

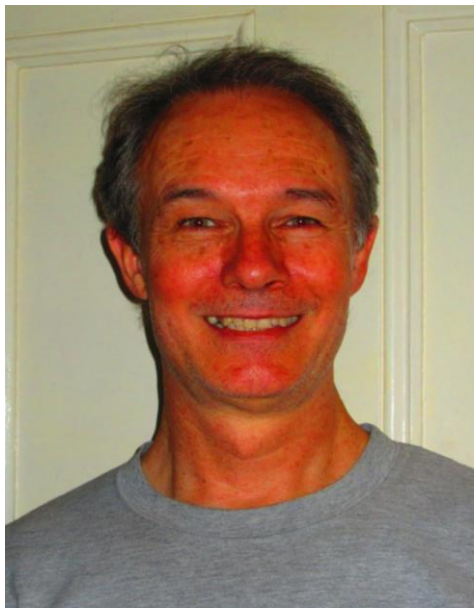


Peugeot Car Club (Auckland)

# Peugeotex<sup>©</sup>



*Volume 35, #10, November 2021*



## CONTENTS November 2021

- 2 President's Ramble
- 3 Coming Events including NavTrial
- 4 World Rallycross Championship
- 5 Jeanette's Jottings
- 6 Book review – CP system – Emissions
- 7 TARGA update - Wanted
- 8 Recycling batteries
- 9 Speedy recharging
- 10 UK parents' wishes
- 11 Ridiculous repairs – Targa Tales
- 15 Road safety; from the history books
- 16 WHEEL TORQUE – Membership
- 16 Hydrogen at Dakar
- 19 Longest placenames – Wales & NZ
- 20 Exam errors –Significant thoughts
- 20 Dangerous roads

Front cover – Alex Grant & Steven Groves in the 2003 Targa  
Above – new member Craig Pye

***Euroline***  
FOR  
**AUDI, VW  
& PEUGEOT**

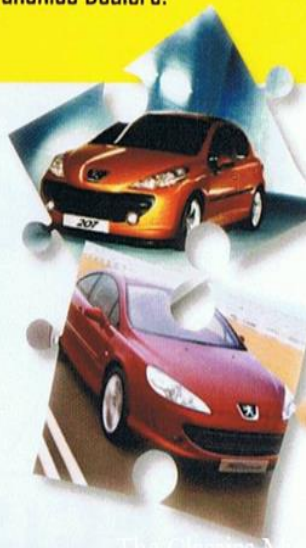
**Parts  
Connection**

SPECIALIST AUTO PARTS NETWORK

New and used parts that would be the envy  
of Many European Franchise Dealers!

Euroline Autoparts are an established specialist Audi, Peugeot and VW dismantler with a history of stocking parts for both NZ new and imported cars. We are a member of The Parts Connection - New Zealand's leading automotive dismantlers group.

Peugeot Car Club Member Special:  
Mention this ad and receive 15% off all Peugeot parts.



60 Firth Street, Drury, South Auckland  
Telephone: 09 294 7635 ■ Free Fax: 0800 492 291  
E-Mail: [info@euroline.co.nz](mailto:info@euroline.co.nz) ■ Website: [www.euroline.co.nz](http://www.euroline.co.nz)

11 Railside Place  
Hamilton



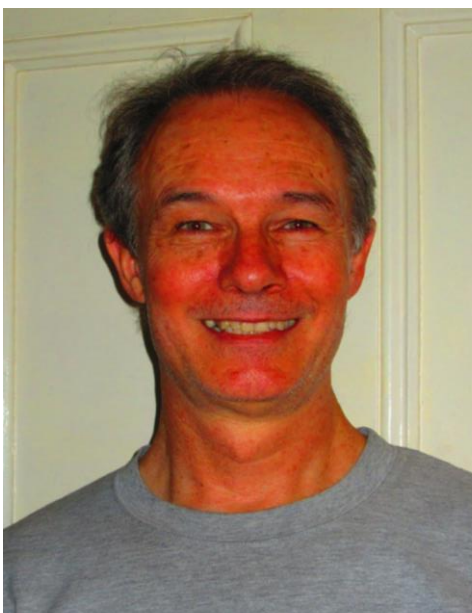


Peugeot Car Club (Auckland)

# Peugeototex



*Volume 35, #10, November 2021*



## CONTENTS November 2021

- 2 President's Ramble
- 3 Coming Events including NavTrial
- 4 World Rallycross Championship
- 5 Jeanette's Jottings
- 6 Book review – CP system – Emissions
- 7 TARGA update - Wanted
- 8 Recycling batteries
- 9 Speedy recharging
- 10 UK parents' wishes
- 11 Ridiculous repairs – Targa Tales
- 15 Road safety; from the history books
- 16 WHEEL TORQUE – Membership
- 16 Hydrogen at Dakar
- 19 Longest placenames – Wales & NZ
- 20 Exam errors –Significant thoughts
- 20 Dangerous roads

Front cover – Alex Grant & Steven Groves in the 2003 Targa  
Above – new member Craig Pye

***Euroline***  
FOR  
**AUDI, VW  
& PEUGEOT**

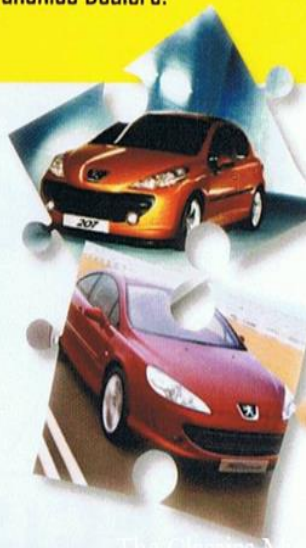
**Parts  
Connection**

SPECIALIST AUTO PARTS NETWORK

New and used parts that would be the envy  
of Many European Franchise Dealers!

Euroline Autoparts are an established specialist Audi, Peugeot and VW dismantler with a history of stocking parts for both NZ new and imported cars. We are a member of The Parts Connection - New Zealand's leading automotive dismantlers group.

Peugeot Car Club Member Special:  
Mention this ad and receive 15% off all Peugeot parts.



