



Peugeot Car Club (Auckland)

# Peugeotex<sup>©</sup>



*Volume 35, #9 October 2021*



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Front cover – Peugeot 505 Pick-Up Double Cabine Gruau  
Above – Anne Cotterill

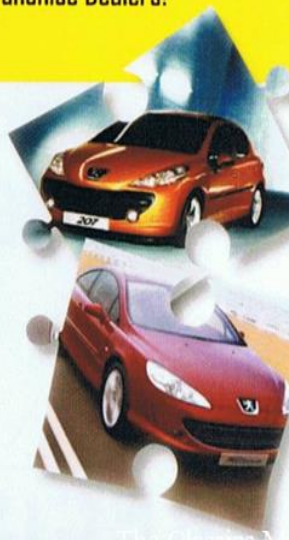
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Hamilton





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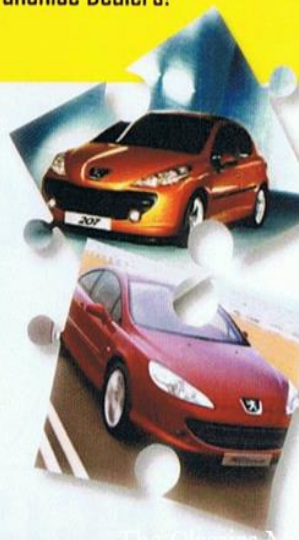
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## COMING EVENTS

**peugeotclub.org.nz**

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

~~October 17 - Pride of Ownership  
- postponed indefinitely~~

October 25-30 – Targa NZ

Labour Weekend – ‘weekend away’  
up north postponed till 2022.

November 21 – Tricolore Trophy  
Navigation Trial  
- Covid permitting

### THOUGHT FOR THE MONTH

Success is getting what you want.  
Happiness is wanting what you get.



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responsibility for any views expressed in it.

## PRESIDENT'S RAMBLE

I think the hardest thing for me with these lockdowns of various levels is writing the Presidents Ramble, because I haven't been allowed to ramble! Well not much anyway. I have managed for work to go to Kawakawa Bay and I must admit it almost feels like I have run the blockades and got out of Auckland, but of course I hadn't.

One advantage of this was I did manage on the way home to visit Calums Bakery in Papakura. The family appreciated the change to our home prepared diet when I bought back fresh mince potato top pies. Calums has been a favourite bakery of mine for years now, often gets visited when work or car club has me in the area, which isn't very often. There is something comforting about comforting familiar food and places. It was unusual though not going into the store but queuing at a social distance (I have had to queue there at a non-social distance to get in the door in the past) and then to be confronted by a table and a large sheet of Perspex at the door.

I am grateful that my work gets me out and about at times. One day recently I went out for two jobs and was called out to two more while out. It felt like freedom; Mt Wellington to Otahuhu, to Three Kings and finally to Mangere Bridge. I actually cope quite well with Lockdowns and don't tire of my neighbourhood, but that is not necessarily the case for all members of my family and I imagine not the case for all of you too. So can I say to those of you that have the freedoms please enjoy them; those of us that don't so much, get out, explore your neighbourhoods, think about others in your household and whether you have to get out a little bit further or more often, go to a park or street that you don't usually go to. Just do something to help those who don't cope as well.

From talking to friends and family I don't think everyone has got the same message or taken the same message from the government announcements. Just in case some of you want to socialise with family and friends and are stuck in Auckland like me here are the guidelines straight of the Government Website:

***You can meet 1 (one) other household at a time, up to a maximum of 10 (ten) people.***

***You must meet outside, and maintain physical distancing.***

***You can invite friends and whānau to your home, but you can only meet outside. For example, you can meet in the garden or have a barbecue in your backyard. Friends and whānau not in your household are not allowed inside your home.***

Mandy and I have had drinks with a couple of our friends on the deck at home and this weekend intend to meet up with another family at a park. These social interactions are important for most. It keeps most of us sane.

In the meantime, as you can imagine the committee hasn't met, we can't plan events, or at least not well and as you probably know by now we have had to postpone the Pride of Ownership with meeting bubbles restricted and members not able to travel through the borders.

