material to rapidly heat and transform it into other substances." Did you get it? Me neither.

Going a little deeper, the researchers discovered that the rapid heating of battery waste to 2,500 Kelvin created unique features with magnetic shells and stable core structures, resulting in easier separation and efficient purification. Even better still, cobalt, which is a raw material typically used in EV batteries, unexpectedly showed magnetism, allowing for easy separation and eventual reuse in new batteries.

According to the researchers, FJH resulted in an amazingly high battery metal recovery yield of 98%...

Source: Rice University

## STELLANTIS PARTNER WITH LEAPMOTOR

The Stellantis group has created a partnership with Chinese manufacturer Leapmotor. This joint venture begins the import of low-cost electric cars to the European continent.

Stellantis has chosen Milan to present the first two Leapmotor models imported into Europe. This Chinese manufacturer and the multinational automobile company have created a joint venture owned 51% by Stellantis and 49% by Leapmotor. It has been named "Leapmotor International". It is intended for the distribution and development of low-cost 100% electric cars worldwide (excluding China).

The first two models are city car, the T03 and an SUV, the C10. The T03 is a compact electric vehicle with 95 hp and a range of 265km (combined WLTP standard). Its maximum speed is 130km/h. The C10 is a 4.70m car with 218 hp. It has a range of 420km (combined WLTP standard). Leapmotor plans to have 350 points of sale in Europe by 2025. The T03 will be sold at around €19,000 and the C10 from €37,500, excluding temporary discounts.

Source: Stellantis

PS Leapmotor is a very new carmaker founded in 2015 by electrical engineer Zhu Jiangming, with a focus on self-produced components and technology (60% in the C10). Stellantis also has a 21% stake in this parent company. Leapmotor International is starting an expansion through 200 points of sale in Europe, rising to 350 worldwide with the Middle East and Africa, South America, India and Asia Pacific – including NZ where it's being handled by Auto Distributors. Sales start in Jan 2025

## SOLAR- POWERED CAR LAUNCHED

Aptera Motors has launched the world's first self-charging car, which uses solar energy and is attracting the attention of thousands of drivers and enthusiasts.

Although it can only travel about 64 kilometers a day on solar energy, many are excited about saving time and money on battery charging.

The model, resembling a small aircraft and weighing 65% less than other electric vehicles, can travel up to approximately 1600 kilometers on a single charge, requiring only 30% of the energy used by other EVs.

At an event in San Francisco, Aptera showcased its innovative three-wheeled car, which features Lamborghini-style doors. The company has already received 48,000 reservations, with 500 drivers located in the city.

Set to launch in the second quarter of next year, the car will be priced at \$35,000, significantly lower than the average price of \$56,000 for electric vehicles.

Source: The Sun

## PANASONIC PROMISES

Panasonic has announced it is ready to begin mass production on its long-awaited 4680 lithium-ion battery cells, specifically designed to boost range, power, charging and efficiency in electric vehicles, while also reducing cost.

Conventional EV packs are typically built around stacks of 2170 cells – 21 mm in diameter, 70 mm in length (0.83 x 2.8 inches). The 4680 cells, as the name suggests, are much fatter and a tad longer at 46 x 80 mm (1.8 x 3.1 inches).

So what's the big deal here? Well, these fatter 4680 cells pack in five times as much energy as their smaller cousins. That doesn't mean you can expect a 500% range boost when you stick them in an EV, but at the system level they do require less supporting material, so they're both lighter and more compact for a given energy capacity.

According to EV Lithium, they should also be able to handle higher instant power levels, meaning better peak power to the wheels and potentially faster charging. They should also deal with heat better, meaning improved efficiency as well as higher sustained power outputs. And finally, they should come out cheaper, helping to reduce the green premium facing car buyers looking to go electric.

This is the same size of cell Tesla announced at its 2020 Battery Day, promising around a 16% boost in range, and 600% boost in peak output power at lower cost. After some serious difficulties, these are now in production – indeed, Tesla has recently moved to a second-generation 4680 'Cybercell' design for the Cybertruck that slashes weight from 70 g down to an impressive 49 g (2.5 oz to 1.7 oz).

Panasonic is yet to publish specs on its 4680 batteries, so we can't yet compare them side by side to see how they stack up – but it's gutted its entire 60,907-square-meter (655,600-sq-ft) factory in Wakayama, Japan and re-fitted it exclusively for 4680 production, which will begin after final evaluations, with as many as 400 staff expected on the lines by March next year.

# EVOLUTION OF THE AUTOMOBILE

**1678** - Ferdinand Verbiest, a Belgian Jesuit missionary to China, made a model steam carriage based on a principle suggestive of the modern turbine, as a toy for the Kangxi Emperor.

**C1748** - a carriage propelled by a large clockwork engine was demonstrated in Paris by the versatile inventor Jacques de Vaucanson.

**1769** – French inventor Nicolas-Joseph Cugnot invented the first automobile – a steam-powered tricycle. It was said to have run for 20 minutes at 2.25 miles (3.6 km) per hour while carrying four people and to have recuperated sufficient steam power to move again after standing for 20 minutes.

**1784** – James Watt's foreman, William Murdock, ran a model steam carriage on the roads of Cornwall.

**c1800** - Steam buses were running in Paris

**1807** – Swiss inventor Francois Isaac de Rivaz built the first vehicle with an internal combustion engine. It used hydrogen gas as fuel, the valves and ignition were operated by hand, and the timing problem appears to have been difficult.

