



Peugeot Car Club (Auckland)

Peugeotex[©]



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Front cover – Peugeot 604

Above - Jeanette Grant at the AGM

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COMING EVENTS

peugeotclub.org.nz

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

September 21-22 | Ashley Forest
Rallysprint

October 24-28 – NZ Targa

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

2025

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

March 9 – Auckland Brit & Euro Classic
Car Show

THOUGHT FOR THE MONTH

A man convinced against his will
Is of the same opinion still



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Peugeot Car Club (Ak) Inc. The Club accepts no
responsibility for any views expressed in it.

PRESIDENT'S RAMBLE

One of the things that amazes me is that I am still president, can't figure out why some of you haven't had enough of me and my ramblings yet. I checked and found I wrote my first one in August 2010, immediately into the job and immediately changing the President's contribution to the magazine. It used to be called the Presidents Report but as I put it in 2010 "**The Presidents Ramble** (once called the Presidents Report but the new one likes to ramble)."

Greg Winkley who was President before me I think was the longest running person we have had in the job, he did it for 7 years, I am now into my 15th term. Time for reflection and I think pity help anyone who takes over from me, assuming that they are duty bound to extend the record further!

In the meantime, the committee has had a small refresh, one new face, thank you Martin, and a real jockeying of positions, Jayden to Vice President, Liesje to Secretary and Matthew to Membership Secretary.

For those that were unable to attend the AGM the big news – if that's the appropriate moniker for it – is that we did not pass the constitution, in fact other than a brief overview of the

situation nothing more was said of it. The situation is that a last minute check found that there was still some more tinkering to do, that we still have next year to legally vote it in to be compliant with the law changes and it was determined it will now be voted on at the AGM next year.

On the subject of ramblings, I have just come back from Nelson, visited alpine temperatures at St Arnaud, the beach at Tahunanui and managed a day tramp with water taxis in the Able Tasman. The relevance to us as automotive fans is that from what I observed they have a larger % of classic autos in everyday use, or at least regular use, than anywhere else I have observed in this fine country of ours. It is an automotive Mecca. Admittedly I saw nothing older than a 206 from the Lion brand, but plenty of other makes were represented in the older vehicle category.

On the culinary stakes, I can now add seaweed butter to food I have tried, not sure that I would recommend it beyond giving it a go, I thought it tasted a lot like a Paua fritter, perhaps not surprising given Paua graze on seaweed to exist!

See you at the upcoming show and shine,

Brent ☺

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COMING EVENTS

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



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JEANETTE'S JOTTINGS

Research participants who got more than 50% of their moderate to vigorous exercise between the evening hours of 6 pm and midnight, saw significant drops in their blood glucose levels that lasted all day,

From satellite data, scientists have discovered frost forming on top of the tallest volcanic mountains in the solar system - on Mars.

After four years of construction, work is nearing completion on North America's longest cable-stayed bridge. Providing a new link between Windsor, Ontario and Detroit, Michigan, its main span will measure 853 m (2,800 ft) once complete.

Japanese researchers have released footage of a humanoid robot called Musashi sitting in the driving seat of an electric micro-car to examine a possible future direction for autonomous vehicle technologies.

Parts used in recently manufactured Boeing and Airbus jets have been left peppered with small holes after components were sold under the false pretence they were made from titanium. The affected parts, which were supposed to be made of the strong and corrosion-resistant metal, were sold with allegedly counterfeit documents claiming to verify the material's authenticity.

On 12 December 1889 George Eastman (founder of Kodak) produced the first celluloid roll of film.

According to the Washington Post, roughly 10% of Americans think chocolate milk comes from brown cows.

According to a Gallup poll, 32% of Americans believe ghosts are real.

In the Philippines, there's an island that's within a lake, on an island that's within a lake, on the island of Luzon.

It's typical for a continent to shift about one inch (2.54 cm) per year, but when the tectonic plates are under stress, they can move about 20 times faster, which is the same rate as our fingernails grow.

Already at 429m below sea level, the Dead Sea is sinking about 1m a year.

Australia is actually wider than the Moon.

With 879,800 lakes, Canada has more lakes than anywhere else in the world. Basically, they have 62% of the world's lakes!

Not lowering the toilet lid before flushing could in fact be dangerous for the health of the occupants of the house.

The 26th of March is the anniversary of [1] the 1934 British Road Traffic Act which introduced the Driving Test for all motorists, and [2] in 1958 the first parking tickets were issued by the new traffic wardens.

