Peugeot Car Club (Auckland)

Peugeotex©

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June 2024

Front cover – 504 Rally and 504 diesel ambulance
Above – Soo Land Wong

Peugeot Car Club (Ak) Inc
P O Box 29002
EPSOM, Ak 1023
Patrons
Don Hadfield, Ray Williams,
President
Brent Druskovich, 09 638 9421
brentdruskovich@gmail.com
Vice-president

Acting Secretary
Jeanette Grant, 09 638 8566
jeanette_grant@hotmail.com
Membership Secretary

Treasurer
Steve Cornwall, 09 402 5006
jensteve@xtra.co.nz
Webmaster
Kevin Hardie, 027 625 0505
kevin@azorah.co.nz
Committee
Liesje Bradley, 027 2897 634
liesjebradley@gmail.com
John Grant, 09 638 8566
jeanette_grant@hotmail.com
Peter Hagglund, 09 280 5737
haggy251@gmail.com
Jayden Hardie, 022 359 3749
jayden@localeyes.co.nz
Matthew Ensor, 027 483 0892
matt@ensor.nz
Immediate Past President
Greg Winkley, 09 483 4023
gregwinkley@hotmail.com
Technical Officers
John Grant, 09 638 8566
Dennis Lowe, 09 267 6461
Club Shop
Brent Druskovich - 09 638 9421
Peugeotex Layout
Jeanette Grant, 09 638 8566
jeanette_grant@hotmail.com
Printed by CopiesPlus
www.copiesplus.co.nz

COMING EVENTS

peugeotclub.org.nz

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

July 7 - Midwinter Potluck dinner

Aug 25 – AGM at Vintage Car Club Rooms.

Oct 24-28 – NZ Targa

2025
February 9 – Ellerslie Classic Car Show; the theme is “Summer Holiday”.

THOUGHT FOR THE MONTH

The world would be a really sorry place if we only did what we had to.

P O BOX 29002
Epsom
Auckland 1023

PRESIDENT'S RAMBLE

Early this afternoon I had no thoughts on what to write, in fact I concluded I would have nothing but club business to report about in this Ramble, rather than being a Ramble this one was shaping up to be an Amble! However as I drove home from Blockhouse Bay after an afternoon supervising some earthworks I suddenly realised I wanted to write about the New Zealand Archaeological Association and Black Swans. Two different topics that have no association, or at least that I have been able to think of as I start writing this – but who knows if they will by the end of the Ramble – other than being in my mind.

Many of you I suspect will associate Black Swans, at least in the Auckland Region with Western Springs and that along with the huge number of them at Rotorua and others on Lake Ellsemere in the South Island was pretty much the beginning and the end of my thoughts on them, well that and they are the State Bird of Western Australia.

I already knew that they were an introduced species. However I have discovered through a little bit of research on the interweb that they were first imported from Melbourne in 1864 and are now common throughout our country including the Chatham Islands. There was more than one importation of them including 100 individuals to the South Island in the 1860s. However the numbers in the South Island boomed pretty quickly and though apparently no-one can prove it, it is thought probable that a number of them self-introduced by flying or perhaps being blown across the Tasman during storm events. Therefore they might be considered to be both Introduced and Native (the official meaning of native being that "they have arrived in New Zealand by themselves and established themselves here. They are also found in other countries.")

What has had me thinking about the Black Swans have been a couple of chance encounters with them around our harbours. Although I have seen occasional ducks and swans around our coast I had previously never seen them in numbers. Especially since our Covid lockdown period, Mandy and I frequently go for walks, something we have always done, but not to the same extent as we do now. As well as being partially driven by my desire to lose some weight, it has also coincided with our children being older and more independent; more us time.

The first encounter was whilst walking around the coastal walkways in Westmere – look up the Weona-Westmere Path on

the interweb. This is a delightful short walk amongst the cliffs and mangroves of Meola Creek. Near the open harbour end of it I came across council signage telling us all about the Black Swans – none were in sight. I wondered if it was a practical joke and had been uplifted from Western Springs. Later we popped into the Westmere shops and visited the fabulous butcher there and got a takeaway coffee which we took to the seaward end of Garnett Avenue. There were the swans! From about 50m to 300m out into the harbour from the shoreline, literally hundreds of them swimming around, occasionally flying and squabbling. Never had I seen such numbers away from a lake; hundreds of them.