60 Firth Street, Drury, South Auckland  
Telephone: 09 294 7635 ■ Free Fax: 0800 492 291  
E-Mail: [info@euroline.co.nz](mailto:info@euroline.co.nz) ■ Website: [www.euroline.co.nz](http://www.euroline.co.nz)

11 Railside Place  
Hamilton

**Peugeot Car Club (Ak) Inc**  
**P O Box 29002**  
**EPSOM, Ak 1023**

**Patrons**

Don Hadfield, Ray Williams,

**President**

Brent Druskovich, 09 638 9421  
brentdruskovich@gmail.com

**Vice-president**

John Cooney, 021 686 191.  
coanna@xtra.co.nz

**Secretary**

Jeanette Grant, 09 638 8566  
jeanette\_grant@hotmail.com

**Membership Secretary**

Soo Land Wong, 09 625 5189  
sojewong@gmail.com

**Treasurer**

Steve Cornwall, 09 402 5006  
jensteve@xtra.co.nz

**Webmaster**

Kevin Hardie, 09 817 7033  
kevin@azorah.co.nz

**Committee**

John Grant, 09 638 8566  
jeanette\_grant@hotmail.com  
Peter Hagglund, 09 280 5737  
haggy251@gmail.com

**Immediate Past President**

Greg Winkley, 09 483 4023  
gregwinkley@hotmail.com

**Technical Officers**

John Grant, 09 638 8566  
Dennis Lowe, 09 267 6461

**Club Shop**

Brent Druskovich - 09 638 9421

**Peugeotex Layout**

Jeanette Grant, 09 638 8566  
jeanette\_grant@hotmail.com

**Printed by CopiesPlus**

www.copiesplus.co.nz

## COMING EVENTS

**peugeotclub.org.nz**

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

**November 21 – Tricolore Trophy  
Navigation Trial**  
- Covid permitting

### THOUGHT FOR THE MONTH

**If everything seems to be going well, you have  
obviously overlooked something.**



**P O BOX 29002  
Epsom  
Auckland 1023**

Peugeotex is the monthly magazine of the  
Peugeot Car Club (Ak) Inc. The Club accepts no  
responsibility for any views expressed in it.

*Peugeotex*

## PRESIDENT'S RAMBLE

Procrastination. It's a big word isn't it, 5 syllables and 15 letters and that is exactly what has got me here tonight, 12.15am writing this for you to read. Should have done this hours ago. Only 6 and  $\frac{3}{4}$  hours and my Saturday will start like any other, listening to Country Life on Radio New Zealand National. A highlight of my week!

The committee hasn't met for months now, we have communicated little, organised even less and just got on with our lives. This at least is in print, the last two magazines being email versions. But life goes on, I have managed, as I do most years to get my Christmas tree up and decorated and my tomato plants in over Labour Weekend. Though it was a bit of an unusual event. Normally I go to Kings Plant Barn, and take a great deal of delight in selecting my tomatoes and a small assortment of other veges, a few potted colour etc. This year I got (actually Mandy ordered) a few assorted veges and potted colour on line, picked up from my usual branch at Orakei, but no tomatoes. Then began the great tomato hunt, all over the interweb, harder to find than rocking horse poo! Eventually discovered a good stock at Mitre 10, easy to order, good price and when I went to pick them up good sized and condition plants. Assuming they fruit well I think I might go back next year. The pandemic and no in store shopping might have taught this old dog a new shopping trick and gained Mitre 10 a new customer; just hope I can select them next year.

In the meantime in Peugeot owners' news, Don Howarth picked up a free 205CTI from Waiheke. Unfortunately it appears it may have been free for a good reason. Also Andrew Corbett has sold his beautiful 504 that graced our cover a few months back, sold to Kaikoura. He has however picked up an RCZ. He reports that he is underwhelmed by Turners Car Auctions and their ability in car detailing prior to selling. It would appear making TV adverts is their strong point!

Today – well actually yesterday given it's after midnight – I returned to a shopping mall for the first time in a long time, purchasing a new pair of shoes from New Balance at Dressmart. I was very surprised, after all the hype I have heard on the radio, to find the mall poorly patronised, though Puma and Adidas still managed to have people queued outside their stores in an otherwise close to empty mall.

I have even managed to escape Auckland, even if only briefly, and no I wasn't hiding in the boot of a car with the lingering smell of smuggled KFC. I made it into the Waikato, to Tuakau, and had morning coffee and biscuit next to the river and bridge. It was nice to be in the Waikato Region. It really did feel like I had left Auckland. That much is true, Tuakau being in the Waikato District, however still on the Auckland side of the roadblocks, I do wonder about what those people who pay Waikato Rates but are on the Auckland side of border control think!

Anyway, catch you later, hope you enjoy the magazine,

*Brent*

(time now 12.37am, a 22 minute job to have these thoughts and type them down in case you wondered)

## COMING EVENTS

<p><b>November 21</b> <b>Covid</b> <b>permitting</b></p> <p><b>[As notified</b> <b>earlier by</b> <b>email]</b></p>	<p><b>Tricolour Trophy Navigation Trial –</b></p> <p>Following the announcement that Auckland is to go to Covid Alert Level 3.2 on the 9th, please read carefully this notice for the Tricolour Trophy run on Sunday 21st.</p> <p>Under Alert Level 3.2 we are permitted outdoor gatherings of up to 25 people, so <b>numbers will be limited to that and it will be necessary to book, on a first in first served basis.</b></p> <p><b>Meet 10. am at Soljans' Winery, on the main highway / SH16 approximately 2 1/2 Ks from the end of the NW Motorway</b></p> <p><b>Travel following Motorogaine instructions, to end at Fishermans Lodge, Shelly Beach on the South Kaipara Head peninsula for an outdoor lunch @ \$40/head.</b></p> <p><b>Indicative menu:</b></p> <p>Main: Indian style Chicken Schnitzel with zesty salsa and fresh summer salad / Pan Fried Snapper with kumara puree &amp; Thai salad / Thai yellow fish curry with fragrant creamy coconut sauce in soft white rice.</p> <p>Desert: Rich silky handcrafted cheesecake with passionfruit or butterscotch glaze / Warm Black Doris plum sweet shortcake with vanilla icecream.</p> <p>Or</p> <p>Main: Sharing platters with a selection of fresh smoked salmon, cured meats, a range of cheeses, gourmet crackers and bread, all nestled amongst slices of avocado, capers, pickled cucumber, tomatoes and much more.</p> <p>Desert: Rich silky handcrafted cheesecake with passionfruit or butterscotch glaze / Warm black doris plum sweet shortcake with vanilla icecream.</p> <p><b>Book with Kevin Beeby, 0272 453 400, kevinbeeby2@gmail.com</b></p> <p><b>BOOK EARLY</b> as we anticipate a high level of interest after such a long period of lock-down.</p>
---	---



# MotorWorks

Unit A, 19 Holmes Rd, Manurewa, Auckland 2102

ph 09 914 1590 - 0508 762343

[www.euromotorworks.co.nz](http://www.euromotorworks.co.nz)

[sales@euromotorworks.co.nz](mailto:sales@euromotorworks.co.nz)

Full mechanical repairs on all makes and models.  
Specialist repairer of Citroen-Peugeot-Renault.