In the US, on average, 37 children under the age of 15 die each year from heatstroke after being left inside a vehicle.

PRESIDENT'S REPORT AT THE AGM

Firstly and foremost I would like to acknowledge my Vice-President, John Cooney, who unfortunately left this mortal coil last year. Many of you had a wonderful relationship with him, and for me he was exceptionally special. John was someone I could rely on to organise things when others were too busy. He was a sounding board for my ideas and his enthusiasm was unparalleled, a quality I've only seen matched by a few others.

As with last year we have important business to achieve, both the prizegiving and a review of the constitution, in what may be a limited time I am going to make this brief.

Although the committee has faced challenges, such as struggling to organize an interclub event with Wellington and the gymkhana, we've made efforts and faced some constraints. Many of our members live outside Auckland, and in these inflationary times, it's tough to coordinate events due to travel and cost. Sometimes, it feels like we should rename ourselves the Peugeot Car Club Upper North Island!

However we have achieved a great deal. Individual contributions and collective efforts have driven our success. I want to particularly acknowledge Matthew Ensor. He is not quite the newest member of the club, in that we have recruited a couple of members since he joined last year, but his impact has been immediate. He's attended a number of events, jumping into the committee

with open arms when I put a call out for new blood and he has festooned the magazine with Peugeot quizzes to keep our brains active and learned.

We have also had fantastic displays at the Ellerslie Concours more than artfully decorated by Liesje Bradley and kept full of cars by Jay Hardie who supplied cars to those whose had broken down and fixed breakdowns on the day!

At this point I am going to break with tradition and award the President's Award immediately, Jayden Hardie it is all yours!

In the meantime Don Howarth has continued to organise the Brit Euro and Jeanette Grant once again provided a point scoring system and allocated tasks to those that attended the Pride of Ownership. An unusual event last year with more V6s turning up than four cylinder vehicles, I have not seen that before!

And let's not forget the magazine, a quality publication.

I would also like to thank Laurence Newhook from Citroen Car Club who invited our members to play petanque, of which a handful of us attended. It was nice to reconnect with their club again. We really need to return the favour.

I would also like to thank our supporters and advertisers, in the order they appear in the magazine; Euroline, CopiesPlus for their continued and excellent printing service, Euro Motorworks, Auto France and Armstrong Motor Group. Your support is appreciated.

Brent

AGM COMMENTS

PRESENT; Liesje Bradley, Martin Burton, Andrew Corbett, Anne & Ray Cotterill, Brent Druskovich, Matthew Ensor, Jeanette Grant, Peter Hagglund, Jayden & Ichthus Hardie, Kevin, Nat & Marissa Hardie, Don Howarth, Perryn & Ashton Neale, Graham Pooley, Peter Vuletich, Buster West-Hill, SooLand Wong.

A copy of the full minutes has been emailed to all members. A few key points are:-

The committee has been re-elected with the addition of Martin Burton. Liesje has accepted the role of Secretary and Matthew will be the Membership Secretary. Jeanette will stay as Editor.

The annual subs will stay at \$60. These are due ASAP – so please send them to the club's account at the ASB

12 3069 0209308 –

And -MAKE SURE you attach your name so we know who has paid.

The revised Constitution will be voted on at the 2025 AGM.

The President's Award was given to Jayden Hardie.

It reads

That in 2024,
Jayden Hardie

Not only supplied 3 cars for hapless drivers but also managed to do repairs on others at the Ellerslie Concours. Meanwhile I believe he has acted as mechanic to a number of us, got cars that haven't run for years back on the road and found time to get married. Take a look in the mirror Jay, there is only one of you!



Peter Hagglund receiving the 3rd place "06" Certificate



Andrew Corbett receiving the Cooper Cars Attendance Trophy

A LOOK BACK AT THE 604

If you read the magazine CLASSIC & SPORTS CAR, you may have come across the article "Smooth Operators" in the March 2024 issue – comparing the 604 with the Jaguar XJ aka Daimler Sovereign. Here are a few quotes...

'Both of these superbly refined 1970s saloons were designed with an understanding that the ability to connect two places at high speed with as little effort but as much pleasure as possible – for both driver and passenger - is the true definition of luxury in an automobile. They were designed with a sense of finesse and judgement that predated an obsession with Nurburgring handling.'