I, like you, are probably looking forward to interacting with others again. Let's hope everything is lifted in time for the Navigation Run. Citroen have planned a good one for us. See you in November (I hope),

*Brent*

## PRIDE OF OWNERSHIP

I don't think anyone will be really surprised that we have had to postpone our own 2021 Pride of Ownership event. It is too soon to predict when we may be able to hold any normal club events again. I would not – at this time – even be able to guarantee that the November Navigation Trial will be a permissible activity.

However, for those who are interested, I would like to recommend taking a look at the photos of the spectacular cars of the 2021 Concorso d'Eleganza Villa d'Este. Mike Hanlon has written about them and you can see his article on New Atlas. Go to

**<https://newatlas.com/automotive/villa-d-este-2021-best-cars-concours-elegance>**

## WHEEL TORQUE #35

In this edition :of the newsletter, the FoMC meets Transport Minister (progress promised on resolving regulatory issues)

- NZ Vintage Machinery Club (Canterbury) hosts FoMC AGM
- Presidents 26th AGM Annual Report
- Finding a safe pathway to Net Zero
- New executive member (Warren Pattinson, NZ Hot Rod Association)

It is available in full on our website:  
**<https://fomc.nz/display?ppd=fomc.nz/wp-content/uploads/WheelTorqueIssue35.pdf>**

## COMING EVENTS

<b>October 17</b>	<b>Pride of Ownership; Sunday 1.30pm; venue Smales Farm Postponed due to Covid restrictions.</b>
<b>October 25-30</b>	Targa New Zealand
<b>November 21</b>  <b>Covid permitting</b>	Tricolour Trophy Navigation trial - The plan at this stage is to meet for coffee at Tony Soljans' Restaurant, on the main highway / SH16 approximately 2 1/2 Ks from the end of the N.W motorway mid morning then navigate your way following instructions, to end at Fishermans Lodge, Shelly Beach on the South Kaipara Head peninsula for lunch. Numbers will be required for the lunch, so start planning for this outing now. Bill Hill; Citroen <a href="mailto:wwh@xtra.co.nz">wwh@xtra.co.nz</a>



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## JEANETTE'S JOTTINGS

Some ancient construction methods involved mixing animal blood into mortar to act as the binding material. Pig blood and lime mortar was one of the more notable mixes, in which the blood regulated the growth of calcium carbonate crystal, with one study even describing this as "one of the most important technological inventions in the Chinese architectural history."

A research team at the University of Manchester working with simulated lunar and Martian soils, have experimented with using human blood and waste products as binding material, and turned up some interesting results. They found that urea, a waste product found in urine, sweat and tears, could be incorporated to increase the compressive strength of a concrete-like material by more than 300 percent. That is to say, the key to cosmic concrete stronger than what we have here on Earth might be found in our blood, sweat and tears (and urine).

Researchers from Germany and Auckland University have now demonstrated a potential way to reduce the problem of farm pollution – by toilet-training cows. They trained 16 calves to use a latrine they call the MooLoo. It's essentially a bright green pen that gives the animals a food reward for urinating there. They were discouraged from peeing elsewhere with gentle deterrents like collar vibrations or splashes of cold water.

Tools, found by archaeologists in a cave in Morocco, suggest humans were skinning animals for fur to wear as clothes up to 120,000 years ago.

A decent chunk of energy usage goes towards lighting, so scientists at MIT are developing a new kind of passive lighting – glow-in-the-dark plants. In the latest experiment, the team has made them glow much brighter than the first generation plants, without harming their health. The emerging field of "plant nanobionics" involves embedding nanoparticles into plants to give them new abilities. Past work by the MIT team has created plants that can send electrical signals when they need water, spinach that could be used to detect explosives, and watercress that glows in the dark.

As a raw material, copper is around 100 times cheaper than silver and far more abundant. After getting its start in a Sydney garage as part of a PhD project with the University of New South Wales, the SunDrive team finally fabricated a silicon solar cell based on copper rather than silver in 2019 that became the most efficient industrial-sized solar cell ever produced in Australia. Then last year, the startup received government funding to scale this technology down from an industrial-sized cell to a commercial module that can be fitted to rooftops. These latest cells recently underwent testing at the Institute for Solar Energy Research Hamelin in Germany, which awarded the team certification for the new world-record efficiency earlier this month.