## WORLD RALLYCROSS CHAMPIONSHIP Will a Peugeot win in 2021?

2021 is the last World Rallycross season running combustion engines before a move to electric rallycross, and either one of Swedish brothers, Timmy and Kevin Hansen, could snare the title in their Peugeot 208 WRX supercars.

With seven out of nine events completed, Timmy Hansen leads the championship table on 178 points, with his brother, Kevin in third

place on 159 points. Another Swede, Johan Kristoffersson, driving an Audi S1, is in second place on 161 points, and Niclas Grönholm (son of legendary Finnish rally driver, Marcus Grönholm) is close behind the leaders on 149 points.

While Timmy Hansen, the 2019 winner, would have to be favoured to win again in 2021, he will be hard pressed by three-times winner (2017, 2018 and 2020), Kristoffersson.

The championship will be decided at next month's Nürburgring double-header season finale (27-28 November).

For further details and updates see:  
[www.fiaworldrallycross.com](http://www.fiaworldrallycross.com)



## JEANETTE'S JOTTINGS

There is archaeological evidence of tartan cloth being worn in Scotland as early as the fourth century CE, and it remained part of the everyday garb of the Highlander for hundreds of years.

The first roller skate appears in the 1825 issue of the *Mechanics' Magazine*. It is a single skate with 6 inch roller heels and is highly praised as a convenient means of making short journeys. This would not have been possible without the improved road surfaces begun by Telford and MacAdam.

Pest control authorities in a New York market found that rats were collaborating to steal eggs without breaking them. One rat would embrace an egg with all four legs and roll onto its back. A second rat would then drag it by its tail to their burrow.

A researcher studying household cleanliness, found that often the toilet seat was the cleanest place with the kitchen sink being the dirtiest area. Kitchen cloths are excellent at spreading germs from one surface to another.

A Florida student's assignment found the alarming fact that in 70% of the fast food restaurants she tested, the water in their toilets was cleaner than that in the ice they served with drinks.

Bed mites were not discovered until 1965.

After the Erie Canal was opened in 1825, shipping costs from Buffalo to NY dropped from \$120 a ton to \$6 a ton and shipping time was cut from three weeks to one.

In the 19<sup>th</sup> century, buying bread took 80% of the poorer peoples' income.

In 1851, 1/23 of all young women in London (aged between 15 to 25) were servants & 1/3 were prostitutes.

Icecream cones were invented at the St. Louis World's Fair, in Missouri, in 1904, when Ernest Hamwi decided to roll up some zalabia, which are crisp, waffle-like pastries, to help out a neighbouring ice cream vendor who ran out of bowls.

*Brandy was invented by the Dutch as a cheap and practical way for 16th century tradesman to transport wine. They evaporated liquid out of the alcohol so they could fit more in cargo and pay less tax. It was called brandewijn, which means burnt wine, and stored in wooden casks. When it was opened at the other end, it had a whole new aroma, colour and taste.*

Captain Cook was more than just an explorer. In the days when ships' crews routinely died of scurvy, his survived. Why? He fed them on sauerkraut. This was before the navy discovered the value of limes, giving the RN the nickname of 'limeys'.

In 2004, the most ancient wooden staircase in the world was found in a Bronze Age salt mine near Hallstadt in Austria. It dates from c 3000 years ago.

Early wallpaper was often toxic as the paints used to colour them contained such things as arsenic, lead and antimony. A "change of air" for a convalescent often worked because they were removed from a poisoned room.

## BOOK REVIEW 'At Home' by Bill Bryson

If you have ever wondered where I get some of the odd facts in my 'Jottings', well they come at random from many different sources. However, I would like to recommend one particularly fascinating book.

Among Bill Bryson's writings is "AT HOME; a short history of private life". It is available from the library and has nearly 700 pages about our homes, their characteristics, evolution and dangers. Not the sort of book you read straight through. Rather one to dip into a chapter at a time and learn about the dangers of staircases, the origin of electric lighting, the discovery of germs etc. It is amazing what ridiculous things people have believed and done in the past. I wonder what verdict the future will have on our current attitudes.

## COLLECTIVE PERCEPTION technology

While there are now systems that allow cars to see pedestrians or vehicles which their drivers may not notice, such setups typically still can't detect hazards that aren't in direct line of sight. A new technology, however, uses other vehicles and roadside cameras to do that job.

The experimental "collective perception" (CP) system is being developed via a collaboration between the University of Sydney and Australian tech company Cohda Wireless, funded by Australia's iMOVE Cooperative Research Centre. It incorporates both vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications.

As a car utilizing the technology approaches an intersection, it receives data transmitted from vehicles ahead of it (which

are travelling in all directions), and from camera/LiDAR-equipped roadside ITS (intelligent transportation systems) stations.

If one of those vehicles or stations "sees" a vehicle or pedestrian which is blocked from the approaching car's view – and that is potentially on a collision course with it – the approaching car's driver is alerted via an X-ray-style display that shows the location of the hidden danger. If the driver can't react in time, their vehicle's collision avoidance system will automatically apply the brakes.

In controlled field tests conducted so far, the system was successfully able detect intersecting pedestrians that were hidden by a building, several seconds before an approaching car's onboard sensors detected them. And while intersections are provided as an example of where the CP technology would be most useful, it could be utilized along the entire length of city streets, alerting drivers to things like jaywalkers stepping out from between parked cars.

"This is a game changer for both human-operated and autonomous vehicles which we hope will substantially improve the efficiency and safety of road transportation," says Prof. Eduardo Nebot, from Sydney's Australian Centre for Field Robotics.

Source: Story Inception via EurekAlert

## EMISSIONS

So far I have not found any update on the charges the French government is bringing against Peugeot & Citroen among others regarding purported excessive diesel emission between 2009 and 2015.

I did however find the following site which gives the figures for the current models on sale in the UK.

<https://www.nextgreencar.com/emissions/make-model/peugeot/>



Hello Targa Family,

Well after the postponement of Targa NZ we have been looking at what we can do to provide you with some much needed rally activity.

We are very excited to announce the new **AASA Tarmac Rally Championship** will begin in 2022.

It will be a nine round Championship with each day of our planned 2022 events making up a round.

There will be three events.

- **Targa Bambina** (2 Days),
- **Targa NZ 2021** (5 Days with a 2 Day Regional at the end) &
- **Targa South Island** (2 Days)

**Targa Bambina** is scheduled for the 12-13th March.

This is a two-day event based from Hamilton that has a mixture of well-known roads from previous Targa Rotorua events as well as a number of new roads that have not been used in this configuration before.

A total of 260kms special stages distance with only 345kms of touring making a total of 605kms.

This means that we can start a little later and finish a little earlier than we would normally so you can work your way back into tarmac rallying given that it will have been nearly a year since being behind the wheel.