'The 604SL ... a rear-driven Pininfarina-styled three-box saloon whose deceptively sophisticated underpinnings had been skilfully extrapolated from the well-established 504 saloon; the 604 was 9" longer overall and had a 2" longer wheelbase...the torque tube... was typically Peugeot... long-travel, semi-trailing-arm rear suspension to attenuate the transmission of road noise. By sharing its components with lesser models, Peugeot was able to price the 604 competitively... four-wheel disc brakes, power-assisted rack and pinion steering and electric windows all came as standard, while leather seats, air-con and a wash-wipe for the headlights were optional.

The 604, allegedly designed in just eight months, was heavy for its 136bhp and neither was it the fastest in its class nor the most frugal; even with the four-speed manual 'box you could only expect 18mpg ... In terms of smoothness and ride the 604 was probably the only car to truly rival the standard-setting Jaguar XJ as one of the most restful and comfortable cars available at any price; the 604 also had class-leading rear-seat head- and legroom, and a cavernously deep boot...36,000 sold in its first year but sales tailed off through the '70s and the introduction of the 505 in 1979 did as much as anything to curb the popularity of the 604.

...With its wide-opening doors and lavish rear legroom, it is easy to see why the 604 became the default French ministerial car... the comfort and well-being of the rear-seat passengers has been given as much consideration as that of those in front, with reading lights and built-in head restraints. The seats are large and soft but not soggy...

The Presidential car



The light engine makes the 604 well balanced front to rear and nimble on the road, with the feeling of something smaller and lighter, and it combines this sense of agility with a ride so good you wonder what designers have been up to for the intervening 40 years. It shares with the XJ, a sense of indifference to bumps, potholes and noise-inducing surface textures that is uncanny...

[If you read the original article and wondered why both the terms Jaguar XJ and Daimler Sovereign seemed to be referring to the same car, it turns out that in 1969 an upmarket version of Jaguar was marketed under the Daimler brand as the Daimler Sovereign.]

NEW 208 ON THE WAY IN 2026

The new-look Peugeot 208 is set to arrive in 2026, and this exclusive previews how it could look inside and out.

Have a look on this website:-
<https://www.autoexpress.co.uk/peugeot/208/364074/new-peugeot-208-rip-rulebook-concept-car-inspired-interior>

It states that “...the 208 ... is set to differentiate itself from many of its Stellantis small-car siblings with a radical new look and a move to the company’s new STLA Small platform.....With the newcomer’s reveal not expected for at least 18 months, the recently facelifted 208 and E-208 will soldier on until late 2026, possibly early 2027. A new 2008 crossover will inevitably follow, drawing heavily on the supermini’s styling and cabin as well as the new car’s updated powertrain tech. “

4008 retune

I wonder what Peugeot think of this?
*“Chip tuning for Peugeot 4008 1.8 HDI 150 hp
From today you can give more performance, with the utmost simplicity from your smartphone: transform your Chip tuning for Peugeot 4008 1.8 HDI 150 hp...
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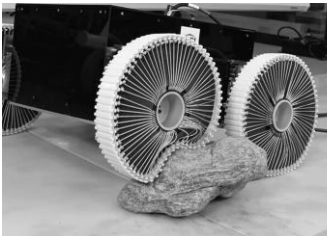
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| Torque | Standard up to +40% |
| Consumption | Standard up to -20% |
| Speed | Standard up to +10% |

SHAPE SHIFTING WHEELS

From the journal Science Robotics

Inspired by the surface tension of a droplet of liquid, researchers have created an adjustable wheel that alters shape in real-time, tackling uneven surfaces and high obstacles with ease. Ideal for developing wheelchairs or mobile robots to use on rough terrains...

Using airless – or non-pneumatic – tires provides an advantage, namely because they’re resistant to punctures, leaks and blowouts. But their stiffness means they’re not great at overcoming obstacles....



PEUGEOTEST

Answers on p 13.
Thanks to Matthew Ensor.