The first lawnmower was invented in 1830 by Edwin Beard Budding and based on a machine used to trim cloth. Previously lawns were kept under control by sheep or by scythes, neither of which worked.

A new study is reporting half of US children under the age of six have detectable levels of lead in their blood. The study tracked data from over a million children and is the first of this scale to analyze small traces of lead in blood samples.

## HAMPTON COURT 2021 CONCOURS D'ELEGANCE

The 2021 Concours of Elegance presented by A. Lange & Söhne was held at Hampton Court Palace on the 1<sup>st</sup> weekend in September, with the prestigious "Best in Show" award, voted by the owners of the cars on display, going to a unique art deco rolling sculpture known as the Voisin C-27 Aérosport.

The origins of the C27 Aérosport lie in the Aérodyne, a provocative car created for the 1934 Paris Motor Show that didn't quite hit the mark in terms of sales. After the expo, two roadsters were built on shortened Aérodyne chassis – which became known as the C27. This car is all that remains of the Voisin C27 breed, created by one of the most acclaimed engineers of the 20th Century, the celebrated aviation pioneer Gabriel Voisin, and it shows many of the hallmarks of Voisin's aviation background.

Voisin (5 February 1880 – 25 December 1973) was one of the world's great aviation pioneers, and along with Alberto Santos-Dumont, Henri Farman and Glenn Curtiss, he was one of the people responsible for the formation of the aviation industry in the decade after the Wright Brothers' first flight.

Voisin built Europe's first manned, engine-powered, heavier-than-air aircraft and his fortunes soared as the aviation company he founded produced more than 10,000 military aircraft during WW1. A Voisin Type VIII is on display in the Smithsonian's National Air and Space Museum in Washington, D.C, and is believed to be the oldest bomber aircraft in the world.

After witnessing the horrors of WW1, Voisin rejected aviation and the death he could foresee it would bring in the next major conflict, and collaborated with friend and automobile designer André Citroën to build a luxury car immediately after the war was over. Voisin spent his entire life designing cars from that point, becoming an advocate of light weight, centralized mass, aerodynamic efficiency, and low frontal area – he was also one of the first in the world to experiment with monocoque chassis.

A decade after beginning automobile construction, Voisin's cars held 37 world records, including the 24 hour average speed record of 182.66 km/h (113.49 mph). More than 60,000 Voisin automobiles were built before his first retirement from the field in 1936.

The Voisin C27 that stemmed from the 1934 Paris Motor Show Aérodyne was going to be more expensive than a Bugatti to buy and the austere market conditions of the mid-1930s finally saw the Voisin name disappear from automotive production in the late 1930s.



## TESLA CLAIMS NEW RECORD

When Tesla revealed the Plaid variant of its Model S back in June, it was clear that it would have few competitors in the electric vehicle space, at least so far as the performance of four-door sedans go. The company has recently been busy proving its chops by sending a production version of the car around the Nürburgring, and CEO Elon Musk today claims that these efforts have resulted in a new world record for the vehicle's class.

The Model S Plaid entered the world as a 1,020-hp electric car capable of covering a quarter mile in just 9.23 seconds, and shuttling from 0-60 mph (96.5 km/h) in 1.99 seconds. This made it the first production car to break this two-second barrier and, according to Musk, positioned the Model S Plaid as the "most amount of fun on four wheels."

Tesla has had some fun at the Nürburgring with the Model S Plaid before, perhaps most notably in 2019 when it clocked an unofficial lap time of seven minutes 13 seconds with a finely tuned R&D prototype. This was a great deal faster than the record for production electric cars of seven minutes 42 seconds, set by the Porsche Taycan in August 2019.]

The Plaid powertrain has also been put to work at California's Laguna Seca, where a prototype was whipped around the circuit in 1:36.555, a record-breaking time for a four-door sedan, electric or otherwise.

Now Tesla has returned to the 'Ring with an unmodified version of the production Model S Plaid, and navigated the notoriously testing circuit in a blistering seven minutes and 30.909 seconds, with an average speed of 166.320 km/h (103 mph).

