Peugeot Car Club (Auckland)

Peugeotex©

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November 2022

Front cover – Andrew Corbett's 308RCZ at Smales Farm.
Above – Andrew Corbett

Peugeot Car Club (Ak) Inc
P O Box 29002
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COMING EVENTS

peugeotclub.org.nz

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

~~**November 20 - Navigation Trial**~~

February 12 – Ellerslie Car Show

March 5 – Brit & Euro Car Show

March 12 – Gymkhana at Cato's Farm

THOUGHT FOR THE MONTH

Power always attracts those who will abuse it.

P O BOX 29002
Epsom
Auckland 1023

PRESIDENT'S RAMBLE

A short one has been ordered by the Editor, so let's get to club business. We haven't managed to get anyone available to organise the Navigation Trial, at least not for this month, so it is either cancelled or postponed to sometime next year. Anyone wanting to give it a go at organising is welcome. If keen, let a committee member or the whole lot of us know. You can even nominate your own date, just don't make it December. Have a look at the coming events and see if you can slip it in somewhere there before the end of June.

We just held the Show and Shine, when we turned up we found the usual entrance blocked and temporary fencing up all over the place. It was like it was the Navigation Trial just to find the carpark! A mix of vehicles, a couple of 505s, a 306 and 203 from last century, 406, 308, 607 and RCZ from this with a Honda Jazz supplying a couple of non-critical spectators.

Apologies were received from Graham Pooley and Don Hadfield who were unable to attend as they had desired.

The age spread was between 2 years old for the 308 through to 67 years old for the 203. A similar age gap was also present amongst the members, but I will go into that no further.

Unfortunately on his first attempt to meet the club and some of its members, Nathan Strawbridge had a break down in his 504 on the motorway, but was thankfully assisted by the NZ Police to get to a safer parking spot to wait for the AA. I had been looking forward to meeting both him and his car but it will have to wait.

Although I judged one section of the Pride of Ownership I paid neither enough attention to the judgements or to Jeanette on who won, or even if my own 505 was first or second in its class. I guess like most of you I will have to read her article to find out.

Right that's it, will write to you again next month.

Brent

COMING EVENTS

~~**November 20**~~	Possible Navigation Trial; details to follow **CANCELLED**
February 12	Ellerslie Car Show's Concours d'elegance
March 5	Brit & Euro Car Show, Lloyd Ellesmere Park
March 12	Gymkhana at Cato's Farm

JEANETTE'S JOTTINGS

Research findings suggest that drinking tea is beneficial in reducing the risk of type 2 diabetes by 17%, but only at high doses (at least 4 cups a day)".

The European Union has banned cat declawing.

It is believed that the Moon formed 4.5 billions of years ago, from debris from a cosmic collision with Earth. New high-resolution simulations not only illustrate the idea in stunning detail, but reveal that the Moon's birth might have taken mere hours.

The UniWave sea platform is an artificial blowhole that harvests energy from ocean waves. Independent analysts now predict it will create some of the cheapest renewable energy on the market – and some of the most reliable and predictable, as well.

As the shipping industry moves to decarbonize, huge sails could be making a comeback. The China Merchant Energy Shipping company (CMES) has taken delivery of a new supertanker, whose four large sails will cut down average fuel consumption by nearly 10%.

The Chinese city of Dalian has just switched on a world-leading new energy storage system, expected to supply enough power for up to 200,000 residents each day, with an initial capacity of 400 MWh and output of 100 MW.

K Charles drives an electric Audi.

Aeromine says its unique "motionless" rooftop wind generators deliver up to 50% more energy than a solar array of the same price, while taking up just 10% of the roof space and operating more or less silently.

Wallabies are public enemy number one in Otago - and they're invading the region. Funding to kill off the breakaway population has increased, allowing hunters to take to the skies to get on top of it. Armed with a shotgun, thermal camera and helicopter, Trap and Trigger contractors have one thing in their sights - wallabies. They're flying around the wilderness of Otago trying to eradicate the introduced pest.

A newly released report from Employment Hero, titled '2022 Remote Work Report', found 48 percent of employees surveyed said they would consider quitting their job if their employers forced them back into the office full-time.

Tree rings are not just a great record of a tree's life, but they can preserve a snapshot of the Earth and beyond at different times. Now Australian scientists analyzing these records have found evidence of huge radiation storms that periodically bathe the planet – and their origin remains a mystery.

The speed record for data transmission using a single light source and optical chip has been shattered. Engineers have transmitted data at a blistering rate of 1.84 petabits per second (Pbit/s), almost twice the global internet traffic per second.

New research shows that swarms of insects like bees and locusts can actually produce atmospheric electric charges. By measuring the extent of this influence, the team found that large swarms could produce as much charge as a storm cloud.

Dried peas on a drum were used to detect tunnelling attempts in besieged fortresses .

MY LINE

by Malcolm Edgar,
Editor, Peugeot Torque

The introduction of electronic technology and software into the modern car appears to have accelerated in recent years. Fortunately, it appears the pending arrival of the fully autonomous car, so often the topic of media attention a couple of years back, has been slowed, as the reality of introducing them into the real world hits home. Having said that, I understand they are already in use in a few locations where extensive local road infrastructure provides all the necessary checks used to keep the occupants and other road users and pedestrians safe.