1. **What year was the Peugeot lion logo first introduced?**
 - A) 1825
 - B) 1850
 - C) 1858
 - D) 1878
2. **What does the lion in the Peugeot logo originally symbolize?**
 - A) The power of Peugeot engines
 - B) The resilience of Peugeot vehicles
 - C) The quality of Peugeot saw blades
 - D) The nobility of the Peugeot family
3. **Which member of the Peugeot family is credited with the idea of using a lion for the brand's logo?**
 - A) Armand Peugeot
 - B) Emile Peugeot
 - C) Jean-Pierre Peugeot II
 - D) Jules Peugeot
4. **In which year did Peugeot officially adopt a stylized lion's head logo instead of the full lion figure?**
 - A) 1955
 - B) 1960
 - C) 1965
 - D) 1968
5. **Over the years, how many distinct major redesigns has the Peugeot logo undergone?**
 - A) 5
 - B) 8
 - C) 11
 - D) 14
6. **The current Peugeot logo, introduced in 2021, reflects which of the following design principles?**
 - A) Minimalism with flat design
 - B) Retro-modern with heraldic elements
 - C) Futurism with abstract design
 - D) Art Deco with bold geometric shapes
7. **True or False: The Peugeot lion logo was initially used exclusively for the company's automobiles.**
 - A) True
 - B) False
8. **Which sculptor redesigned the Peugeot lion logo in 1933, creating a more dynamic and powerful version?**
 - A) Carlo Sarrabezolles
 - B) Raymond Subes
 - C) Hector Guimard
 - D) Jean Bugatti
9. **What major change did Peugeot make to the lion logo in 2010?**
 - A) Introduced a roaring lion
 - B) Added the company name beneath the lion
 - C) Made the lion's posture more assertive
 - D) Switched to a two-dimensional flat design
10. **The first Peugeot lion logo depicted the lion standing on which specific object, symbolizing the qualities of the company's products?**
 - A) A tree branch
 - B) An anvil
 - C) An arrow
 - D) A sword

A MECHANIC'S MEMORIES of the 604 – by John Grant

From the viewpoint of a mechanic keeping the 604 in good order, there were several significant changes from the 504 – some good, some not so good.

For instance - The ride of the 604 under extreme conditions was even better than the 504 as they had a forward facing damper to stop the rear cross member from twisting. On the 504, the four mounts were so close together that on severe corrugations, the rear cross member used to flex backward and forward on the mounts and created axle tramp at the rear.

Another significant change was the positioning of the fuel tank in the 604. It stretched right across the car behind the rear seat. This not only improved stability but made it less likely to get involved in an accident.

In addition, in both the 404 and 504, the fuel gauge reading used to vary when going up and down hills. On the 604 the gauge was placed inside a tube so it was not affected by the angle of the road – but, if it gave trouble, it was very hard to access it to fix.

Also the 604 proved more expensive to maintain as so many parts around the engine bay were virtually inaccessible eg it was a major operation to take the starter motor out as, in NZ anyway, an air-conditioning compressor had been put on top of the rocker cover on the

driver's side of the car which made it hard to even check the tappets.

However, anyone rich enough to buy a 604 in the first place, should have been able to afford the high labour costs involved in keeping it going as the mileage got higher.

FAMILY 404 STORIES

By John Grant

As our three boys each came up to driving age, a hitherto unsuspected interest in cars in general awoke. Jeanette was adamant that she would not share a car with one. At that time she was driving **the** 404 - the very first one she had ever encountered. It had been bought new by her brother-in-law Con Attwood in 1965 and used on farm roads around Taupaki. It had then been used by his stepfather Arawa Worrall and after his death passed on to a grandson - John Worrall. One day it burst a radiator hose, over heated and started burning oil as though it were going out of fashion. The local garage didn't want to know. We went out and had a look at it and decided that it had real potential for our needs.

After several years of driving smaller cars - Renault Dauphine and Simca 1000s - Jeanette needed a larger car as the boys and their friends and their school bags were getting bigger by the month. We therefore agreed to buy the 404 and started off to drive it from the farm at Kumeu to the airport at Mangere. We stopped at a Kumeu garage and filled up with oil. It smoked worse than any car I have ever driven.

The smoke poured out the breather and swirled in whirls around the car. Even the cows in the paddocks turned their heads to watch us pass. By the time we reached the airport 25 miles later, the oil pressure warning light was coming on again!

I overhauled the engine and Jeanette then used it for several years. It had a column change with the early gearbox with the same pattern as the 203 and 403 ie first and reverse were opposite; second and third were opposite while top was out on its own as it had evolved from an overdrive gear. It is a very practical pattern for town driving. We then bought another 404 whose owners had left it garaged while they were overseas for a year. On return they found the clutch had seized and decided to quit it. We paid \$500 and had little trouble freeing the clutch. This car also had a column change but it was the more conventional pattern.



Reay then took over the older car and made local history by breaking the gearbox output shaft not once, not twice but three times! This is a very rare thing to do. We decided he was just too rough on the gears - trying to change in one motion instead of going into neutral and out into gear as the oldstyle

gearboxes require. He became quite experienced at repairs as my policy with all the boys was to give advice but make them learn to do their own repairs. A year or two later he had it repainted a very pale grey which had never been a standard Peugeot colour but which suited the body shape admirably.