"Tesla Model S Plaid just set official world speed record for a production electric car at Nürburgring. Completely unmodified, directly from factory," Musk posted on Twitter, with an accompanying photo of the time sheet. "Next will be modified Plaid with added aero surfaces, carbon brakes & track tires (all things that can be done without Tesla being in the loop)."

Such alterations will likely see the Model S Plaid clock even faster lap times, but it will have some ways to go to topple the hottest of hot laps completed by an electric vehicle, the six minutes and five seconds logged by the Volkswagen ID.R back in 2019.

Tesla had originally planned the Model S Plaid+ as its own 520-mile car, but the model was later nixed before launch – EV drivers don't need more than 400 miles (644 km) of range, proclaimed Elon Musk.



We suppose the market gets to decide if Musk is correct, and we don't anticipate it hard-braking at 400 miles.

## BETTER ROAD SURFACES

One of the many areas graphene promises to have transformative effects is in fortifying construction materials like concrete and asphalt. A first-of-a-kind trial now underway seeks to apply the wonder material's impressive attributes to one of the UK's major thoroughfares, by deploying it in a road resurfacing project along a stretch of the A1 motorway.

Made up of a single sheet of carbon atoms arranged in a honeycomb pattern, graphene offers incredible strength and flexibility, and by incorporating it into materials like asphalt, scientists hope to develop road surfaces that last far longer, and therefore cost less to maintain.

Back in 2017 we looked at an interesting take on this from a pair of Italian companies that developed an asphalt material doped with a graphene additive to make it less likely to soften in the heat and crack in the cold under high loads. This product, known as Gipave, also incorporates plastic pellets and was recently rolled out along stretches of UK roads as part of trials to see how it can extend the lifespan of the surface.

As reported by the BBC, this new trial differs in that National Highways will be adding the graphene to the mix on site. The road authority will scrape up the existing asphalt along a three-mile (4.8-km) section of the A1 in the north, add in the raw graphene on site and then apply the fresh mixture to the surface, a technique it bills as a world-first.

"Laboratory trials have been a success and the on-site trials in Northumberland will be a world first use of graphene in road production, which enforces our commitment to innovation and helps to push the industry towards more carbon-friendly maintenance with longer-lasting solutions which we all benefit from," says

National Highways Asset Needs Manager, Graeme Watt.

The trials are being carried out with researchers at the University of Manchester, where graphene was first isolated back in 2004. Since then, scientists at the university have continued to uncover exciting new properties of the material and broaden its applications, which recently included putting it to use as the world's first graphene-enhanced concrete slab.

The "revolutionary" resurfacing project is due for completion on November 3, with its performance to then be monitored to see how it prolongs the lifespan of the road.

Source: National Highways

## UPDATE ON THE TWEEL from New Atlas

We've been reporting on Michelin's airless tire technology for more than 16 years now. Indeed, the first time we wrote about the "Tweel" back in 2005, it quickly became the most popular story ever for what was then called gizmag.com.

The advantages are pretty clear: firstly, you can never be brought to a stop by a puncture or blowout – Michelin says about 200 million tires every year hit scrapyards early thanks to these. Secondly, you don't have to look after your tire pressures; that doesn't just save you time, it also eliminates all early wear caused by underinflation.

Their internal spokes are hugely tunable to meet desired performance characteristics. You can individually tune their stiffness under acceleration, braking, cornering and bump handling forces. The bump handling characteristics can even be tuned to eliminate the need for separate suspension in some types of vehicles.

You can poke holes right through the tread to let water escape, potentially creating much better resistance to



aquaplaning. They take less raw material and less energy to make, making them better for the environment, and Michelin has estimated they'll last up to three times as long as a regular ol' hoop.

They have obviously not been easy to commercialize, though; 16 years and counting is a long and difficult birth for a product people are clearly interested in. The Tweel, which replaces the entire wheel assembly, has been available for some time for various off-road vehicles, but it's still yet to make it to the road.