In the name of safety, regulations in Europe have added another acronym to a growing list, where technology is being used to warn drivers, or control the car. ISA (Intelligent Speed Assist) is now required to be installed in all newly launched cars to be sold in Europe this year, including the UK, and on all existing models sold after July 2024. Using cameras, GPS etc, this system recognises speed restriction signs and either warns the driver, or controls car speed via a speed limiter device. For now, the ISA can be switched off for the journey or overridden via the accelerator, but how long will it be before speed will be out of the driver's control?

A personal gripe I have is the focus by manufacturers in providing larger and larger infotainment screens in the centre of the dashboard, and Peugeot is included with almost all other manufacturers, and Tesla is probably the worst! These touch screens and the software behind them are now being used to control many functions previously operated by switches. For example, the air conditioning settings. At a time when we are regularly reading about or seeing on TV news of another tragic road accident involving a head on crash, or single car accident, driver distraction is often blamed. We all know about the dangers of using a mobile phone on the move, but I suggest these screens provide as big a driver distraction, by the need to take your eyes off the road to interact with the touch screen. What surprises me most is that the authorities have made nothing of this issue, focussing on phones.

A new survey from Sweden has found that – shock, horror - using a touchscreen in a car is much more difficult and distracting than physical knobs and buttons. The study was performed by auto magazine, Vi Bilagare, using a dozen vehicles on an airfield circuit. Drivers had to do four tasks using the touchscreen where one was fitted. The time their eyes were of the road was noted. Switches won hands down!!!

Malcolm Edgar,

Peugeot Torque #97- June-Sept 2022
Peugeot Car Club (Wellington) Inc.

NZ's only 403 CAMIONNETTE

FROM Peugeot Torque 97

Mike Hodgkinson of Taranaki takes a personal interest in the Peugeot 203 and 403 Register – as he owns a very rare specimen himself.

"It was built in Peugeot's Sochaux plant on the 10th March 1964 (Peugeot Identification certificate #1744 Tb dated 13 July 2017) and was imported into NZ by the then Peugeot agents Campbell Motors Ltd, being first registered in Auckland on 8th July 1964,

You could have any colour you wanted as long as it was grey, but Campbell Motors painted it in their company red colour, and used it as their spare parts department vehicle until it was sold to Roger Stuart on 1st October 1975 - mileage reading 76,300 miles. He was the son of their vehicle assembly plant manager in Thames. At that time, Campbell Motors assembled several makes including Peugeot. It was subsequently painted the current light brown colour by Roger Stuart.

Roger Stuart used it as a commercial fishing vehicle and was fastidious in keeping records of the repairs and maintenance (all of which I still have). He sold it to his niece and her husband (Jane and Kevin Powell) on 13th July 1999 (mileage 76707 – but probably 176,707!!). I bought it from the Powells on 12th October 2014. Since then I have given it a sympathetic refurbishment, trying to use original spare parts wherever possible.

Starting with the motor and accessories.

The motor was fine having been reconditioned in the not too distant past. However it needed a new radiator as the original had been replaced with a large capacity GM Holden unit (presumably for the commercial fishing venture including towing a small boat). Next up was a mechanical fuelpump as an electric one had been fitted, followed by generator and starter overhaul, with a new water pump and reconditioned distributor, coil amd leads.

Motor and gearbox were removed at Adlam's Citroen Motors with the help of my good friend Denis Adlam and everything cleaned. The gearbox had a very noisy bearing and second gear was not happy, so I replaced it with a spare box I had "in stock". At the same time, it went for some chassis rust to be removed and the front cross member replaced. Gear change, indicator and light stalks were in need of new housings and the speedo head and cable were replaced.

Then the tricky bit – the brakes; one drum had been WELDED back together and as they were 5 stud, large drums are not that easy to come by. Fortunately, my friend Sven Slager has very good contacts in the Netherlands and managed to find me a second hand replacement. You guessed it – It cost a small fortune to fly out to NZ but allowed me to then machine all drums, with new pads, and overhaul the cylinder, plus fitting new handbrake cables and pressure switch.

The wheels were sandblasted and painted before fitting original spec Michelin tyres. the front shock absorbers were replaced with refurbished ones and new bushes were fitted.

I spent a long time on my back cleaning the underside before rust-proofing the front half and painting with chassis black. In February 2019 I decided to take the plunge and strip the body panels from the cab forward. the doors, guards and front

valance were acid dipped and etch primed. I stripped a replacement bonnet that Sven Slager had spare, and then sent them away to a specialist restorer for panel work. Many hours later the cab and panels were prepped for pre paint and my good friend and painting magician Murray Rowe came to give advice on final body prep prior to painting. My lack of skill was subtly pointed out and hours of his professional touch helped to give a fantastic surface for paint.