Unfortunately, he did not enjoy use of the car much longer. He went off the road near Helensville one night and over a bank. The car looked fine but the chassis rails were bent and the insurance company felt the car was not worth the hassle of straightening them. He saw another 404 with a shot motor advertised and bought it cheap. The two cars were then parked side by side on our front lawn, a tripod and hoist was hired from Art Davies and Reay did his first engine transplant.

This new car was green and was known as Esmerelda. She gave Reay a very good run and he decided that she deserved to have a new coat of paint and have a sunroof added. He brought her out to the workshop at the airport and started preparing her. The doors were taken off to be sandblasted and it was that night that the place went up in flames. Poor Reay's car was one of the victims. Luckily the insurance company eventually paid up and Reay bought another 404, again with a shot motor.



He had been planning to go away on holiday to New Plymouth to visit friends and saw no reason to change his plans. He put the 2 litre engine out of his brother's 504 into it, checked the oil levels in the diff and drove off.

Four or five days later we had a telephone call from the police asking if we knew the owner of a Peugeot 404 which was parked at the side of the road near Te Kuiti. We said it was our son's car and spent a fruitless time on the phone trying to find out where he was staying at that time. We kept on just missing him so we knew he had at least reached his goal even if his car hadn't.

A few days later he turned up just after midnight having taken the bus to Hamilton which was as far as his money would stretch. He then hitchhiked up to Auckland and as he arrived here too late for a bus, he had walked from the motorway offramp to home. He was soaked. It was Cyclone Bola time.

Apparently, the car had run very sweetly until the diff had lost all its teeth and the car rolled to a stop. It appeared that although the diff had had the right vegetable oil in it, it must have been very very old and lost most of its viscosity once it heated up. They locked the car and went to the nearest farmhouse, told them what had happened and asked them to keep an eye on the car as it would be a week or so before they could do anything about it. They then hitchhiked the rest of the way to New Plymouth.

Meanwhile the car sat there on the side of the road and one day the

farmer noticed someone interfering with it. He rang the police who arrived in time to intercept someone busily stealing the battery. That was part of the message they gave us. The battery was held as evidence at the police station!

Despite his tiring day, Reay was up bright and early trying to hire an A frame. We had a spare diff here so it was just a matter of getting the car back home to work on it. We started off in the 505 and took nearly five hours to get as far south as Hamilton. The road was chaotic. Cyclone Bola had done its worst and the motorway was flooded in places. We eventually left the main road and went down through Glen Murray and back to the main road at Te Awamutu. where we picked up the battery from the police station.

We found the 404 sitting safely on the roadside and Reay was able to express his gratitude to the farmer. However, when we came to fit the car onto the A frame, it was not so simple. The height of the 505's towbar meant that the 404 would be towing nose up at a very unstable angle. We eventually solved the problem by taking the towball off and mounting it on the towbar upside down. By attaching the A frame also upside down we achieved a stable towing configuration and set off for home. Despite the extra weight, we made it in half the time it had taken to go down as the roads by then had been cleared. Reay fitted the other diff the next morning and took off back down to New Plymouth in the 404 to complete his holiday.

To be continued.....

TARGA NEWS

The last few months have been rather busy at the URG office while we have been working split shifts to contact customers from the Northern Hemisphere overnight and arranging shipping deadlines for the Silver Fern Rally in November, so my apologies for the lack of communication.

I have just returned from a series of Targa presentations in Australia. Starting in Adelaide, Melbourne, Sydney and finishing in Brisbane. We had 50 people attend these presentations which were very well received and we look forward to seeing more of our Aussie mates join us for future Targa NZ events.

Our focus now turns to the Targa NZ event as we move into the final stages of road closure approval and securing the local community support for the service areas as well as the many volunteer groups who we rely on to provide the stage marshalling.

We are now able to finalise the Official Vehicle Schedule and allocate the various timing teams and stage commanders (which will be sent to the officials in a separate email shortly).

So with all that has been going on, our attention is now on all our wonderful participants and supporters across all the Targa options. Be it the Tour or Time trial or the Competition, we need you!

We totally understand that time is precious and that life can throw us curve balls from time to time, but one thing is for sure and that is we are not getting any younger, so don't put off your enjoyment today, come and support us so we can be around for many years to come.

With this in mind after several enquiries about a Regional two day event within the Targa NZ event, we are pleased to announce that we will be offering a two day Sunday 27th /Monday 28th event.