Michelin has teamed up with GM to design and start selling an airless tire for street use on passenger cars. Called Uptis, this product is a full-wheel solution requiring specialized rims. Michelin says it will withstand much greater impacts than a regular tire and wheel, and will have a "dramatically" longer lifespan, while adding no extra rolling resistance, not feeling any different to the driver and adding only around seven percent to the weight of the wheel – less than existing run-flat tires do.

GM will begin offering Uptis as an option on certain models "as early as 2024," and the partnership is working with US state governments on regulatory approvals for street use, as well as with the federal government.

At IAA Munich recently, the Uptis airless tire got its first public outing, in which "certain lucky members of the public" had a chance to ride in a Mini Electric kitted out with a set. By all reports, the experience was about as exciting as driving on a regular set of tires – i.e. not very interesting at all. They felt no different. But that's kind of the point here, **Michelin is hoping to bring in a new and improved technology with zero change in the user experience.**

## RESIGNATIONS

It is with regret that we have had to accept the resignations of  
Noel Buchanan in Gisborne  
Roger & Elizabeth Herbert in Te Awamutu.  
We wish them many happy miles of motoring...

## PEUGEOT 505

If you want some fascinating information and more photos of the 505 Pick-up Double Canine Gruau prototype, have a look at this site -  
[https://silodrome.com/peugeot-505-pick-up-double-cabine-gruau/?fbclid=IwAR2zCwiW2qgIn3ePfpbu2\\_NOgW-D-u8fQka8poS4qZnV8d51UXJXwp8E8YI](https://silodrome.com/peugeot-505-pick-up-double-cabine-gruau/?fbclid=IwAR2zCwiW2qgIn3ePfpbu2_NOgW-D-u8fQka8poS4qZnV8d51UXJXwp8E8YI)

## Peugeot 505 Pick-Up Double Cabine Gruau prototype

On the front cover is one of just six Peugeot 505 Pick-Up Double Cabine Gruau prototypes that were made in the 1980s. It was a vehicle designed to combine the best features of a passenger car with the utility of a pick-up truck. In a way this car was the French answer to the Australian ute or the American pick-up truck, and it would have been ideal for tradespeople who needed a truck and a family sedan, but couldn't afford both.

The Peugeot 505 was introduced in 1979 as an evolution of the outgoing Peugeot 504, although no one knew it at the time the 505 would become known as the "Workhorse of Africa" and it would provide an invaluable locally-built transportation option in developing countries like China, Indonesia, Chile, Argentina, Thailand, Nigeria, Taiwan, Malaysia, and Egypt. The final production cars rolled off the factory floor in Guangzhou, China in 1997.

The simplicity of the Peugeot 505 worked in its favor and it proved to be a remarkably tough vehicle for a passenger car that was originally designed to be used in Europe. The car features a steel unibody design with a longitudinally-mounted engine sending power back through either a manual or automatic transmission to the rear wheels.

The styling of the 505 was a joint effort between Pininfarina and Peugeot, and the vehicle was offered as a variety of body styles including as a four-door sedan, a five-door station wagon (estate), and in prototype form as a coupe, a two-door convertible, and as a four-door pick-up truck.

The rear load bed had a size of 1.37 meters x 1.44 meters and a weight capacity of 675 kgs, making it ideal for many tradespeople. The original plan for the

vehicle was to have it taxed as a commercial vehicle, making it less expensive to operate than a standard road car, while still having all of the benefits of a standard passenger vehicle.

This car is one of the six original prototypes built by Carrosserie Gruau. They developed the 505 Pick-Up Double Cabine in-house and showed it to the public for the first time at the 1984 Paris Motor Show. Each of the six prototypes was built using a Peugeot 505 station wagon (estate) 2.5 liter diesel as a starting point, the rear was cut off and replaced with a cargo bed, the passenger cabin area was sealed and a rear window was put in.



Sadly for Gruau, this commercial vehicle classification was rejected, and the project was cancelled as a result. The six prototypes were sold off into private hands (registered as station wagons), and the project was abandoned.

It was first registered in 1985 in the Rhône region of France. Decades later in 2021 it would undergo a refurbishment, with all bodywork completed, new paint applied, a tidied up interior, and a rebuilt drivetrain. The same stripes used on the Paris Motor Show car were then applied.