**Targa NZ 2021** is scheduled for the 25-29th May.

This is the five-day event that was planned for October 2021 but had to be

postponed. It will start in New Plymouth for the first three days then move to Whanganui (where the two-day regional event will start) and then finish in Havelock North.

Due to less daylight hours we have made the decision to remove the last stage from day 1 (Tarata) and the last stage from day 3 (Bushy Park) as well as the Motere stage from day 5, otherwise the event is as plotted, a total stage distance of 750kms and only 1.250kms of touring making a total of 2.000kms.

**Targa South Island** is scheduled for the 22-23rd October.

This is a two-day event based in Nelson and surrounding districts. As you will appreciate given that we are still in a lockdown in Auckland I have not been able to get to plot this event yet but as soon as we can travel I will be on the road.

Event entry will be held at 2021 pricing and will be up on the website by the end of this week along with the other relevant information relating to the Championship.

Corner to Crest notes will be the official supplier to all URG events in 2022 and as an introductory offer they will be supplying notes at no charge for the initial 2022 Targa Bambina event.

We hope this announcement has bought a ray of sunshine to what has been a rather dull period.

*Peter Martin* - Managing Director

## WANTED

205GTi in good shape – preferably with the 1.9 litre engine.

Contact Craig Pye  
ph 021 685 129

craig@fusionarc.co.nz

## RECYCLING BATTERIES

The increasing popularity of electric vehicles is undoubtedly a good thing for the planet, but there is a problem mounting in the background as more and more take to the road. The lithium-ion batteries used in EVs don't last forever, and a massive influx of depleted units in the coming decade will dwarf our current capacity to recycle them. Scientists have made a breakthrough that could give these efforts a boost, demonstrating how a flotation tank can be used to easily separate some of the precious battery materials for re-use.

The study, which was led by scientists at Michigan Technological University (MUT) as part of the ReCell advanced battery recycling centre, seeks to make use of a technique commonly used in the mining industry to separate and purify ores. Called froth flotation, this involves placing materials in a flotation tank and seeing them separate based on whether they repel water and float, or absorb water and sink.

But this approach doesn't easily translate to the world of end-of-life lithium batteries, because the materials that form the cathode component, such as the commonly used lithium nickel manganese cobalt oxide (NMC111) and lithium manganese oxide (LMO), generally just sink. The MTU team has devised a solution to this that involves a mild chemical treatment of the water, which makes NMC111 float instead.

"The separation of battery cathode materials occurs primarily in water," co-author and material scientist Jessica Durham explains to New Atlas. "The process does not necessitate the use of large quantities of hazardous chemicals that would be challenging and expensive to get rid of waste."

With the cathode materials separated, the scientists then ran tests to ascertain their electrochemical performance, with the separating process found to only have a negligible impact in this regard. Both maintained high purity levels, of 95 percent or above. This technology was demonstrated in a bench-scale flotation tank processing between 20 and 150 g (0.7 and 5.3 oz.) of cathode material per litre (0.26 gal) of water. Scientists at the Argonne National Laboratory, where the ReCell team is headquartered, then scaled it up to a 10-liter (2.6 gal) tank capable of processing more than a kilogram (2.2 lb) of cathode material in an hour.

*"This involved starting with conditions used in the bench-scale tank and optimizing the conditions to selectively separate cathode materials in the flotation column," Durham tells us. "The flotation column is a continuous operation, similar to what is used in industry, where a slurry of materials and water are constantly fed into the system and separated cathodes are collected from froth and tailings overflow streams."*

The breakthrough marks an important step in efforts to efficiently separate these valuable materials, but is just one link in the chain when it comes to the entire recycling process. Materials other than the cathode need to be separated and or recovered too, such as the electrolyte and anode, and all those materials then need to be upcycled into a functional energy storage system. Durham says the ReCell team is tackling each of these steps individually, and the challenge will be stringing them together to form a profitable recycling process.

*"Not only will the recycling process have to be worthwhile, but the upcycled material must be able to be accepted and used by industry for lithium-ion battery recycling to be successful."*

The research was published in the journal Energy Technology.



## SPEEDY RECHARGING

By Nick Lavars

Limiting how long depleted electric vehicles need to be plugged in for will go a long way toward driving their adoption, and bit by bit we are seeing advances that shave valuable minutes off the waiting times. Technology company ABB is making inroads in this area, having just announced what is claimed to be the world's fastest electric vehicle charger, capable of delivering 100 km (62 miles) of range in a matter of minutes.

ABB's new Terra 360 is billed as the most powerful EV charger in the world, and is positioned as a solution for refuelling stations, urban charging stations, retail parking and commercial electric vehicle fleets. Customizable LED lighting strips and an optional 27-inch LCD display guide the user through the charging process and the state of their battery, and counts down the minutes until the charging is complete.

And that might not be many minutes at all, according to ABB. The Terra 360 has a maximum output of 360 kW and the company says it can fully charge an electric car in 15 minutes or less. Or if it's just a top up that's needed while the user stops off for some snacks, the 100 km of extra range can be added through less than three minutes of plug-in time.

The Terra 360 looks much like a typical gasoline pump, with four ports

and five-meter (16 ft.) cables enabling charging of up to four vehicles at once, albeit at a slower 90 kW. How much road users will be able to take advantage of the Terra 360's charging speeds will depend on their vehicle, with not all EVs able to handle this type of power output. As more roll onto the streets in the coming years that could change, and these types of ultra-fast charging solutions could play a huge part in lessening range anxiety and boosting the appeal of electric cars.

There are comparable charging rates on offer out there, including those along the Electrify America EV charging network. ABB is actually providing some of the charging equipment for this infrastructure, which is expected to span 3,500 DC fast-charging outlets across the US by the end of this year, offering charging speeds as high as 350 kW – said to be the fastest on the market currently. For context, the latest generation of Tesla's Superchargers offer peak rates of 250 kW.

"With governments around the world writing public policy that favors electric vehicles and charging networks to combat climate change, the demand for EV charging infrastructure, especially charging stations that are fast, convenient and easy to operate is higher than ever," said Frank Muehlton, President of ABB's E-mobility Division. "The Terra 360, with charging options that fit a variety of needs, is the key to fulfilling that demand and accelerating e-mobility adoption globally."

from 'New Atlas'.

40% Of UK Parents  
Want Their Children  
To Learn To Drive In An EV

Four in every ten UK parents want their children to take their driving lessons in electric vehicles (EVs), according to new research. A survey by French car manufacturer Peugeot follows a record sales month for EVs in the UK, with more than 32,000 electric cars registered in September 2021 alone.

The study of more than 1,200 people found 40 percent of parents would like to see their children learn to drive in an electric car. And 25 percent said their children “regularly” pester them about switching from fossil fuels such as petrol and diesel to zero-emission electric power.