There will be Tour, Time Trial and Competition options and the website will be updated shortly with all the information.

So that's it for us, ball is in your court, Lisa is ready and waiting to help with your entries, so give her a call or send her an email and come and join us!

Lisa Ford

info@urg.co.nz

0274304573

PEUGEOTEST ANSWERS FROM PAGE 9

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

WELCOME TO A NEWEST
MEMBER -
Chris TURNER of Half Moon
Bay, Auckland

TOO GOOD TO BE TRUE?

The H2Starfire engine.

Astron aerospace has shown a partial prototype of a new rotary combustion engine it claims runs at an extraordinary 60% thermal efficiency, burning totally clean with zero NOx emissions and nothing but fresh water out of the tailpipe.

With internal combustion engines (ICE) on the way out and electric vehicles (EV) on the way in – both politically and environmentally – innovative ways of using renewable energy for clean transportation are at the forefront of many engineering minds.

Astron Aerospace has recently announced its latest novel innovative engine, the H2Starfire. It's a sort of Wankel-rotary design, but with an interesting twist: there are no planetary gears or apex seals. Instead, there are two counter-rotating shafts that have incredibly tight, frictionless tolerances, using ceramic coatings and titanium to prevent the escape of pressurized gas and mitigate heat deformation. We're talking 0.002-0.004 of an inch (less than 0.1 mm) tolerances.

The "H2," of course, stands for hydrogen – a gas that's notoriously difficult to store and transport. The most common method of producing hydrogen as it stands is steam methane reforming – cheap, but not green. You can also make it by splitting water in an electrolyzer using

renewable energy, which makes it green, but not cheap. You then need to squash it to 700 times atmospheric pressure, or cool it close to absolute zero to store it – and even then, it'll boil off, and its tiny molecules will gradually sneak out straight through the walls of metal containers.

Compared to batteries, it's an inefficient and ornery way to store energy. But when burned at temperatures under 1,400 °F (760 °C) in the right conditions, it'll happily run a combustion engine that provides all the noise, vibrations and mechanical drama that petrolheads are scared to lose – and the only byproducts emitted are clean, pure water and a few unfortunate nitrous oxides (NOx) at higher temperatures. Many companies appear to view hydrogen combustion as the clean future of 'enthusiast'-grade vehicles.

And that's the plan for the Astron H2Starfire. Using two sets of counter-rotating rotors with an aluminum front half for the engine's intake and compression and a titanium rear half for expansion and exhaust, Astron claims it's been able to eliminate the need for water cooling entirely, reducing weight and complexity, and achieving greater than 60% thermal efficiency.

For comparison, a typical car engine runs at closer to 20% thermal efficiency according to Green Car Reports, meaning 80% of the energy released in combustion is lost as waste heat. The best street car engines get closer to 40%, and you might get 50% from a Formula One engine built out of

yeti teeth and unicorn dandruff. Sixty percent is an extraordinary claim.

Extraordinary claims demand extraordinary proof, and while Astron appears to have built and run a partial prototype, we don't feel this proof currently qualifies as extraordinary:

By Joe Salas in NEW ATLAS.

NEW SOURCE OF LITHIUM

Lithium America has found 20–40 million metric tons of lithium along the Nevada–Oregon border in a volcanic crater.

Lithium has become one of the most valuable commodities on the planet because of its potential to change our world. But unlike other resources, being used in our renewable future, lithium is limited to what we can find on Earth. Much of the world's lithium isn't accessible and cannot be mined to help fuel the green revolution.

Popular Mechanics estimated that there were roughly 88 million tonnes of lithium on the planet but added that only about one-third of the supplies were minable by humans, and the issue is compounded by the time it takes to mine. Not only could the lithium deposit in Nevada be one of the largest in the world but it could also be one of the easiest to mine from the Earth.

HYDROGEN HERE

Did you know that New Zealand is one of the first countries to introduce the Hyundai XCIENT – the world's first commercial hydrogen fuel-cell heavy duty truck – with NZ Post quick to take advantage of this pioneering technology? The recent opening of the Hydrogen refuelling network- Hirlinga Energy- now means that 80% of the North Island's transport corridors can support hydrogen powered trucks.

Hydrogen is a great alternative fuel for times like these. We can produce hydrogen when grid availability is high and use the generator when availability is low, softening the peak load on the grid.