## ARMSTRONG'S ZOOM UPDATE

10 am on Saturday 18<sup>th</sup> about 28 Peugeot & Citroen fans tried to tune in to Armstrongs' promised on-line update. Twenty minutes and some apologies later, the patient ones enjoyed an hour-long look at a variety of old and new videos about the models which are now part of Stellantis.

We were asked not to take photos – so don't expect any here.

What we did hear was that Peugeot's aim is to "*turn time into quality time*". That excellence and allure are important to a firm which considers that "*we are the lions of our time*" and describe themselves as an "*inventive highend generalist*".

The Product Manager, Alex Devilliers, spoke on the two new models which are expected to reach NZ this month and the five next year. Peugeot expect 85% of their production to be electric by 2023 and 100% by 2025, enhancing the "*Peugeot pleasure of driving*."

A graph showed that both Peugeot #1, and Citroen #3, are already cleaner by far than the market average. New branches are being opened in NZ to make sure that both brands are well represented across the country.

We will soon have to get used to only being able to choose between hybrid and full electric.

Thanks were offered to Lukas and the Armstrong team for setting up this pioneering event.

## CAN PEUGEOT MATCH THIS MILEAGE?

When Lucid Motors first announced its Air sedan would return 517 miles (832 km) on a single charge, it sounded too good to be true. But Lucid didn't think so, having hired an independent test firm to run it through the EPA cycle. A year and change later, Lucid's best-in-market electric car range stands.

The official EPA numbers are out and show that the first 2022 Air models will all surpass the 405-mile (652 km) EPA benchmark set by the 2021 Tesla Model S Long Range, with the Dream Edition Range model achieving a 520-mile (837-km) rating from the EPA.

Announced late last month as one of two special-edition launch models, the Dream Edition Range features a 933-hp dual-motor all-wheel drive. It requires 19-in wheels to hit the 520-mile mark and has a 481-mile (774-km) EPA estimate when equipped with 21-in wheels.

The second launch edition model, the Dream Edition Performance gets up to 471 miles (758 km) per charge with its uprated 1,111-hp dual-motor drive, according to the EPA. Sadly, at US\$169,000 each (before federal or local incentives), the Dream Editions won't exactly bring those impressive electric driving ranges to the masses.

*When stuck in a NZ traffic jam, be thankful you do not live in China where you might face this. Note the lack of marked lanes.*



## BELIEVE IT OR NOT...

Everyone who's ever driven laps around a packed parking lot or city downtown has had the thought at least once: Wouldn't it be great if my car could shrink down to squeeze between two parked cars?

Finally, it can – at least if your car is the all-new Israeli-designed City Transformer. The tiny tandem electric commuter stands on a retractable chassis that pushes the wheels out for better driving stability at speed and pulls them in to manoeuvre through or park in tight spaces, taking up only a fraction of a standard parking space.

With its full-width front light bar and angular cabin, the City Transformer isn't exactly a dead ringer for the Renault Twizy, but it's hard to look at any ultra-slim urban quad-wheeler without the Twizy popping to mind. And at 250 cm (98 in) long by 140 cm (55 in) wide, the City Transformer sizes close to the Twizy's 234 x 124-cm (92 x 49-in) dimensions.

Unlike the Twizy, though, the City Transformer can suck in its gut and slim down enough to zip around alley-width old-city streets and squeeze into parking spaces too small for other vehicles. The adjustable-width chassis pulls the wheels even with the body for a 100-cm (39.3-in) overall tire-to-tire width. This



adjustment can be done even while the car is in motion, allowing drivers to switch on the fly between two-wheeler-like manoeuvrability and four-wheeler stability.

The 158-cm-high (62-in) City Transformer has an enclosed cabin with two wing doors. Inside, the air conditioned interior seats two adults in tandem, and City Transformer also plans a version for an adult driver and two children. The design includes one or more airbags.

After developing its first prototype in 2019, City Transformer introduced its production-ready car at this month's IAA Mobility show in Munich. It plans to begin small series production for fleet customers in 2022 after getting its vehicle approved for road use under the EU's L7e classification. From there, it plans to grow production through manufacturing partnerships and deliver the first customer cars in 2024. Preorders are available now to lock in a special price of €12,500 (approx. US\$14,650) with €150 down, a discount off the planned MSRP of €16,000 (approx. US\$18,750).