I should point out that I wasn't looking for a perfect "show car" finish but more the ex-factory commercial look of the 60s which I'm glad to say we achieved. Fortunately, there is very little chrome or stainless steel on the pickup so I cleaned up the door handles, replaced the locks and key cylinders and fitted new windscreen wipers and front sidelights. (I still have to find some new headlight Bezels).

All the door, window and windscreen mechanisms were cleaned and serviced and door rubbers and window felts replaced.

On re-assembly I put a new windscreen and rubber in but reinstalled the two back windows as they were in good condition, although I did have the glass tested and stamped. (A requirement for the NZTA Warrant of Fitness inspection).

I spent a long time trying to find a replacement bench seat but as this is the only 403 pickup in NZ it was impossible, so I found front seats from a sedan and had them, the door cards and dashboard recovered in grey vinyl. Although I have the original grey rubber mats, I decided to fit black carpet with sound insulation. Dynamai was laid throughout and in the doors as well as rust protection throughout, with thick underfelt to quieten the engine noise.

It sailed through the WoF inspection and is now registered again and on the road for the NZ summer. My next task is to refurbish the rear end but as it is only panel and paint I will be able to use it during the rework (I hope). The rear suspension is pretty much sorted but still needs bushes. The fuel tank will be removed and cleaned inside and out with a POR 15 liner installed.

This was the only Peugeot 403 U8 pickup ever imported as a genuine factory direct vehicle (as confirmed by Hugo Bedford, a director of Campbell Motors) and is now the only known one remaining and registered in NZ."

Mike Hodgkinson

THE WAY IT USED TO BE

by Don Howarth

During my end of year school vacations in the 5th & 6th forms (I think) my dad, through one of his good friends, got me an assembly line job at VW Motors Ltd, Otahuhu. I had my own transport - this being a Puch 125cc motor scooter - so travelling from home in Epsom to Otahuhu was not an issue.

VW Motors was located in Fort Richard Rd, Otahuhu opposite the Passenger Transport Co Ltd, where their South Auckland bus depot was found. This company was started by Arthur & Noel Turner in 1951 assembling Jowett & Bradford vehicles before gaining assembly rights for VW vehicles in 1953.

They started VW assembly with the Beetle car but followed that with Kombi vans and Transporter vans, later going on to assemble Peugeot 403 and a small Renault car in very limited numbers. All such "foreign" vehicles were subject to tough Import Licensing, so were hard to come by compared to British vehicles which had much lower import duties and had to be locally assembled with a certain percentage of locally made parts e.g. Batteries, tyres, carpets, seats, door cards, etc.

My role, on the assembly line was to fit the dashboard to the Beetle, a simple job as I recall, as this 1950's model only had a single instrument, a speedometer containing an ignition light and an oil pressure light (from memory). During fitting the speedometer was connected to a cable & the two electrical wires were connected to their respective terminals.

For those of you who have never owned or driven a VW Beetle, they had no fuel gauge, the fuel tank having a "reserve" tank, which one accessed under the dash on the firewall, by twisting the lever 90 degrees. That gave about another 30 miles before running the tank dry, so neglect to refuel when on reserve tank at your peril.

The Beetle was air cooled so no temperature gauge was provided. As I had only driven the English Hillman Minx, of 1951 vintage at that time, I thought the VW was a spirited and clever car, with a good floor mounted gear lever, although I was warned to be careful in the wet especially at roundabouts, as the swing axle rear suspension had a bad habit of "letting go" if you accelerated hard leaving a corner. Swapping ends was a dangerous risk for the uninitiated, as many a Porsche 911 owner of 1960s & 1970s may remember.

I do remember seeing the occasional 403 Saloon being assembled on a different line, taking a great deal longer to be built than a Beetle, as they were bigger, had four doors and were front - engined but rear driven and I have read in NZ Classic Car magazine that the jigs used were rudimentary, so the body assembly needed more adjustment than the simple Beetle body.

As Campbell Motors Ltd found out later, when they assembled the 404 Saloon at Thames, help from Peugeot France with jigs and assembly practices was not forthcoming, perhaps due to language difficulties in communication between France and New Zealand.

I don't believe that similar difficulties were experienced between the German VW manufacturer and the NZ assembler.

Don Howarth

BETTER BATTERIES

Bigger batteries that can store more energy are only part of the puzzle when it comes to driving mainstream adoption of electric vehicles, with scientists also working to minimize future plug-in times through advances in fast-charging technology. Scientists at Pennsylvania State University have operated at the cutting-edge of this field for some time and are now presenting another significant breakthrough, demonstrating a high-density battery that can be charged up in around 10 minutes.

Led by Chao-Yang Wang, the advance comes from an engineering team responsible for some impressive breakthroughs in recent years. In 2016, the team tackled the issue of hampered cold-climate performance for lithium batteries by integrating a self-regulating temperature mechanism. This centred on a nickel foil that rapidly warms the battery up in subzero temperatures, enabling it to function normally.

In 2019, the team leveraged this technology to charge a prototype lithium battery at high temperatures, conditions that would normally cause it to degrade. This again involved the use of a thin nickel foil, through which electrons flow to rapidly heat the battery up in just 30 seconds, before it is quickly cooled again. This was done in a way that allowed the battery to take advantage of faster charging offered by high-temperatures, but didn't cause it to degrade.