However, the research also found 28 percent of respondents thought learning to drive in an electric car and going on to own one would be more difficult than with a standard petrol- or diesel-powered car.

In light of the survey’s findings, and to “showcase” the experience of learning to drive in electric vehicles, Peugeot provided a class of 10-16-year-olds with a driving lesson at Bedford Autodrome. The French company gave the youngsters dedicated tutorials run by professional drivers, teaching them how to live with and own an electric car.

From there, the children were placed behind the wheel of Peugeot’s e-208

electric hatchback and taught basic manoeuvres including starting, stopping and parking. They were also educated in techniques useful to electric vehicle owners such as conserving range, charging the vehicle and switching between driving modes.

After the children had taken their lesson, they went head-to-head with their parents in an electric car challenge to see who could conserve the most range over a set route. Over six laps of the course, covering more than three miles, the young drivers utilised all their newfound skills to come out on top, conserving twice as many miles as their parents.

Julie David, the managing director of Peugeot UK, said the research showed a desire for EVs among the general public, but added it was important to make youngsters aware of the benefits of EV ownership.

*“Our new research highlights how more people across the UK are seeing the positives of electric vehicles,” she said. “Electric vehicles are becoming increasingly popular, and it is important that future generations are aware of the benefits that come with owning an EV. Our day with the young drivers has demonstrated how accessible electric vehicles can be for anyone thinking about their next car. We hope they enjoyed their time with us and found it to be a useful insight into the world of EVs.”*

By: James Fosseydyke

## RIDICULOUS REPAIRS

I recently discovered the following sites online – and was so amused by some of the “repairs” that I thought you might all like to share them.

<https://heartofcars.com/cars/mechanic-stories/30/?v=2>

<https://www.demilked.com/funny-car-mechanic-stories/>

It reminded me of an incident back in the 1980s when an elderly club member – Brian Glover – brought his 403 along to John complaining that the testing station had refused to give him a WoF. He had serious rust in the chassis rails and could not see why his ‘fix’ – driving a 4x2 inside them – was not considered acceptable.

Don’t fix it, zip it



## TARGA TALES

Once again the Covid pandemic has caused the NZ Targa to be cancelled – so seeing I will not be writing it up, I thought I might include a few Grant family memories from earlier years.

When the Targa – and the Targa Tour - were first introduced into NZ, John and Alex followed it as spectators. This meant that they paid a lesser sum to the actual competitors, had to make their own accommodation arrangements – usually in Bed & Breakfast places - but were given preferential viewing and some access to the course.

They had to get up early and be at the start by 6.30am when the roads were being closed. They were allowed to drive most of the route – in a convoy at legal speeds – just before they were closed for the actual event. Occasionally, if that section had already been closed, they were allowed to speed up. They did not do much actual spectating unless they were lucky enough to find a T junction where they could park out of the way and be able to leave the area by using the uninvolved sideroad.

Lunch was shared with the service crews – usually provided at a local hall or school. These were major fundraising/social events in rural areas. Dinner was a lucky dip. You had to find a local takeaway or restaurant that was still open.

About 20 carloads of petrolheads were involved – among them on this first occasion, John with Don Howarth in his 205 convertible and Alex with Steven Groves in Linda’s Subaru.

The result was that Alex went out and bought a Peugeot 106 and had little difficulty in persuading Steve to be his navigator and John his mechanic.

Here are a few memories of the varied events that followed...

Alex bought a Peugeot 106 which had been used for racing before. He took it to Pukekohe to do a four laps test – but the engine gets worked much harder in laps than on the road. The engine had been previously rebuilt BUT one of the big end caps had been put on back to front which gave it a high spot so it ran one bearing and had to be towed back.

John and Alex pulled it apart at home – found the cause- and as the next event was coming up the following weekend, they got a standard engine from a wreck. This had an iron block while the racing one had been alloy. He used it just for that one weekend and it went reasonably well.

They then pulled the racing engine apart and sent the whole head to CALFORD CAMS in Christchurch to modify the camshaft to give a higher lift and more top-end performance. When they set it up, they found it needed different valve springs with that camshaft so they fitted a set of genuine American racing springs.

In the meantime, they put in a new conrod and new bearings and straightened the crankshaft. When it was reassembled they found that the valves were opening so much wider that they were nicking the pistons. After correcting this, they added a racing clutch, and it was all ready in time for the main Targa in October.

In the meantime, they did the prologue. The shakedown stage went down Ardmore Quarry Rd. There Alex found the clutch was slipping at high revs so when he got home he took the gearbox out and looked for markings. It was obvious that the clutch plate springs were centrifuging out at very high revs and fouling on the flywheel mounting bolts. These attach the flywheel to the crankshaft and on checking with the standard engine, they found that its bolts were slightly thinner – but just as strong. Fitting them instead of the original ones gave just enough clearance to solve the problem.

Alex started on time the next day and the car went very well indeed until the Glen Murray stage where it lifted off the road over

a hump in the road. The engine revs went so high that when it landed the alternator drive belt broke- and the alternator blew apart internally.

Of the 13 Pugs in that event, no-one had a spare alternator – so John bought a couple of batteries, rigged up leads into his 505 so it could charge the batteries – and kept swapping them for each stage. We had to drive with headlights on for safety which of course put an extra drain on the batteries.

Then they got to Taupo, got on the phone and talked to a chap from Euroline (where they had bought the standard engine earlier). That night John drove up to Drury and bought the alternator off that original engine – fitted it and, it has never done it again. He must admit, he has never heard of another alternator blowing up like that.

Up to the Kimbolton lunch stop the next day, the car had been going extremely well. After lunch Alex head left to the start and John headed right to the next service stop at Mansfield. Unfortunately, that road proved to be out of cell-phone range until he was almost there. Poor Alex had broken a valve spring just 100 yards before he reached the start! Luckily there was no other damage but John had to drive all the way back from Mansfield to Kimbolton (c100km) and tow him to a friend's place at Linton Army Base. Luckily John had the standard engine in pieces in the boot so they took the head off and used a mixture of valves and springs from both.

NEXT DAY – the stage ended at the multi-storeyed New Plymouth Municipal carpark. The engine was going well but the clutch was slipping – so they replaced it with a standard clutch and it then gave no trouble until the final stage around the Wellington waterfront – when the one valve spring that hadn't been replaced broke. Luckily it was after the stage finished and at low revs so did no more damage and the car came back to Auckland on a transporter with several other cars. There were many other cars having trouble and crashes - but most were fixed to carry on.

The 505 did 6000km in that week!



## AWHITU

This was a One Day event around Awhitu. Alex was following a Mustang which blew a conrod out the side of the motor and dumped oil all over the road. Alex skidded up a bank and rolled – but luckily they only damaged the roof and one windscreen pillar.