The City Transformer team estimates Transformer drivers will have it 10 times easier when it comes to finding a parking space on a crowded city street and emphasizes that traditionally sized cars with large powertrains are overkill for city dwellers, spending most of their lives in parking lots, driving often with one or more seats unoccupied, and carrying around loads of power they simply don't need when averaging 17 km/h (10.6 mph) on city streets.



## PEUGEOT IN WW2

from War History Online  
as printed in TORQUE

The French village of Sochaux was home to one of the most impressive industrial facilities in Europe. The Peugeot car factory sprawled across acres of land and employed over 60,000 people. It even had its own power generation facilities, so that if the grid failed elsewhere, production could keep going.

Soon after the Fall of France in 1940, the Germans took control of the factory. The Peugeot family would still supervise work, but they would do so in service to the needs of the Nazi regime, churning out tanks and planes.

The Peugeots trod a fine line, trying to keep their staff employed while helping the Vichy and German regimes as little as they could. Low-key sabotage efforts saw six out of every ten vehicles emerge from the factory with faulty clutches.

Still the factory kept producing large volumes of war material. In the spring of 1943, skilled workers were assigned to build parts for a secret project, the V1 missile. For the British, it was more critical than ever that the plant be taken out of action.

Responsability for the job was first given to Chief of the Air Staff, Charles Portal, and his head of Bomber

Command, Arthur Harris. They were men who believed in brute force over sophistication, leading the carpet bombing of German cities. Now they brought a similar plan to the Sochaux problem.

On the night of July 15, 1943, 165 Halifax bombers followed Pathfinder target-marking planes in a bombing raid against the plant. The Pathfinders dropped their flares, the bombers used them to target the factory, and the night was ripped apart by the sound of hundreds of bombs laying waste to the area below.

The pilots came home full of reports of their success. The Peugeot plant had been flattened. They slapped themselves on the back on a job well done.

Then came the reports from the ground. The flares had fallen short, drawing the bombers to the wrong targets. Instead of flattening a factory, the Royal Air Force had hit four nearby villages killing 125 civilians and seriously injuring 250. Only 30 stray bombs had hit the factory, to little effect.

Fortunately SOE had another plan in mind.

Earlier in the year, an operative named Harry Ree had parachuted into France. Even by SOE standards, Ree was a curious character. Originally a pacifist, he had taken up

arms in response to Germany's treatment of Jews, as his father was half-Jewish. Forgetful and barely competent with firearms and explosives, Ree only just made it through his training. But he had an incredible ability to empathise with others, which made him invaluable in working with people.

Dropped into occupied Europe in spring 1943, by the time of the air raid, Ree was staying with resistance members in Besancon, near Sochaux. He watched the air raid from his host's garden and heard about its disastrous aftermath from witnesses. He knew he had to do something better.

Daringly Ree phoned Rodolphe Peugeot, told him who he was and explained that they had two choices—sabotage the factory or see more bombing raids and civilian deaths.

At first suspicious, Peugeot was persuaded of Ree's identity by a radio message from London. He was reluctant to see his own factory sabotaged but Ree convinced him it was the best way to protect local civilians. Once convinced to accept this, Peugeot became an enthusiastic supporter of the mission.

Peugeot provided Ree with plans for the factory and contacts within its staff. Ree took a tour of the plant in disguise, planning for the attack. Stocks of incendiary devices and

limpet mines were parachuted into the region by SOE and stockpiled inside the factory under the very noses of the Germans.

The attack would be led by Pierre Lucas, as sending Ree in was too risky. The first attempt had to be postponed thanks to an encounter with German guards, who kept the team of factory workers busy with a friendly game of football, unaware of their real reason for being out after dark.

On November 5, Luca's team made their second attempt. They slipped into the factory after dark, avoided the guards, retrieved the explosives, and waited tensely until eleven at night.

The attack put the factory out of use for long months and gave SOE the evidence it needed to stop bomber attacks on the area saving civilian lives. The Peugeotts were questioned by the authorities but managed to cast off suspicion against them.