This research demonstrated that an electric vehicle battery could be charged in 10 minutes to offer a range between 200 and 300 miles (320 and 480 km). The scientists have continued to chip away at this technology and in freshly published research, have combined this fast charge time with higher energy density in a new prototype battery.

It again uses the nickel-foil heating element to accommodate faster charging times, with the latest version of the battery featuring an energy density of 265 Wh/kg, a step up from the 209 Wh/kg of the previous version. This energy density and short charge time is described as a record-breaking combination, and could open up some interesting possibilities in electric vehicle design, according to the team.

"The need for smaller, faster-charging batteries is greater than ever," said Wang. "There are simply not enough batteries and critical raw materials, especially those produced domestically, to meet anticipated demand."

The battery was able to be charged to 70% in 11 minutes for 2,000 cycles, which the team says is equivalent to half a million miles covered purely via fast-charging. It sees this new battery technology opening a door to cheaper, smaller, energy-dense battery packs that can be quickly topped up to keep people on the move. This would be contingent on widespread access to the appropriate charging infrastructure, but if all it involves is a 10-minute stopover, you can imagine the tech proving popular in towns and cities.

"Our fast-charging technology works for most energy-dense batteries and will open a new possibility to downsize electric vehicle batteries from 150 to 50 kWh without causing drivers to feel range anxiety," said Wang. "The smaller, faster-charging batteries will dramatically cut down battery cost and usage of critical raw materials such as cobalt, graphite and lithium, enabling mass adoption of affordable electric cars."

The team is working to commercialize the technology through spinoff company EC Power, and has published the research in the journal Nature.

by Nick Lavery

Source: Pennsylvania State University

PRIDE OF OWNERSHIP

PRESENT; John Cooney, Andrew Corbett, Brent Druskovich, John & Jeanette Grant, Don & Wynne Howarth, Dennis & Rosalind Lowe, Jayden, Jenna, Joel, Kevin, Marissa & Nat Hardie, Ivan Samuels, Beverley Williams.

Sunday 6 November proved to be a much better day weather-wise than the original date planned for the previous week. It was a pleasant day with a gentle breeze and no showers. However, on approaching Smales Farm from the motorway, we were faced with the omnipresent bank of cones as the entrance we had been told to take was closed. Driving round the block into the main carpark was initially most discouraging as there seemed to be no empty parking spots visible.

Fortunately however, Brent did a spot of exploring past the roadworks and blocked off parking areas and was able to lead us to an empty section - way out the back - which we virtually had to ourselves. Thanks to John C, Don H and Brent D for acting as judges and assessing all the cars in one of three categories. The total number of possible points was 160 with small allowances made for age and mileage.

The Hardie family were late arrivals but we knew they were on the way and they were assessed asap. (Kevin how has two sons with their own cars, even if Joel is still on a learners licence.)

This was a great chance to admire each others' cars and have good conversations. We should do it more often.

NAMES	MODEL	YEAR	POINTS TOTAL	CLASS PLACE	TOTAL PLACE
Andrew Corbett	308 RCZ	2011	145	1	2
John Cooney	308GT	2020	141	2	4
Brent Druskovich	505V6	1988	118	1	6
Jeanette Grant	306xrdt	1996	112	2	8
Jayden Hardie	203C	1955	131	1	5
Joel Hardie	505STi	1983	116.5	2	7
Don Howarth	406Coupe	2002	142	1	3
Dennis Lowe	607	2005	145.5	1	1

Left to Right –
Don Howarth's 2002 406
Brent's 1988 505V6
John Cooney's 2020 308

ABOVE –
Dennis Lowe's 2005 607

RIGHT –
Joel Hardie's 1983 505

EV BATTERIES OFFERED A 25% DENSITY BOOST

Scientists tinkering with commonly used battery materials have come up with a way of tweaking their microstructures to improve energy density. The work points the way to electric vehicles that can travel farther on each charge, with the scientists hopeful further experiments can boost the performance even further.

The work was carried out by scientists at the Skolkovo Institute of Science and Technology and focuses on one of the battery's two electrodes, called the cathode. In many lithium-ion batteries, this electrode is made of layered transition metal oxides known as NMCs that are rich in nickel and made up of octahedron-shaped particles.

This means that when two of these particles come together, there are inevitably empty spaces at the boundaries as none will fit together seamlessly. The scientists were able to alter the configuration of two common NMCs by tweaking the synthesis procedure, carefully integrating inert salt to promote the formation of spherical particles over octahedron-shaped ones.

"Our material is a single-crystal NMC with spherical particles, combining the best of both worlds as far as maximizing density goes," explained study co-author Aleksandra Savina. *Unlike polycrystals, the powder particles don't have internal structure, so there are no wasted spaces at grain boundaries. But on top of that, you can also pack more spherically shaped single crystals into the same limited volume than octahedron-shaped ones, so you get more density on that account, too."*

This new cathode material offers an increase in energy density of up to 25%. The scientists suspect that even more energy can be packed into the same volume through further experimentation with the particle size, perhaps mixing smaller and larger ones to further increase the cathode's density. …Also the spherical particles minimize surface contact with the battery's electrolyte, slowing the cathode's degradation.