Then today I was working at Blockhouse Bay, a bay of tidal contrasts. Beautiful sandy beach at high tide, extensive mud at low. At high tide a group of about forty swans were circulating around the bay. As the tide fell they left in drips and drabs; again never had I seen so many on the Manukau Harbour.

Then there is the New Zealand Archaeological Association. This is more Peugeot orientated. The annual conference is in Nelson this year and I am road tripping in my 505. Very much looking forward to it, ferries and accommodation are booked, yes it adds at least one night away more than I would have otherwise. It also might result in a long day, or perhaps I will be too tired and do it in two on the way home.

Which brings me to the club. Jeanette and John are hosting a mid year get together July 7, I hope to see as many of you there at their place, however it also coincides with my return from Nelson. Will I be in good enough shape to attend or will I be worn out?

Remember it is to be a midwinter secret Santa style event, participants to bring a $5 to $10 gift wrapped up and an exchange to happen. Start RSVPing to Jeanette now so she can get an idea of numbers coming.

Also the AGM is coming up, booked at the Vintage Car Club rooms in Penrose. Here we will debate our constitution, we need the numbers, please make the effort to attend on **August 25th – Vintage Car Club Rooms – 39 Fairfax Avenue Penrose.**

Now having written all that I have found a link. Through my archaeological training I knew that swans had been found in early Maori archaeological evidence, and like the Moa had been hunted to extinction. What I didn't know is that it is thought that the archaeologically extinct species of swan is thought to be the same as the introduced –and that is it.

Brent

COMING EVENTS

Sunday July 7	- Midwinter Potluck dinner; 662a Mt Eden Rd aka 13 Kakariki Ave from 4.30 - 8pm+. Bring your favourite dish to contribute for the meal. Plates and cutlery supplied. ALSO pretend its Xmas and bring a small wrapped gift to put in Santa's red bag. (Under $10) Ph 09 638 8566
Sunday Aug 25	– AGM at Vintage Car Club Rooms. 39 Fairfax Ave, Penrose

Interesting read ----
https://www.drive.com.au/caradvice/citroens-genius-act-of-sabotage-against-the-nazis-in-world-war-ii/

JEANETTE'S JOTTINGS

The French Ministry of Ecological Transition announced a drop of 4.8% in 2023 compared to the previous year, with 384.5 million tonnes of CO2 equivalent emitted in France. In 2022, the reduction was 2.7% compared to 2021.

The world's largest economy and second largest emitter of GHGs, the United States also announced good results on the CO2 front, with a drop in emissions of 1.9% in 2023 compared to 2022.

THREE ODD ENGLISH LAWS – **[1]** In England, allowing your pet to get intimate with a royal pet is not only illegal but in the past was taken so seriously that until 1965 offenders could potentially face the death penalty if convicted of this!
[2] Also - according to the Public Health Act of 1936, cab drivers are legally required to ask passengers if they are suffering from smallpox or the plague.
[3] It is actually illegal to try and queue jump. This oddly sensible rule was put in place by Transport For London as one of their London Underground bylaws - and it was imposed to prevent passengers getting frustrated by others jumping the line, and also for safety reasons.

Researchers at the University of Notre Dame have developed a transparent window coating that lets in visible light but blocks heat-producing UV and infrared, not only reducing room temperature but also cutting energy consumption related to cooling the space.

A single-shot vaccine that protects against multiple coronaviruses, including the one that causes COVID-19, has been developed. It erased all viral traces from the lungs of animal subjects, opening a pathway for a similar human vaccine.

Canada is the 15th most expensive country in the world. Milk is particularly costly, coming in at over $8 per gallon (£6), while the price of a gallon of petrol is nearer $4.80 (£3.78)! [The US is the 12th most expensive, Australia the 13th and NZ the 16th.]

New research has found that eating junk food during the crucial years of brain development impairs memory into adulthood, even when reverting to a healthy diet. The impairment is caused by reduction in a neurotransmitter linked to Alzheimer's disease.