In the days after the attack, Ree and his team kept up a sabotage campaign attacking further industrial facilities and even destroying replacement parts for the Peugeot plant.

As the Gestapo closed in, Ree was nearly captured. Wounded by a German bullet he just managed to escape, crossing the border into Switzerland to evade capture.

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## LAST 308 LEAVES SOCHAUX

After nearly 1.4 million units, the last 'T9' Peugeot 308 has been built at the brand's spiritual home in Sochaux – with the next-generation model due in Australia in 2022 to be built in Mulhouse.

Since 1912 the Sochaux factory in eastern France has been home to Peugeot manufacturing, and in 2010 the plant celebrated a milestone of 20 million vehicles produced.

Some 1.38 million of those were the hugely-successful, second-generation Peugeot 308 hatch and wagon, which commenced production in 2013 and has now ended with a white 308 Active being the last down the line. The car will be kept by Peugeot, which also curates the l'Aventure Peugeot Museum and classic-car restoration facility in the town.

The production team celebrated with a 308 logo-shaped profiterole cake, and will continue to manufacture the 008 and 5008 SUVs at the factory.

*I couldn't resist this one...*

Peugeot's T9-series 308 won the coveted European Car of the Year award in 2014

and along with the previous generation 208, pioneered the i-Cockpit instrument cluster and small steering wheel setup now found across the Peugeot range.

The final high-performance 308 Gti was completed in December 2020, with the model allegedly signifying the final use of the Gti designation by Peugeot, in favour of the PSE (Peugeot Sport engineered) monicker.

The all-new third-generation 308, which goes on sale in its native France this month, is built nearly 60km to the east in Mulhouse, near the French-German border. The T9 line at the Sochaux factory will be retooled to build an all-new 3008 SUV, which will use parent company Stellantis' latest 'STLA Medium' electric platform, due to be launched in 2023.



# PATTERN PUZZLE

Can you find the 56 car related words in here?

R	A	D	I	A	T	O	R	B	P	L	E	V	E	R	E
O	D	R	U	M	Y	J	L	R	E	S	H	A	F	T	X
C	O	I	L	S	R	E	P	M	U	B	Y	N	L	K	H
K	N	V	U	A	E	T	E	N	G	I	N	E	C	T	A
E	E	E	E	D	R	V	D	E	E	L	B	O	I	E	U
R	B	R	A	K	E	A	A	R	O	O	L	F	P	S	S
O	R	J	E	T	D	R	N	L	T	D	P	B	O	O	T
F	U	E	L	M	N	M	F	Y	V	O	I	D	R	H	C
H	S	A	R	C	I	A	A	C	J	E	S	S	S	K	T
W	H	E	E	L	L	T	N	E	O	R	T	I	C	L	A
I	V	R	L	U	Y	U	Q	L	I	O	O	A	H	A	P
N	O	P	X	T	C	R	A	Y	N	I	R	T	E	M	P
D	L	U	A	C	K	E	R	E	T	L	I	F	U	S	E
O	T	M	Z	H	S	A	H	E	A	D	L	I	G	H	T
W	I	P	E	R	C	Q	U	T	F	A	H	S	M	A	C
S	U	M	P	L	I	O	B	A	L	L	J	O	I	N	T

ARMATURE	CRASH	HEADLIGHT	REAR
AXLE	CYLINDER	HOSE	ROCKER
BALLJOINT	DISC	HUB	SEAL
BELT	DOOR	JET	SHAFT
BLEED	DRIVER	JOINT	SUMP
BOOT	DRUM	LEVER	TAPPET
RBAKE	ENGINE	LOCK	TIME
BRUSH	EXHAUST	OIL	TRACK
BUMPER	FAN	PEUGEOT	VALVE
CAMSHAFT	FILTER	PISTON	VAN
CAR	FLOOR	PORSCHE	VOLT
CITROEN	FUEL	PUMP	WHEEL
CLUTCH	FUSE	RACK	WINDOW
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Maria Gaetana Agnesi (1718-179) was an Italian mathematician, philosopher, theologian, and humanitarian. She was the 1<sup>st</sup> woman to write a mathematics handbook [discussing both differential and integral calculus] and the first appointed as a mathematics professor at a university.

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