"Cathode materials are an important bottleneck as far as electric vehicle batteries are concerned," said principal investigator Professor Artem Abakumov. *"The cathodes in batteries powering electric cars tend to use layered transition metal oxides, including nickel-rich ones. We improved two commonly used materials of this kind, achieving a 10%-25% increase in energy density. This translates into smaller cathodes, more compact batteries, and therefore greater energy storage capacity for the same volume. As an added bonus, the material is slower to deteriorate."*

The research was published in the journal Energy Advances.

OCEAN ENERGY

Irish company OceanEnergy has already tested its oscillating water column generators at significant scale in Hawaii, and it's just signed on to a four-year project to test, validate and commercialize its biggest unit yet off Orkney, in Scotland.

The OE35 is billed as the world's largest capacity floating wave energy device. While no dimensions have yet been drawn up for the machine to be built for Scotland as yet, the machine the company built for testing at a US Navy test site in Hawaii measures 125 x 59 ft (38.1 x 18 m), with a draft of 31 ft (9.4 m) and a total weight of 826 tons. In testing, it ran at a capacity of 500 kW, but the device was, and is, capable of 1.25 MW.–

Source: OceanEnergy

RETROFIT SYSTEM CONVERTS EXISTING DIESEL ENGINES TO RUN ON 90% HYDROGEN

UNSW researchers have prototyped and tested a retrofit system that converts diesel engines to run on 90% hydrogen, radically reducing both carbon dioxide and nitrous oxide emissions while boosting efficiency by an impressive 26% in the process.

Running 10% diesel, the process is not a full green conversion for diesel engines, but it does offer a way for certain businesses to hugely reduce their emissions output without wastefully junking existing assets that could still remain useful for a long time.

The retrofit system keeps the diesel injection system, but adds hydrogen injection directly to the cylinder, as well as independent control of injection timing for both the hydrogen and diesel systems. It doesn't require particularly high-purity hydrogen, and the team has demonstrated that its "stratified" hydrogen injection technique, which creates pockets of higher and lower hydrogen concentrations in the cylinder, reduces the incidence of nitrous oxide emissions below that of a straight diesel.

The overall carbon dioxide emissions drop by some 85%, to around 90 grams/kWh of energy – that would certainly represent a solid intermediate step towards total decarbonization for many operations using large fleets of diesel vehicles.

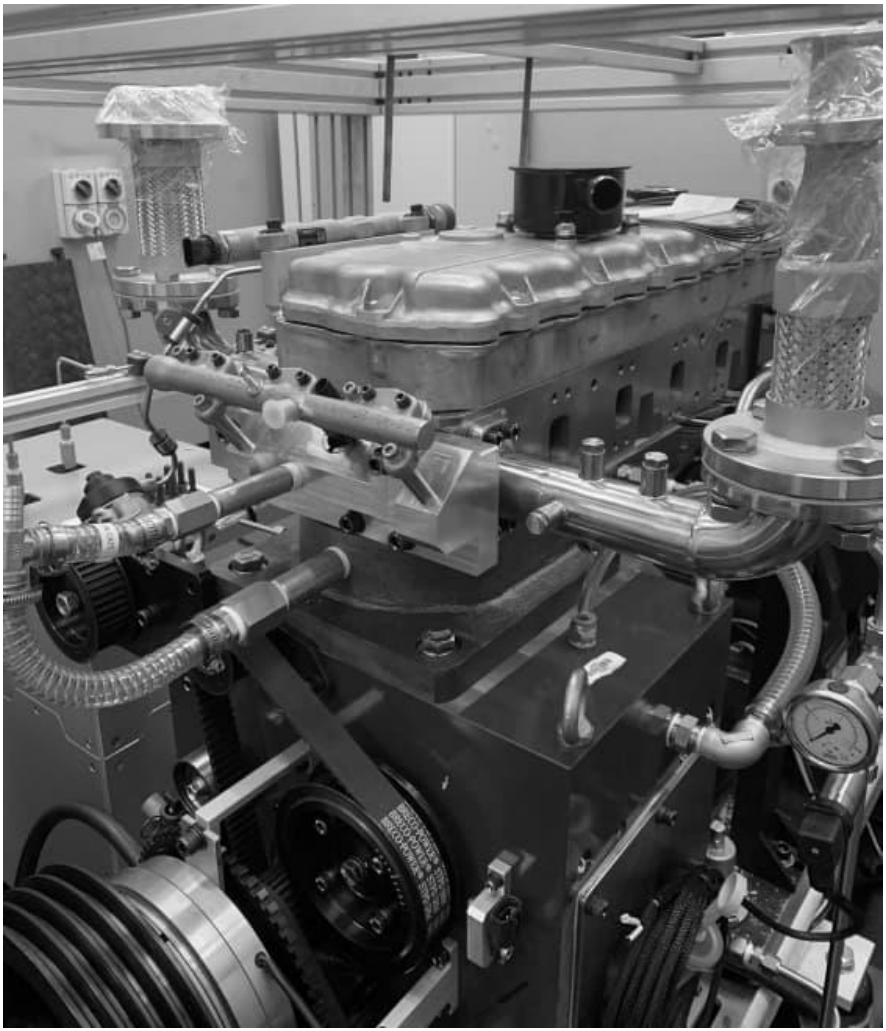
Of course, it relies on hydrogen being available – which, in most areas, is not yet the case. But as the key green vehicle alternative to lithium batteries, hydrogen's time may be coming. Lithium supply shortages look set to rock the battery EV market in the coming few years, right when government regulations start kicking in to seriously accelerate the transition to zero-emissions driving in many jurisdictions. And green hydrogen projects are springing up all over the globe.