**1832** – the first electric vehicle

**1876** – Niklaus Otto's steam-driven internal combustion engine.

**1879** - German engineer Karl Benz gets his patent for a petroleum internal combustion engine.

**1885** – Benz's three wheeled *Patent-motorwagen* became the first successful automobile.

**1886** – Gottfried Daimler built the first four-wheeled car.

**1896** – Rudolf Diesel designed the diesel engine.

**1899** - Camille Jenatzy's electric *La Jamais Contente* became the first automobile to exceed 100kmph (60mph)

[At the beginning of the 20th century, 40% of American automobiles were powered by steam, 38% by electricity and 22% by gasoline.]

## ANOTHER HAZARD

Electric vehicles that have been flooded with saltwater are being treated as a potential fire hazard in the wake of Hurricane Helene. Officials are urging those who evacuated and left electric vehicles or golf carts in garages or under buildings to report them if they cannot safely access or move the vehicles.

Saltwater exposure can damage the battery components in electric vehicles, potentially leading to dangerous chemical reactions that could cause the vehicle to catch fire. Emergency responders have advised residents not to move a flooded electric vehicle themselves but instead contact authorities for help.

### PEUGEOTEST ANSWERS

1A	2B	3B	4C	5B
6B	7D	8B	9D	10B

HAVE A LOOK AT THESE....

<https://www.drivencarguide.co.nz/news/leapmotor-evs-and-hybrids-for-nz-new-chinese-brand-with-a-peugeot-connection/>

<https://www.drivelife.co.nz/2024/10/leapmotor-enter-the-nz-market-with-the-c10-suv/#:~:text=T>

## NEW Peugeot 208GT Hybrid

Here are a few comments from the article 'The best of both worlds' in [Drivercarguide.co.nz](http://Drivercarguide.co.nz) by Damien O'Carroll who has previous experience with the 208GT, the 2008 and the electric version. These are now being replaced by the new 208GT Hybrid. He wrote;

"Available in NZ in just a single specification, the hybrid uses the same 1.2 litre, 3-cylinder turbo petrol engine as the pre facelift model, but adds a 48-volt hybrid system to bump things up fractionally in terms of power to 100kW/230Nm.

Keeping the power and torque roughly the same as before (the ICE version had 96kW/230Nm, while the EV had 100kW/260Nm) keeps the driving experience extremely similar, but the lower weight means it is far closer to the previous ICE-only model, which is a very good thing indeed.

The key however, is where the hybrid delivers its torque, which now peaks much lower down in the revs at 1750rpm, making it noticeably more responsive down low than the old petrol model.

Peugeot also says the e-DCS6 dual clutch transmission/48-volt system reduces fuel consumption from 6.3l/100km for the ICE-only model to 4.7 for the hybrid. The 208 is capable of getting down to that claimed figure if you mainly do a lot of urban-driving where, unlike

most 48-volt mild hybrid systems, the car will run in purely electric mode for a surprising amount of time, albeit at very low speeds. Head out onto the open road and that figure will depend dramatically on how you drive it: keep a relaxed approach and it will happily sit in the mid-to-high 5s, but drive it in a way that takes full advantage of its fun handling characteristics and it will start drinking a bit more, with a healthy blend of both seeing our car sitting on 6.2l/100km by the end of our week with it...

...blend of superb ride comfort and sharp handling that was always a Peugeot trademark...brakes are a superbly massive improvement over the full EV model...

...interior largely carries over from the old models with the same quirky driving position that is somewhat polarising and can be difficult for taller drivers... same high quality materials and striking styling.

Unfortunately, the same infotainment system also carries over and still features the same sluggish touchscreen and confusingly obtuse menus.

Overall though, the 208GT Hybrid very much represents a 'best of both worlds' approach, combining the previous ICE model's delightful handling with the added fuel-miser benefits of electrification. While the price has crept up at \$45,990 the 208 still represents decent value for money by balancing out the fact it is both more expensive and not as frugal as a Toyota Yaris with the fact that it is far more stylish, fun and has a much higher quality interior.



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### EV HISTORY

After several decades when electric vehicles were a real alternative to combustion engine cars, most companies that made EVs had gone out of business by the 1920s. In the 1930s, there were hardly any new electric passenger cars on offer, although you could still put in a special order for a Detroit Electric, which shipped its last vehicle in 1939.

Around that time, gasoline-powered vehicles exploded in popularity because of the proliferation of electric starter motors that eliminated the need to hand-crank engines, and as a result—not to mention a world

shaken up as it prepared to eventually go to war—EV development stalled out quite a bit.

The story of the electric vehicle is one of fits and starts. The period before and around World War II falls into the former category. But that doesn't mean it wasn't full of fascinating experiments that still feel relevant today.

To learn about The History of Electric Vehicles and see the many ways that EVs have been a part of more than 150 years of automotive history, go to

<https://www.msn.com/en-nz/news/other/this-invention-spelled-the-end-for-evs-first-golden-age/ar-AA1r40FC?ocid>

## FEMALE INVENTORS

Mary Anderson: 1866-1953; windscreen wipers

Mary Anderson was an American real estate developer, rancher and viticulturist who first came up with the idea of windscreen wipers while riding in a streetcar in the snow.

She received a patent for the "Windshield Wiper" in 1903 and tried to sell it to companies, who rejected her invention. By the '50s and '60s, businesses took to the idea, but her patent had expired by then. Inventor Robert Kearns was instead credited.

## JOKE OF THE MONTH

CONFUCIUS DID NOT SAY.

"A lion will not cheat on his wife, but a Tiger Wood!"



**DANGEROUS BRIDGES** - Originally built to carry packhorse traffic and foot passengers, ancient clapper bridges are quite a rare sighting, with less than 50 recorded in the UK. This one – which comprises 17 flat sandstone slabs across the River Barle in Exmoor – is thought to be the longest, and the oldest. Today, the 180-foot (55m) medieval crossing is still in use.



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