Some of Tesla's current engineers may be locked in a battle with management to fix the EV's safety issues, despite threats to their livelihoods.

Mining for minerals like lithium and cobalt that are used to power electric vehicles has left 23 million people in the US exposed to toxic waste and has destroyed 16 million acres of farmland and polluted 310,000 miles of rivers.

With parity in parliamentary positions, and a female head of state for 16 of the last 50 years, New Zealand has the world's third-highest level of parity in political empowerment. The nation has also bridged the gender divide across all levels of education and literacy rates.

Due to congestion in London, in the 18th century, traffic was ordered to keep to the left to cross London Bridge. This rule was later applied to the entire British Empire in 1835 and has persisted ever since. Why the left? Coach drivers had their whips in their right hands to make room.

Ocean Cleanup reported in April that it has so far removed 10 million kilograms (22 million lb) of marine trash from the Great Pacific Garbage Patch and key polluting rivers since 2019.

SODIUM BATTERIES

Lithium-free sodium batteries exit the lab and enter US production

Two years ago, sodium-ion battery pioneer Natron Energy was busy preparing its specially formulated sodium batteries for mass production. The company slipped a little past its 2023 kickoff plans, but it didn't fall too far behind as far as mass battery production goes. It officially commenced production of its rapid-charging, long-life lithium-free sodium batteries this week, bringing to market an intriguing new alternative in the energy storage game.

Not only is sodium somewhere between 500 to 1,000 times more abundant than lithium on the planet we call Earth, sourcing it doesn't necessitate the same type of earth-scarring extraction. Even moving beyond the sodium vs lithium surname comparison, Natron says its sodium-ion batteries are made entirely from abundantly available commodity materials that also include aluminum, iron and manganese.

Furthermore, the materials for Natron's sodium-ion chemistry can be procured through a reliable US-based domestic supply chain free from geopolitical disruption. The same cannot be said for common lithium-ion materials like cobalt and nickel.

Sodium-ion tech has received heightened interest in recent years as a more reliable, potentially cheaper energy storage medium. While its energy density lags behind lithium-ion, advantages such as faster cycling, longer lifespan and safer, non-flammable end use have made sodium-ion an attractive alternative, especially for stationary uses like data center and EV charger backup storage.

Founded in 2013, Natron has been one of the pioneers in this new wave of sodium-ion research and innovation. And while most sodium-ion designs remain in the laboratory, Natron has switched on one of the first major production operations globally. It celebrated the official production kick-off earlier this week with a ribbon-cutting ceremony at its Holland, Michigan manufacturing facility, calling it the first-ever commercial-scale production of sodium-ion batteries in the US.

"Sodium-ion batteries offer a unique alternative to lithium-ion, with higher power, faster recharge, longer lifecycle and a completely safe and stable chemistry," Natron founder and co-CEO Colin Wessells said at the event. "The electrification of our economy is dependent on the development and production of new, innovative energy storage solutions. We at Natron are proud to deliver such a battery without the use of conflict minerals or materials with questionable environmental impacts."

Natron says its batteries charge and discharge at rates 10 times faster than lithium-ion, a level of immediate charge/discharge capability that makes the batteries a prime contender for the ups and downs of backup power storage. Also helping in that use case is an estimated lifespan of 50,000 cycles.

We haven't seen a weight-based energy density figure from Natron itself, but a 2022 article from Chemical & Engineering News put its sodium-ion batteries at 70 Wh/kg, around the very bottom of the sodium-ion energy density scale. That aligns well with the company's stationary-only business plan, as sodium-ion batteries being pursued for potential mobility use have more than double that density. CATL showed a 160 Wh/kg sodium-ion battery in 2021 and has plans to increase that density over 200 Wh/kg to better meet the needs of electric vehicles.

Natron's plans call for the Holland facility to crank production up to 600 megawatts annually at full tilt, serving as a model for future gigawatt-scale facilities. In the two years since we last looked at Natron's plans, AI has grown a whole lot more power-hungry so it's not surprising the company's initial target is AI data storage centers, where it's fast-cycling batteries could become an essential power management tool. It plans to begin the first deliveries in June.

Natron intends to expand its focus to other industrial power markets in the future, mentioning EV fast-charging and telecommunications as targets.