Robbie Francivich had borrowed a Chrysler Valiant from Erceg, a guy who bottled pickles, so one was named Gherkin' and one 'Pickles'. The windows misted up and he reckoned it needed a new clutch so he abandoned it after one stage and the owner took it over and finished well.

The 106 had a factory tuned engine which John wanted to restore to factory standard – but Alex wanted more top-end power. They managed to get it running reliably for the next year with a standard clutch. He rallied it twice and came in the top 30 finishers overall.

## YEAR 3

Alex sold the 106 and replaced it with a 206. (The new owner did not get nearly such good placings as Alex had achieved with it.)

The 206's only real problem was getting rid of the custom brake assistance and anti-lock as they tried to take over which could be very dangerous under competitive conditions. It proved necessary to actually replace the computer to get it to co-operate.

For the next 4-5 years, Alex & Steve enjoyed a reasonably trouble free run. A couple of times when Steve was not available, another friend – Michael (Curator of the Matakoho Museum) filled in for him. They never won their class but were often in the top 20 overall out of 200 cars.

John continued to accompany them as service crew. This involved laying out a tarpaulin at the rear of his 505, anchoring it in place with axle stands, and then spending a peaceful evening. He was once observed lifting the 206's bonnet, saying "*Well the engine's still there*" and going off to dinner.

He would check brakepads, oil levels, tightness of wheel studs and swap tyres around to even up the wear.

However, eventually the law of averages caught up with them and disaster struck at Piopio. After a couple of successful years, the car would not start for the afternoon session. John found it had blown a fuse so he had to disconnect all the wires going to that fuse and reconnect them one at a time until he found the one which caused the trouble. It was a solenoid in the breather system so he just disconnected it and it went OK – so Alex only missed that one stage.

Final disaster came on another One Day Event starting from Wellington. It was a really wet day. Alex was one of only half a dozen along that day. They went after the rest of the full Targa cars had gone through. They had morning tea and lunch at Southward's Museum. John stayed there as the next service stop at Upper Hutt was a long way back. He got a ring from Alex to say

*"We're OK but the car isn't."*

The start of the stage off SH1 was very hilly and winding but further on it flattened out and got quicker. A spectator jumped over a fence and stood in the middle of the road waving him down - just as they were going into a bend. It was pouring with rain so there was no real grip on the road.

They ended up going up a bank to dodge the idiot spectator, rolled down the bank and ended up almost parked alongside the crashed competitor's car he had thought it so necessary to warn them about. The two men in the car had been unable to get out to set up the warning triangle as both had broken legs.

It was a Fiat and should have been well ahead. Tony Quinn was following it and he had stopped and was starting to set out the triangle when Alex arrived.

The 206 suffered serious damage:-

- all the suspension was damaged
- most windows were broken
- the bodywork was so damaged it had to be replaced

However, the engine was OK and the inbuilt safety features meant that Alex and Steve were just shaken up. Steve was actually taken to Wellington Hospital to be checked as

he had an old neck injury from his motorcycle racing years and the impact had made it sore. He was kept under observation until 8pm when Alex extracted him and booked a flight for him back to Auckland.

John saw the car leaving the stage on a flatbed truck. Their trailer was still in Wellington chained to a power-pole. (It was the first time they had ever used one.) John went to the start of the stage to pick Alex up and had a great argument with the officials along the lines of;

*"You can't go in; there's been an accident."*

*"Yes I know. That's why I'm here!"*

John, Alex and his friend fetched the trailer and found the 206 had been left in a paddock by an old marae – facing inwards. They put the trailer in front of the 206. The wheels were jammed hard against the bodywork, but there was a nice new winch on the trailer – which moved the car a whole six inches before it disintegrated. (It was Chinese and advertised as being capable of pulling 4x4s out of the bush. Alex did eventually get a full refund of its cost.)

Instead of just straightforwardly winching the 206 onto the trailer, they ended up using tie-downs and pushing it an inch or two at a time – all in heavy rain.

Luckily it was a tilt trailer so finally when they had got the front wheels on board, they drove car and trailer forward a couple of feet, put the brakes on HARD and the 206 kept moving and slid further onto the trailer where they were able to use the tie-downs to anchor it in place.

They drove to Wellington, stayed the night there with it parked under a tarpaulin and got Steve out of hospital and onto a plane home.

The next day John & Alex started back to Auckland and drove up the west side of Taupo when they found – after going through a floodwater pan – that the trailer was exhibiting negative camber. As soon as they found a wide enough stretch of road they pulled off to investigate and found that the trailer's axle was bending.

They took the Ubolts off the trailer's jockey wheel and a piece of the 206's sump guard, attached it to the axle to reinforce it. They had no welding gear with them. Jacking it up in the middle straightened it slightly but after a short distance found it was bending again so they dropped the trailer off in the carpark of a restaurant and drove c20km to the nearest township – Whakamaru – where they stopped at a service station which was just closing.

Alex had hoped to get a piece of steel from Repco or its equivalents but the proprietor said to take a piece of flat steel he had, put his welding gear in his own ute and followed us back to the carpark to fix it.

Unfortunately, the steel had been used too many times for training purposes and had lost most of its strength so they only risked driving the patched trailer back to Whakamaru where they parked it over an old service pit at the service station – and drove on home to Auckland.

Alex dropped John home in Mt Eden about 1am and went on home. The next day John got a phone call just after lunch to say it was all fixed! Alex had MADE a new axle beam, taken it down in the back of his 406, fitted it and was ready to come back. The garage owner was most impressed.

Alex then bought another 206. He dismantled them both and mix and matched them so he eventually made one good one out of the two – basically with the works of one inside the body-shell of the other.

However, it has only raced once since as there has been a recurring problem with it keeping stopping during an event. It would start again OK but could never finish the course.

Finally, in 2020 he found the cause – an electronic one. He also put in a new diff and now hopes to use it as a track car for Ashton and Dylan to race – when things got going again.

Meanwhile, in 2021 the body is sitting under a cover on our front lawn with the engine in Alex's shed.

## FROM THE HISTORY BOOKS ROAD SAFETY

After the war of 1914-18 the growing volume of mechanised traffic became too much for English roads which had been designed for horse transport. Narrow crooked corners were by-passed by cutting a roadway across the loop and where roads through towns and villages were not suitable for streams of through traffic, the whole place might be by-passed by cutting a main road around and outside it. In the town streets, the safety of the walking public had to be regarded and traffic had to be regulated. Warning signs and traffic signal lights were erected and foot-crossings marked out.

A very important step was the passing of the Road Traffic Act in 1930. Until that date, the speed of road vehicles was supposed to be limited to 20mph under the Motor Car Act of 1903. This ruling became the source of much trouble as faster cars appeared and motorists often disregarded it, which tended to bring the law into ridicule. "Speed-traps" were arranged on roads noted for speeding; a measured section of road was watched by police officers with stop-watches, who timed unsuspecting motorists over this stretch, and had them summonsed to court if they exceeded the speed limit.