Offering a sustainable option when access to the grid is limited, the Hyundai Portable Generator System offers an excellent alternative to traditional fuel or diesel generators. This 160kW mobile generator is fuelled by hydrogen and can charge electric vehicles.

Depending on location or power availability, the grid is only sometimes available, like in the case of Hyundai ambassador and New Zealand Rally Champion, Hayden Paddon and his KONA EV rally car. We can catch Hayden and the Hydrogen Portable Generator System in action at the Ashley Forest Rallysprint on September 21st and 22nd -where the Hyundai Hydrogen generator will help power his runs.

For more details, see –
<https://www.hyundai.co.nz/hydrogen/portable-generator>

HYDROGEN STORAGE

While hydrogen's high energy per mass makes it an excellent fuel, it's awfully hard and expensive to store long-term. That could change, thanks to the work of researchers at Switzerland's ETH Zurich. They've worked out a way to store hydrogen in ordinary steel-walled containers for months without losing it into the atmosphere – using iron.

Discovering solutions in the past

The research team led by Wendelin Stark, Professor of Functional Materials at ETH Zurich, hit upon this method by drawing from the steam-iron process of producing hydrogen, first invented in 1784. The group's storage solution is especially suitable in places like Switzerland, where solar power is abundant in the summer, and scarce in the winter.

Surplus solar power is used to split water to produce hydrogen in the summer; it's then streamed into stainless steel reactors filled with iron ore at 752 °F (400 °C). The hydrogen extracts oxygen from the iron oxide, so you're left with iron and water in the reactor, ready to store without expending a lot of energy.

Steam is fed into the reactor to retrieve the stored hydrogen when needed; it can then be converted into electricity or heat easily enough.

There are also several other advantages of using this method:

- The iron ore used in the reactors is cheap, plentiful, and doesn't require processing.
- The reactors themselves are simply made of stainless steel.
- The charging process occurs at ambient pressure – negating the need for high pressure tanks (350-700 bar) typically necessary to store hydrogen gas.

The research team piloted its tech on ETH's Hönggerberg campus, using three stainless steel reactors. Each of them have a capacity of 1.4 cubic meters, and are filled with 2-3 tons of iron ore. The test plant can store about 10 megawatt hours of hydrogen for extended periods, and that'll yield between 4-6 megawatt hours of electrical energy. That's enough to run three to five Swiss homes in the winter. The pilot project is set to grow by 2026, with the team looking to meet one-fifth of the winter electricity needs of the campus using solar power from summer months. According to the team's research paper published last November, utilizing this system for a single home is currently more expensive than powering it with electricity from the grid. Scaling it up to 100 homes brings the energy cost

nearly in line with that of the grid, and it's estimated that it'll only get cheaper as the system expands.

It's hard to arrive at a clear levelized cost of storage from this small pilot project. And while Switzerland plans to go solar for more than 40% of its electricity needs by 2050, we don't know if it'll invest in hydrogen storage at a national scale. Still, this clever technology from hundreds of years ago seems promising for our seasonal energy requirements in the future.

ZINC-ION BATTERIES

Sweden's Enerpoly has flung open the doors to its zinc-ion battery megafactory in the north of Stockholm – making it the first manufacturing facility to use this battery technology at a large scale in the world. It is a better choice for storage in several ways:

- 1] They use a water-based electrolyte, which makes them non-flammable, and reduces the risk of fires and explosions.
- 2] They're less expensive, because zinc is far more abundant than lithium (which is difficult and expensive to extract), and easier to handle. They can also operate across a wider temperature range and require less maintenance, making them cheaper than lithium-ion options.

3] They're more eco-friendly for the same reason. In contrast, extracting lithium currently requires extensive mining as well as the use of massive evaporation ponds before processing even begins.

4] They're said to last a whole lot longer. According to the International Zinc Association, a nonprofit trade association which counts Enerpoly as a member, zinc-based batteries can last up to 20 years, while lithium batteries manage about 12 years.

This all sounds great, except zinc-ion batteries fall behind lithium-ion batteries when it comes to energy density. A quick bit of math looking at Enerpoly's zinc-ion cell shows its energy density is a modest 106.4 Wh/kg. Not that you'd directly compare them, but as a reference point, Tesla's 4680-type battery cell is estimated at somewhere between 244-296 Wh/kg

So while you won't get the highest energy density possible, you can look forward to cheaper, greener, and easier-to-live-with energy storage from Enerpoly's new plant. The company says its batteries are suited for 2-10 hour durations, discharging energy over moderate periods. That makes them useful for shifting energy loads from peak to off-peak hours and building more resilient power grids.