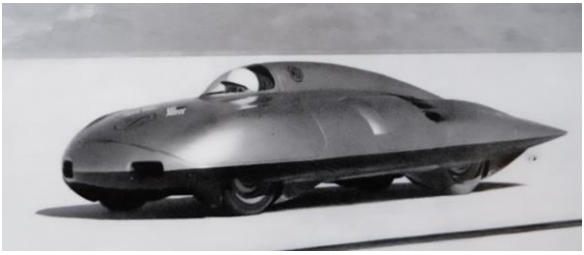
Source: Natron

NEW LANDSPEED RECORD

One of the most stunning concept cars the world has ever seen was shown for the first time at Auto Shanghai in April 2024, when MG took the wraps off the EXE181 concept – an aerodynamic electric hypercar with one of the best drag coefficients ever seen in any registerable, road-going vehicle. If it reaches production, it will become the world's most aerodynamically efficient automobile.

The EXE181 was largely developed at SAIC's Design Studio in the United Kingdom and claims a drag coefficient of just 0.181, and realistically, that number was likely the target Cd all along given the car's name and its relevance to the history of the proud mark.

The EX181 (note the missing E) was the car in which MG set a world land-speed record for 1500cc vehicles back in 1957 when Stirling Moss averaged 245.6 mph after runs in both directions on the Bonneville salt flats, then Phil Hill pushed the record to 254.9 mph two years later in the same car.



The best drag coefficient ever recorded by a production automobile was the 0.189 Cd of the Volkswagen XL1, which was produced between 2013 and 2015, and just 250 units were made. The second-best drag coefficient of a production car was the General Motors EV1, another hero car produced in low quantities between 1996

PEUGEOTEST ANSWERS

1 b) 2 c) 3 b) 4 b) 5 b)
6 d) 7 d) 8 a) 9 b) 10

and 1999 with 1,117 units produced in two generations of vehicles.

Of current production models, the best appears to be the Xiaomi SU7 (0.195), Lucid Air (0.197), Mercedes-Benz EQS (0.202) with the Tesla Model S Plaid (0. 208) and Nio ET7 (0.208) all approaching best-of-breed status when it comes to using energy wisely.

You might be surprised to find that the McLaren Speedtail has a Cd of 0.278, the Mercedes-AMG ONE comes in only slightly better at 0.270 and Bugatti, Koenigsegg, Pagani et al, are beyond that. Indeed, most internal-combustion-engined hypercars aren't particularly aerodynamic in comparison to economy cars because the engines produce large amounts of heat that needs to be bled off and the ducts and intake manifolds for cooling all add to the drag. Then there's the need to create downforce at high speeds, which adds more drag..

Hence the EXE181 will become the most aerodynamic production vehicle the world has ever seen if it reaches production and no other marque gets in before it.

Production might not be as unlikely as the shape of the car might suggest.

2024 marks the 100th year of the British-to-the-bone MG Brand and big things are planned, particularly around the upcoming Goodwood Festival of Speed, where we expect more big announcements on what is perceived as its "home ground." The marque will celebrate its centenary at Goodwood and the new $70,000 MG Cyberster electric convertible sports car will be part of the central theme.

For those unfamiliar with the marque's recent history, there are a few important things to know.

The MG brand was all but dead when the MG Rover Group was sold off by the receivers for around US$1.0 billion in 2005. Nanjing Automobile Corporation (NAC) out-bid the State-owned Chinese automotive giant SAIC to own the brands and assets of the once promising empire. In 2007, SAIC purchased NAC and the MG name was reborn as SAIC's premier export brand.

Hence, the once great MG name is set to relive its glory days under the stewardship of SAIC, and the centenary of the name sees it primed to become one of the world's top selling cars once more.

Once it had been positioned as SAIC's main international brand, MG went from strength to strength, and in 2019, Morris Garages (MG) became China's largest car exporting brand.

In 2022, SAIC announced that it had exported a million MG cars from China since 2007, also noting that the ratio between Chinese and overseas sales had been 50-50 to that point – one million domestic cars and one million exported cars.

The export numbers have been ramping quickly, because MG exported 740,000 vehicles to 84 countries in 2023, with that number representing 88% of all MGs sold during the year. If MG continues to expand at its current rate, it will become one the top selling automotive brands on the planet in 2025.