The Ministry of Transport was formed in 1919 and made responsible for trunk roads and laying down regulations for other public roads. Asphalt was first laid in Paris in 1838 but little used until 1854. It was laid in Threadneedle St, London in 1869. The steam roller invented by Clarke and Bath in 1863 did much to further MacAdam's work in providing a waterproof & dust-free surface for roads.

When the 1930 act did away with the 1903 one, it introduced third party insurance. Before this came into force, a person might be knocked down and crippled for life by a motorist who could not pay compensation on his own account. Magistrates became very severe with drivers who were not insured.

The Act also appointed Commissioners with authority to grant licences to public passenger vehicles and to authorise a guide to road safety with advice to all users of the road – called the Highway Code. This was not based on threats and penalties but on an appeal to common sense. Road accidents continued to increase, however, so in 1935 a speed limit of 30mph was imposed in built-up areas.

Extracts from '*Wheels on the road*'.

Extracts from  
**WHEEL TORQUE**  
Sept-Oct 2021

A delegation from the FOMC has met the Minister of Transport to discuss

1] Changing classic and vintage vehicles to 12 month WoFs and CoFs. This will be among issues considered in the upcoming major review of road funding.

2] Parade Permits. It was suggested that the police be empowered to issue Parade Permits for heritage commercial and military vehicles which are now seldom on the road because of the compliance costs and inconsistent inspection practices. The Police would just check that brakes, steering etc were safe for the vehicle to be driven at slow speeds in parades.

3] Biofuels. The Minister was already aware that ethanol based biofuels are not a viable alternative fuel for older vehicles.

4] The difficulties involved in applying WoF standards to veteran and vintage vehicles when the owners are usually vastly more knowledgeable than the vehicle testers about how to ensure they are functioning safely. It was submitted that the VCC would be a more appropriate safety check agency than the NZAA or VTNZ testing stations

## MEMBERSHIP

WELCOME to new members  
Andrew & Sally CORBETT of  
Hobsonville  
Craig & Pauline PYE of  
Greenhithe.

HOWEVER - there are still too many members who have neither paid nor positively resigned. If I do not hear from the Treasurer that your subs have arrived, this is the last issue you will get.

PLEASE make sure your name is attached so we know WHO has paid.

## HYDROGEN at DAKAR

French company Gaussin is pushing hard on hydrogen-based long-haul trucking, playing up hydrogen's excellent range figures and quick refuelling times as a benefit over heavy, slow-charging batteries. It's developing a flexible skateboard chassis you can build all sorts of heavy vehicles on top of – and if the final product is as smooth and slick as the Hollywood-grade render video these guys put together, they're sure to do well.

Now, Gaussin's announced it's going to go racing. And if your key goal is to take a truck out and demonstrate both its performance and reliability, there's really no better torture test



than 12 days of hell at the Dakar rally. The 2022 race, like this year's, will be held in Saudi Arabia, around the 500-billion-dollar, ultra-high-tech, future megacity of Neom. No matter, there may be fewer flavours of hell here than in Senegal, but rocks and sand are still a brutal, unrelenting test of man and machine.

Gaussin's truck will not be the first zero-emissions Dakar contender; the Acciona team managed to complete the 2017 Dakar in an all-electric dune buggy running 150 kWh of batteries and a rooftop solar panel. It will, however, be the first time hydrogen will be rolled out, and where Acciona limped across the line in last place due to long charging times, Gaussin will have much less of an excuse.

The H2 Racing Truck, built upon Gaussin's skateboard chassis, will run two 300-kilowatt (402 horsepower) electric motors, a fuel cell capable of generating a continuous 380 kW (510 horsepower), and an 82 kWh buffer battery to handle the full-throttle demands of desert racing.

Will those power levels be enough to draw blood from established campaigners like Kamaz, which has been running a 1,150-horsepower, 13-liter diesel beast? Or indeed Toyota's truck division Hino, which is planning to bring a diesel-electric hybrid making a total of 1,065

horses? Maybe. But it'll have its own "renewable power" category to race in against the battery guys, and it should do well in its class.

Carrying 80 kg (176 lb) of hydrogen, it's expected to have a range around 250 km (155 miles) under race conditions, and will fuel up in about 20 minutes as required. It'll be speed-limited to 140 km/h (87 mph) to meet Dakar regulations, and it'll look spunky, as with all Gaussin's future product line, thanks to a design collaboration with Pininfarina in Italy. Although mind you, Pininfarina's been letting the odd bit of very pedestrian work out the door lately.

The Dakar organization will surely be delighted to have Gaussin on board; it's committed to restricting the entire car and truck categories to "low-emission vehicles" by 2030 and is working to accelerate the transition over the next decade as combustion engines become less relevant.

Source: Gaussin

## FIND ON-LINE PEUGEOT 3008 & 5008

if you want to see/hear about the new Peugeot 3008 and 5008, go to

<https://www.bing.com/videos/search?q=peugeot+news&docid=13970835177640&mid=D4E7430F7B9F46674F5CD4E7430F7B9F46674F5C&view=detail&FORM=VIRE>

# Auto France Ltd



## Peugeot Specialists

**WOF**

**Service and repair  
Restoration**



**David Jones**

Phone: 092784301 / 0210557117

Email: [sales@autofrance.co.nz](mailto:sales@autofrance.co.nz)

Clarks Beach, Auckland

### **Apex Auto Centre**

**Specialise in the Manufacture of Rubber & Braided Hoses**

Oil  
Fuel  
Brake  
Braided  
Powersteering  
Air conditioning  
Brake and fuel pipes and fittings

**Our aim is to have your parts repaired with the  
Quickest turn-around times possible**

**Apex Auto Centre - 66 Killarney Rd - Hamilton 3204  
ph 0800 10 27 39 or 07 8477179**

Email - [parts@apexautocentre.co.nz](mailto:parts@apexautocentre.co.nz)



Llanfairpwllgwyngyll-gogerychwyrndrobwlillantysiliogogogoch, Wales  
This Welsh town had a name so long, it had to be renamed to just Llanfairpwllgwyngyll.

However, it cannot beat our own record placename in Hawkes Bay



## EXAM ERRORS

Monotony means being married to the same person for all your life.

I've said goodbye to my boyhood, now I'm looking forward to my adultery.

Artificial insemination is when the farmer does it to the cow instead of the bull.

A super-saturated solution is one that holds more than it can hold.

Mushrooms always grow in damp places and so they look like umbrellas.

## THREE SIGIFICANT THOUGHTS

- Death is the number 1 killer in the world.
- Life is sexually transmitted.
- Good health is merely the slowest possible rate at which one can die.