Source: Enerpoly

CLEAN ENERGY GENERATOR

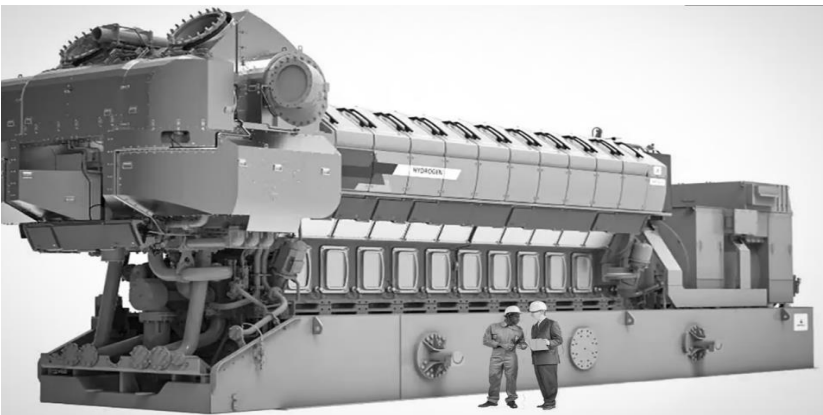
One of the world's largest engines is becoming a clean generator. Originally designed to burn diesel, dual-fuel, or gasoline for tankers and container ships, the Wärtsilä 31 marine engine is getting a new life generating clean, renewable electricity.

The Wärtsilä 31 engine is in the Guinness Book of World Records for being the most efficient 4-stroke marine engine ever made in its class. It also boasts the highest power per cylinder in engines of equivalent bore size. It can be configured in 8 to 16 cylinders and with a power output ranging from 4.6 MW to 10.4 MW at 720 and 750 rpm.

This Finnish company is best known for making the world's largest combustion engines – notably the 89 ft (27 m) tall, 44 ft (13 m) long, 110,000, the horsepower RTA96-C. The Wärtsilä 31 engine is a fair bit smaller, maxing out at 15.4 ft (4.7 m) high and 28.8 ft (8.7 m) long, and running on fossil fuel, it can crank out up to 13,142 horsepower (9,800 kW).

The hydrogen power station is designed for firming up a renewables-based grid, quickly ramping up or down to support intermittent clean energy sources such as solar and wind, with no minimum up or downtime and the ability to ramp up and synchronize with the power grid in as little as 30 seconds with the push of a button. By using hydrogen, Wärtsilä can generate electricity 100% carbon-free...

Its hydrogen-ready engines are expected to be available for delivery by 2026.



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CLASSIC CARS IN BRITAIN

Responding to a Freedom of Information request from the leasing comparison site, DLVA records (correct to 15 December 2023) show that 338,697 classic cars are still retained by motorists in Britain. Of these, 12 per cent are not actually being driven on the road by their owners.

Cars that are 40 years or older qualify for a number of exemptions, including no VED, MOTs or charges for clean air zones, like London's ULEZ.

However, unlike the MOT exemption, avoiding paying road tax doesn't happen straight after your vehicle reaches its fourth decade. Instead, you have to wait for the first day of April, and then as long as your car was registered 40 years before the first of January you can apply for road tax exemption from thereafter.

As for MOTs, the exemption is due to a general understanding that classic cars are retained by enthusiasts who either carry out maintenance on their vehicles or pay specialists to do so.

FEMALE INVENTORS

Stephanie Louise Kwolek (July 31, 1923 – June 18, 2014) was an American chemist best known for inventing Kevlar. Her career at the DuPont company spanned more than 40 years.

She discovered the first of a family of synthetic fibres of exceptional strength and stiffness: poly-paraphenylene terephthalamide.

For her discovery, Kwolek was awarded the DuPont company's Lavoisier Medal for outstanding technical achievement. As of August 2019, she was the only female employee to have received that honour. In 1995 she became the fourth woman to be added to the National Inventors Hall of Fame. Kwolek won numerous awards for her work in polymer chemistry, including the National Medal of Technology, the IRI Achievement Award and the Perkin Medal.

JOKES OF THE MONTH

- Squirrel who runs up woman's leg will not find nuts.
- Man who leaps off cliff jumps to conclusion.
- Passionate kiss, like spider web, leads to undoing of fly.
- Lady who goes camping with man must beware of evil intent.





Above –Graham Pooley receiving the Ian Grimmer Long Distance Trophy
Below – The 2024 Trophy lineup



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