Still, for the time being, the UNSW team is working to get its diesel engine retrofit systems commercialized within the next two years, and it's targeting industrial fleet and generator operators like mining operations, many of which already have hydrogen piped to the site. Again, this is currently unlikely to be green hydrogen, so the initial uses might effectively just be transferring their emissions to some Haber-Bosch plant down the street. But as the green hydrogen industry ramps up, it'll be important for investors to know there's reliable and growing demand from vehicles out there already using hydrogen and looking for a cleaner solution.

“We have shown that we can take those existing diesel engines and convert them into cleaner engines that burn hydrogen fuel," said Professor Shawn Kook, lead author on a paper just published in the International Journal of Hydrogen Energy. "Being able to retrofit diesel engines that are already out there is much quicker than waiting for the development of completely new fuel cell systems that might not be commercially available at a larger scale for at least a decade. With the problem of carbon emissions and climate change, we need some more immediate solutions to deal with the issue of these many diesel engines currently in use.”

For a lower-friction approach – albeit one with less impressive results – there are other retrofit systems being developed, like the HYDI direct injection device, which generates its own hydrogen as you drive, and injects it into the air-fuel mixture to help the diesel ignite faster and more completely. It requires nothing but an occasional water top-up, so it's completely non-reliant on hydrogen fueling infrastructure, and it reduces fuel consumption by 5-13%, while also cutting down on emissions.

Source: University of New South Wales



Retrofitting existing diesel engines to run mainly on hydrogen may be a fast way for large fleets to rapidly reduce their carbon footprints without junking existing assets –

Source Prof Shawn Kook/UNSW

The Draft minutes of the 27th NZ Federation of Motoring Clubs Inc (FoMC) AGM, held at the North Shore Vintage and Classic Car Club on Sunday 24 July 2022 are available on the FoMC Website. - Chris Butler, Secretary, NZ FoMC.

CHEAP WIND HARVESTER GENERATES ELECTRICITY FROM A GENTLE BREEZE

While wind energy systems can come in some pretty big forms, scientists at Nanyang Technological University (NTU), Singapore have been working on a low-cost solution at the other end of the spectrum. The team has developed an inexpensive device sensitive enough to capture energy from a light breeze and turn it into electricity, generating enough to run a small commercial sensor.

The harvester is small, low-cost and measures around 15 x 20 cm (6 x 8 in). It consists of a cantilevered beam attached to a middle plate made of layers that harness energy through the triboelectric effect, in which different materials become electrically charged as they separate, in this context caused by vibrations from the wind. We've seen this type of triboelectric technology deployed in other advanced wind harvesters, such as wearable devices that generate energy from the wind as you walk.

The NTU team's device is instead designed to be mounted on the exterior of buildings in urban environments. In their testing, the scientists showed it could harvest energy from a light breeze and can generate up to 290 microwatts of electricity, produce up to three volts and also store electricity for use when there is no wind.

In one experiment, they used the device to power 40 LEDs consistently from a wind speed of four meters (13 ft) per second. In another, it was used to power a sensor that wirelessly relayed room temperature data to a mobile phone. The team is continuing work to improve the performance of the device, and are filing a patent as they pursue commercialization of the technology.

"*As a renewable and clean energy source, wind power generation has attracted extensive research attention*," said Professor Yang Yaowen, who led the research. "*Our research aims to tackle the lack of a small-scale energy harvester for more targeted functions, such as to power smaller sensors and electronic devices. The device we developed also serves as a potential alternative to smaller lithium-ion batteries, as our wind harvester is self-sufficient and would only require occasional maintenance, and does not use heavy metals, which if not disposed of properly, could cause environmental problems."*

The research was published in the journal Mechanical Systems and Signal Processing.

By Nick Lavars

Source: Nanyang Technological University

LETTERS TO THE EDITOR

Dear Madam Editor

Regarding the Jowett flat four engine, built for 34 years.

Peugeot's Associate Citroen built the 375 to 602cc 2 cylinder engine from 1948 to 1990; - 42 years.