Dangerous roads –  
Kishtwar Road, India



iOWN  
INTELLIGENT OWNERSHIP

from \$165/week\*



CLEAN CAR  
STANDARD  
REBATE



## NEW e-208

FOR THOSE AHEAD OF THEIR TIME

Full Electric - 340km range - Rapid charge 80% in 30 min\*\*

0 GRAMS OF CO<sub>2</sub>, 340KM RANGE (WLTP\*\*)

\*Based on a Peugeot e-208, RRP of \$53,990. Offer of \$165 per week over a 4 year term, and a one-off payment of \$8,789.55 (Standard payment + Govt. Subsidy) in week 8. With no deposit required and a final balloon payment (the Guaranteed Future Value) of \$26,995.50. Total mileage of no more than 30,000kms over the term applies. A fixed interest rate of 5.95% p.a. applies. The total loan amount is \$69,682.35. Lending criteria, T&Cs and fees (including a \$262 establishment fee and a \$7.39 PPSR fee) apply. iOWN is provided by Heartland Bank Limited. At the end of the term you can choose to keep the car, by paying the Guaranteed Future Value, trade it, or return it (subject to T&Cs and excess charges). Offer excludes ORC. Limited stock is available for pre-order at participating dealers arriving in Spring 2021. Not available in conjunction with any other offer. Subject to government subsidy (zero emission) of \$8,625 including GST applies and is necessary for week 8 one-off payment, available to one new registration between 1 July to 31 December 2021. \*\*WLTP cycle, 2019 standard, corresponding to 340 km WLTP. Rapid Charge at public ev 100kW charging station.

# SOUTHERN AUTOS

1 Bakerfield, Manukau Phone 09-884 3020

Find us online [SouthernAutos.co.nz](https://SouthernAutos.co.nz)



[facebook.com/southernautosaukland](https://facebook.com/southernautosaukland)



# NEW PEUGEOT SUV RANGE

SET YOUR SIGHTS ABOVE ORDINARY

**3.08% + 0%\***

FINANCE OVER 36 MTHS

DEPOSIT

Powered by **bnz**



PEUGEOT 2008 SUV  
FROM **\$29,990** +ORC



PEUGEOT 3008 SUV  
FROM **\$39,990** +ORC



PEUGEOT 5008 SUV  
FROM **\$49,990** +ORC



**PEUGEOT**

\*This advertisement is for a credit agreement with BNZ. BNZ lending criteria, terms and conditions and fees apply. Application fee of \$330 applies to consumer loans. Fees differ for business purpose loans. Offer only available on the PEUGEOT SUV range, prices include GST. Fixed interest rate of 3.08% p.a. 0% deposit required, maximum term of 36 months. For business purpose loans, the GST component must be repaid within the first three months of the loan term. Loan to be secured by the asset or other current business assets if additional security is required. You will be required to insure the asset. Insurance covers are subject to the terms and conditions and exclusions contained in the relevant policy document and schedule. For further details contact BNZ on 0800 236 777. Each offer not in conjunction with any other special, discount or promotional offer. Available at participating dealers only. Valid until 31st July 2018 or while stocks last. PEUGEOT reserves the right to vary, withdraw or extend this offer.

**Armstrong** **MOTOR GROUP**

227 Great South Road, Greenlane | 09 887 1230  
Open 7 Days | [www.armstrongmotorgroup.com](http://www.armstrongmotorgroup.com)





iOWN  
INTELLIGENT OWNERSHIP

from \$165 / week\*



CLEAN CAR  
STANDARD  
REBATE



## NEW e-208

FOR THOSE AHEAD OF THEIR TIME

Full Electric - 340km range - Rapid charge 80% in 30 min\*\*

0 GRAMS OF CO<sub>2</sub>, 340KM RANGE (WLTP\*\*)

\*Based on a Peugeot e-208, RRP of \$53,990. Offer of \$165 per week over a 4 year term, and a one-off payment of \$8,789.55 (Standard payment + Govt. Subsidy) in week 8. With no deposit required and a final balloon payment (the Guaranteed Future Value) of \$26,995.50. Total mileage of no more than 30,000kms over the term applies. A fixed interest rate of 5.95% p.a. applies. The total loan amount is \$69,682.35. Lending criteria, T&Cs and fees (including a \$262 establishment fee and a \$7.39 PPSR fee) apply. iOWN is provided by Heartland Bank Limited. At the end of the term you can choose to keep the car, by paying the Guaranteed Future Value, trade it, or return it (subject to T&Cs and excess charges). Offer excludes ORC. Limited stock is available for pre-order at participating dealers arriving in Spring 2021. Not available in conjunction with any other offer. Subject to government subsidy (zero emission) of \$8,625 including GST applies and is necessary for week 8 one-off payment, available to one new registration between 1 July to 31 December 2021. \*\*WLTP cycle, 2019 standard, corresponding to 340 km WLTP. Rapid Charge at public ev 100kW charging station.

# SOUTHERN AUTOS

1 Bakerfield, Manukau Phone 09-884 3020

Find us online [SouthernAutos.co.nz](https://SouthernAutos.co.nz)



[facebook.com/southernautosaukland](https://facebook.com/southernautosaukland)

# NEW PEUGEOT SUV RANGE

SET YOUR SIGHTS ABOVE ORDINARY

**3.08% + 0%**

FINANCE OVER 36 MTHS\*

DEPOSIT

Powered by **bnz**



PEUGEOT 2008 SUV  
FROM **\$29,990** +ORC



PEUGEOT 3008 SUV  
FROM **\$39,990** +ORC



PEUGEOT 5008 SUV  
FROM **\$49,990** +ORC



**PEUGEOT**

\*This advertisement is for a credit agreement with BNZ. BNZ lending criteria, terms and conditions and fees apply. Application fee of \$330 applies to consumer loans. Fees differ for business purpose loans. Offer only available on the PEUGEOT SUV range, prices include GST. Fixed interest rate of 3.08% p.a. 0% deposit required, maximum term of 36 months. For business purpose loans, the GST component must be repaid within the first three months of the loan term. Loan to be secured by the asset or other current business assets if additional security is required. You will be required to insure the loan. Insurance covers are subject to the terms and conditions and exclusions contained in the relevant policy document and schedule. For further details contact BNZ on 0800 236 777. Each offer not in conjunction with any other special, discount or promotional offer. Available at participating dealers only. Valid until 31st July 2018 or while stocks last. PEUGEOT reserves the right to vary, withdraw or extend this offer.

**Armstrong** **MOTOR GROUP**

227 Great South Road, Greenlane | 09 887 1230  
Open 7 Days | [www.armstrongmotorgroup.com](http://www.armstrongmotorgroup.com)