Although it is 100 years since Morris Garages started making cars in the famous British university town of Oxford, and despite building a world-beating reputation in the 1950s as a sporting brand, its fortunes appear brighter than at any time in its 100 years.

It is hence no surprise that MG should produce such a stunning concept car in its 100th year, as the primary export brand of the world's biggest automotive industry – an industry that produced a record 30.14 million vehicles last year. Auto China is now the most important car show in the world, and arguably as important to China as the 2010 World Expo in Shanghai as a global showcase of capabilities.

So how much do we know about the car?

Not much, which is why even after the Beijing presentation, there wasn't anything to add that you can't see in the pics.

MG claims the car can accelerate from 0-100 km/h in 1.91 seconds, which puts it in some pretty impressive company. Motor1 magazine recently extrapolated the 0-100 km/h times for the Rimac Nevera (1.81 seconds - 1,888 hp), Pininfarina Battista (1.86 - 1,874 hp), Czinger 21C (1.9 - 1,350 hp) and Koenigsegg Gemera (1.9 - 2,300 hp) and the similarity of the MG EXE181 times suggest it is packing some serious horsepower too.

During the presentation, it was made quite clear that the car had been developed in a wind tunnel to go very fast. The above images were displayed of the car during the presentation.

That's why we think there's a second act coming, most likely to occur on or just before 11 July 2024, the start date of the 2024 Goodwood Festival of Speed.

We think MG is going to produce this car!

By Mike Hanlon in New Atlas

504
FRENCH DRESSING

Don Hadfield spotted this article by Simon de Burton in the April 2024 issue of Motor Sport – so here are some extracts…

"If proof were needed that a car doesn't need to be the fastest, the rarest, the most valuable or the best-looking in order to be really great, the Peugeot's 504 is it. Unveiled at the Paris Motor Show in September 1968, its Pininfarina-styled bodywork was certainly more modern looking than that of the 404 it replaced but, while attractive enough, it was far from being revolutionary.

Things were pretty ordinary beneath the skin too; a longitudinally mounted, four-cylinder engine driving the rear wheels via a four-speed gearbox and torque tube to give the car a top speed of around 95mph. What was special about the 504 however, was that it was built very very tough.

In the tradition of French cars designed to cope with less than perfect roads, it benefited from robust construction and a combination of large diameter wheels and long suspension travel that gave it plenty of ground clearance.

Part of the reason for the 504 being made this way was that it would be destined for export to countries around the world – notably in Africa and South America where washed out trails and rutted tracks were more the norm, not smooth tarmac.

The car's combination of a high ride height, robust bodywork and mechanical durability, made it a smash hit, leading to a 15 year production run that saw more than three million 504s sold, with thousands more examples being assembled in Kenya and Nigeria from knock-down kits – the latter right up until; 2006.

It is no surprise then that the 504's potential as a rally car was quickly recognised, and works and privateer entries soon became a familiar sight at events such as the East African Safari (which 504s won in1975 and 1978) and the Rallye du Maroc (wins in 1975 and the following year).

Today, 40 years after Peugeot officially stopped building the 504, it remains a highly effective historic rally car and an especially popular choice for the most gruelling, long distance competitions such as the Peking to Paris and London to Cape Town."

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John Grant adds…

After years of driving 203 and 404, we eventually owned three 504s. In those days their appearance was very distinctive, unlike the 203 which resembled a Javelin and the 404 whose designer – Pininfarina – also designed the Austin and Morris.

In 1974 we bought our one and only brand new car - a Peugeot 504 of course. At this stage the value of the French franc was temporarily down on the eve of the French elections and the French assembled cars were actually about $600 cheaper than the locally assembled ones. This suited me down to the ground for the French assembled cars had a well-deserved reputation for superior build quality and paint finish. In fact, for many years, the words "French assembled" in an ad, guaranteed a considerable price premium on second-hand models.