Another Citroen and Fiat Associate, Chrysler, built the flat head 6 cylinder from 1926 to 1964; - 38 years

The Mini Engine, A series, designed by Austin, with a 3 bearing crankshaft and crankcase was built from 1951 to 2000; - 49 years

Thank you
Steve Cornwall

[Thanks Steve; JG Ed]

THE GAME OF THE NAME

Badge engineering. It's often thought of as a lazy way for car manufacturers to inject life into an uninspiring range – simply build a sporty version and give it a badge with competition or sporting equity, and watch the profits roll in. In theory.

However, badge engineering also allows automotive conglomerates to offer well-regarded, big-selling designs all around the world, with minimal changes and a new name designed to appeal to the local clientele.

Or if a car maker doesn't have a presence somewhere, it can license complete knock-down (CKD) kits to local car makers, who build and sell the car to the customers. So they get all the profits with none of the hassle of actually screwing the vehicles together. Winner winner.

Examples can be found of at least 18 classic British cars which have been reinvented overseas in this way.

This is nothing new. The Austin Seven (1923-'39) became the BMW Dixi (Germany), Rosengart (France), Datsun Type 11 (Japan)

The 'baby Austin' was not only one of the most popular cars in the United Kingdom, but it also replicated that success around the world. But not as an Austin, because it was licensed to various car makers in other countries.

So, for example, in Germany it was the BMW Dixi (BMW's first car), and in France it was a Rosengart.

In Japan, in 1932, there was the Datsun Type 11, which bore an uncanny resemblance to the Austin Seven, but there's still some debate as to whether a licence was granted for this.

Later on for instance – the Austin 1100 - It was sold in the US as the Austin America, in Italy as the Innocenti Morris IM3 and IM3S, in The Netherlands as the Austin Glider, and in New Zealand as the Riley Kestrel and Wolseley 1100.

In 1956, Morris sold the rights and tooling to build the Morris Oxford in India to Hindustan Motors, which renamed it the Ambassador and didn't stop building it until May 2014.

Still, it had been updated in that time – in 1990 the old BMC engine was replaced with an Isuzu 1.8-litre unit, which suddenly turned the vintage machine into the fastest car on the road in India at the time.

Extracts from the article by Euan Doig

FAREWELL TO PUKEKOHE

After 60 years, motor racing is ending at Pukekohe and much of the loop used has already been sold by the Franklin Racing Club for development.

The inaugural NZ Grand Prix was held at Ohakea Airfield in 1950, then at Ardmore aerodrome from 1954 – 62. A new Pukekohe circuit hosted its first NZIGP in January 1963 with 43,000 fans turning up to watch the battles between local drivers and international stars.

However, the drivers using the course in later years considered it tired, bumpy and unsafe while the facilities were primitive. Crowd numbers dwindled.

The development of Hampton Downs has created a much superior circuit – and one which is much more easily accessed along the motorway.

ECOGAS

The Ecogas Reporoa Organics Processing Facility was officially opened on 20 October at Reporoa, in the central North Island in the presence of Hon Dr Megan Woods and representatives of Ngati Tahu-Ngati Whaoa Runanga Trust.

Once fully operational the flagship facility will turn 75,000 tonnes of organic waste, from businesses and kerbside food scrap collections throughout the North Island, into sustainable, renewable clean energy.

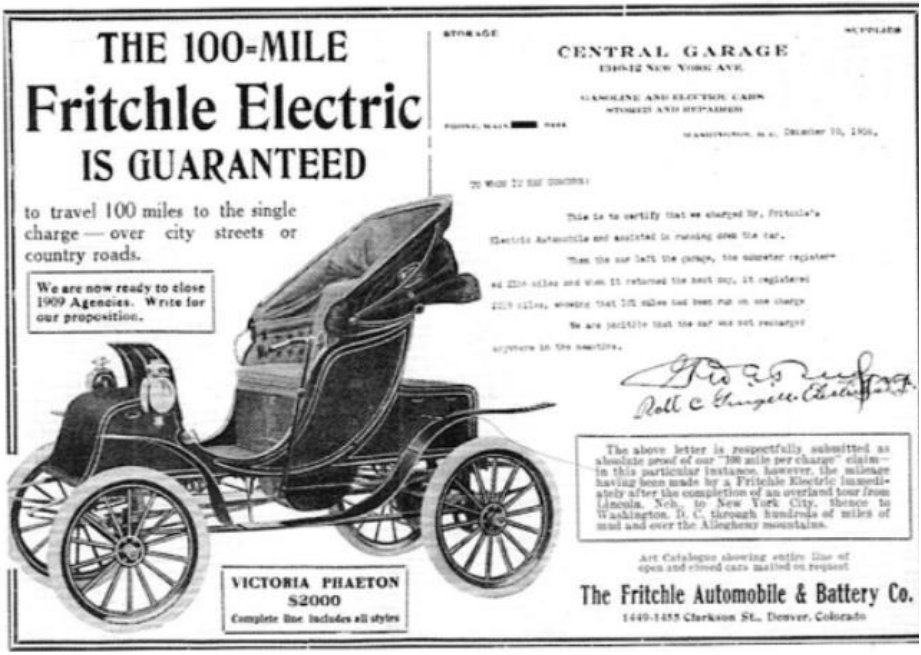
The facility will use anaerobic digestion - a technology already used successfully overseas - to generate enough energy to annually power up the equivalent of around 2500 households in the region, produce clean bio-fertiliser for approximately 2000 hectares of local farmland, and provide renewable CO2 and heat to enhance the growth of tomatoes in T&G Fresh's local glasshouse.