The new car was midnight blue with grey vinyl upholstery but before we could take delivery of it, it had to go to a panel-beater for repairs. While the cars had been chained down in the hold of the roll-on roll-off ship, someone or ones in hobnailed boots had walked over many of them and most had to have damage to their boots, rooves and bonnets repaired. An excellent job was done but the car proved a real trial to keep looking cared for

as every speck of dust showed on the dark blue paint. My mother-in-law actually had the car "armourglazed" as a birthday present for me and this treatment, which put a protective glaze over the paint, stopped it taking up the small polishing scratch marks which were starting to show. Seeing the car again 20 years later, the original panels were still in good shape despite obvious later neglect.

Much as I would have liked a fuel injection model, our finances could not stretch the little bit further necessary to buy one, so this car was a 2 litre carburettor model which gave us utterly reliable and comfortable service for six years. At the end of that time we traded it in on a fuel injected model of the same age. This turned out to be a comparative lemon as it had suffered accident damage and within a year the white paint was revealing the fact that it had not been properly rust protected afterwards.

I then had a stroke of luck in that I was able to lay my hands on a low mileage 504Ti with a most unusual history. It was sold new to a policeman up in Broadwood and within a few weeks was deliberately run into by a truck and suffered damage to the left front guard. The insurance company fixed it up but he was not satisfied. This was his **new** car that had been damaged and he wanted a **new** car in compensation. He took a snitch against the car and started bombarding the agents with complaints about the speed with which it wore tyres out. He became convinced that the body was twisted on it and even persuaded the agents to replace the drive shafts. As far as they could see, the ones they took out had nothing wrong with them, but he was still not satisfied and in the end, the insurers even paid to have the mechanicals taken out and the body shell sent down to Thames to be put on the factory jigs to check that it was square - which it was. [It was probably better than the locally made cars as their jigs were getting worn]

The end of the story was that the insurance company bought it back from him and had it stripped to find what was wrong with it. No problem was found and the car sat up against a wall in the back of the showroom in Campbell Motors building for several years. No one ever spent time cleaning it and it just sat there neglected. It sat there for so long I suspect the insurers forgot about it. Eventually Campbell Motors ceased to exist and the car had to go.

I bought it for $6600 - which was just about its new price six years earlier. It was a deep wine in colour and looked great. We had that car for seven years and sold it for $8500! By that time, it had done 100,000 miles and still looked as good as new. It drove like new too. It had the fuel injected 2 litre motor and sunroof which were virtually standard in France. I have never been able to understand why the majority of the Peugeots brought out to NZ were - by the agent's special request - without the sunroof.

Reay and Alex both learned to drive in this car.

While I had the business Automotive Enterprises Ltd, I had many Peugeot customers. One of them sold on his early 504 injection to a woman who was travelling backwards and forwards to Wellington regularly. It was very reliable despite its high mileage and he told her to bring it out to me for servicing. Unfortunately, she was one of those people who feel that an old car does not need servicing. She had it for two years and never even bothered to find out how to open the bonnet. When she finally came out to the workshop, we heard her coming for the last half mile or so as the engine was rattling its head off. When we looked at the dipstick, there was no oil registering on it at all. She admitted that the oil pressure warning

light had been coming on on bends for some weeks but she hadn't bothered to do anything until it became so noisy she could no longer ignore it.

The car holds four litres. We topped it up and it took over three litres! To crown it all, she wanted to know if running out of oil was the same as giving it an oil change! We told her it wasn't and that the engine was now almost worn out and needed major work doing on it. However it still went and that was all that concerned her so she drove away, noise and all and continued making her regular long trips. A bad way to treat a good car. She sold it a couple of years later and it was bought by a Frenchman at Whangaparaoa who knew what a good car it could be. He took it into a local garage who was used to tackling everything that came along. They rang me for advice and I supplied him with the necessary parts, so once again the car was going as it should.

Some years later I had a phone call from another Whangaparaoa resident with a 504. It was burning a bit of oil so he was doing his own engine reconditioning - just sending the block and crank off to be machined. When it came to the reassembly, he put it all back together and it had a very bad rattle and heavy knocks - much worse than before he started. He rang me and described what he had done. and how it sounded. One noise went worse when he put his foot on the clutch pedal so I suggested that he tried putting a screwdriver between the crankshaft pulley and the timing cover to see if there was any fore and aft movement in the crank. He did and there was. About a quarter of an inch. I then asked him if he had put the four thrust washers in on the rear main bearing. He hadn't. He found them after had finished putting it together, didn't know where they went and didn't bother looking. He had to pull the engine out, take the sump and the rear main bearing cap off and fit the thrust washers. This solved one of the noise problems only.