The Reporoa facility has been built over two years, weathering the Covid pandemic, lockdowns and global supply chain issues. The two Ecogas founding partners Pioneer Energy and EcoStock Supplies Limited have shown that courage, vision and expert skills can put New Zealand on the path to a more sustainable future.

Ecogas's core business is well aligned with central government's focus on decarbonisation, circular bioeconomy and waste management. The Reporoa facility has been built to the highest engineering standard to ensure minimal risk to community, environment, and customers. It is strategically located near the future users of the biofertiliser, renewable CO2 and bioenergy. These products are near direct replacements for existing solutions, meaning their users will not need to change their current practices.

The project was funded by Pioneer Energy. A loan from the Provincial Growth Fund assisted with the initial works. The economic viability of the business is based on competitive pricing and provides long-term value for customers.

An article in 'New Scientist' in May, said that the UK was hoping to be a net electricity exporter by 2030 as the country implements its Net Zero Strategy.



ARE MODERN EVS A GREAT LEAP BACKWARDS?

This is the title of the article by Roy Hughes in the Nov-Dec 2022 issue of NZ Classic Driver.

As the above advertisement shows, as early as 1912 the range of Fritchie Electrics was guaranteed to be 100 miles.

Electric cars actually preceded internal combustion ones as Gustave Trouvé tested one in Paris in 1881. After improving the efficiency of a small electric motor developed by Siemens and hooking it up to the recently developed rechargeable accumulator, he fitted it to a tricycle built by English cycle manufacturer James Starling, founder of the firm which was to become the Rover Car Company. However, he was unable to patent this little electric trike so instead he adapted this battery powered motor to propel a five-metre prototype boat. This reached a speed of 3.0kph going up stream and 9.0kph downstream. In other words, he effectively invented the outboard motor.

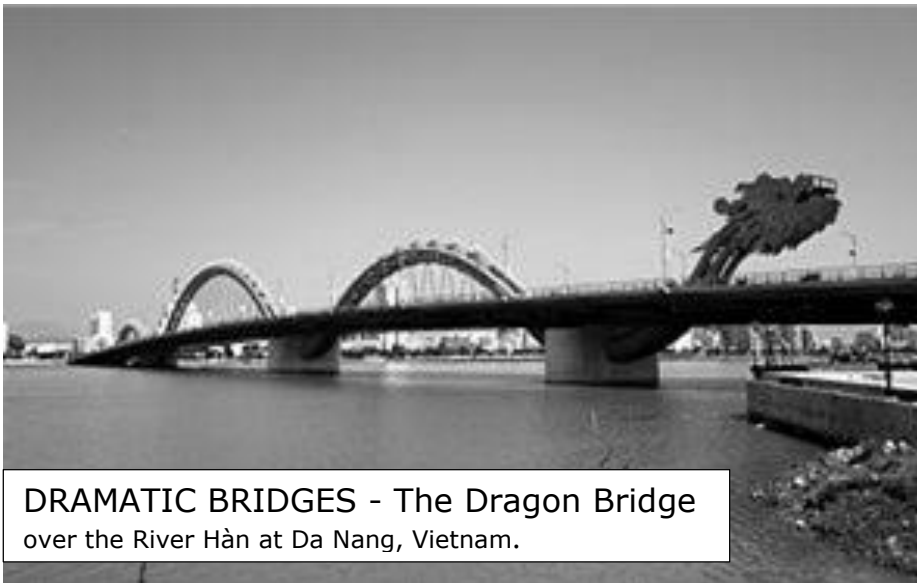
In the US the first electric car was built in Des Moines in 1890 and within ten years, 38% of American automobiles were electric powered. Another 40% were steam powered and only 22% by petrol. However the electric cars were at least five times the cost of petrol powered one and once the electric starter came into general use, they lost their major marketing advantage.

Clara BURTON 1821-1912

Clara is best known as the founder of the American Red Cross, but among other achievements, she founded the first free public school in Bordentown, NJ, and was one of the first women to work for the US Patent Office. During the American Civil War she organised food and medical supplies for the northern army and afterwards set up the Missing Soldiers Office which was able to trace 22,000 missing soldiers. Visiting Europe she gave nursing and humanitarian assistance during the 1870 Franco-Prussian War. On return she founded the American Red Cross and was President until resigning in 1904 at the age of 82.

JOKE OF THE MONTH

A belated tourist arriving in Springs Junction in the S Is well after midnight on a very cold night, was pleasantly surprised to find the local hotel still lit up, fire still blazing and bar full. Over the bar was a large explanatory sign
"This bar closes at 3pm Greenwich Mean Time."



DRAMATIC BRIDGES - The Dragon Bridge
over the River Hàn at Da Nang, Vietnam.

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