He still had a knock in the motor and it was pinking all the time. I suggested that he check the ignition timing and it seemed to be fairly right, so next I queried how much had been taken off the cylinder head and how many times it had been machined. He thought they had taken about 1mm off which means that the pistons would be hitting the inlet valves and the compression had been raised. He had 8:1 compression pistons in - the later model ones - and with the amount taken off the head, the ratio was probably about 11:1 - much too high to run on petrol. It would have needed racing fuel. He took the motor out and brought it in in his other car for me to see.

When they had done the machining, they had machined the top of the block and so the liners were sticking out of the top when he came to assemble it. They then put the liners in without the bottom seals and re-machined the top to get the block and the liners all level. Then they were able to put the shims in and that gave the right protrusion out of the top of the block. Unfortunately, when you do this, the pistons still continue coming out the same distance, but the block and liners are shorter. The pistons were coming right out of the top of the liners and hitting the valves and the inside of the head. This raised the compression even more.

I recommended he took it to White Metal Bearings at Whangaparaoa as they specialise in unusual problems, (normally vintage work), and explained to them that the pistons needed their tops machined down to give clearance and a more respectable compression ratio. They reduced the dome down to the equivalence of a lower compression piston and everything cleared and worked. The total overhaul ended up costing him about $3000, but it ran very sweetly for many miles/years.

ELECTRIC EXPERIENCE

We hear all these marvellous accounts of the latest in EV technology – but nothing is 100% trouble free.

Gavin, our next-door neighbour, has bought a Hyundai Kona and in the weekend he drove comfortably from Auckland to Kaitaia to pick up his 95year old mother. He recharged in Kaitaia and expected to make a similarly smooth trip back south but he could not recharge in Warkworth as the queue to do so was too long.

However, when he reached the Harbour Bridge he became aware that he only had 2% charge left and rather than risk coming to a dead stop on the motorway, he took the first exit and began threading his way across to Mt Eden.

As you have probably guessed he did not make it.

The first I knew of this was at 3.30am when we were woken by the noise of the AA towtruck bringing him home – and having problems manoeuvring into his gateway off our shared driveway.

The following morning he was apologising for the tyre tracks worn into our front lawn and telling me all the things he now knows about EVs.

Perhaps the most surprising and inconvenient fact, is that an EV cannot be moved. Letting the brakes off makes no difference. The wheels will NOT turn if the engine is not going. Actually getting the car onto the tow truck involved putting wheeled trays under each wheel and then winching them aboard with the car on top. A rather time consuming process, particularly in the dark.

ROAD DEATHS

Road safety varies enormously from country to country – some places see very few fatalities on the road, while others suffer large numbers each year. Here are some examples based on 2019 data collated by the UK's Department for Transport. Please note that the international comparisons of road accidents data is based on 38 selected countries in Europe and worldwide with comparable data.

The USA saw the highest number of fatalities from road accidents in 2019, at 36,120 deaths. That's around 110 deaths for every one million of its citizens.

According to state-by-state analysis in 2019, South Carolina had the highest death rate per 100 million miles (160 million km) travelled at 1.73, compared with Massachusetts, the lowest, at just 0.51. It also found 45% of motor vehicle crash deaths in 2019 occurred in rural areas.

The 2nd highest number of road deaths was 96 per million – in Romania – and the 3rd highest was 90 per million in Bulgaria.

How does NZ compare?

Well we were the 7th highest with 72 deaths per million!

Australia was 20th with 47 per million while Iceland came out as the safest of the 38 assessed, with only 17 deaths per million population

The 2nd safest was Norway with 20 deaths per million, while Sweden and Switzerland shared 3rd safest spot with 22 deaths per million. The latter's number, compared with 27 the year before. There were in fact, a total of 187 deaths on the roads in 2019.

PEUGEOTEST

By Matthew Ensor

1. **Which designer was responsible for the styling of the Peugeot 504?**

a) Giorgetto Giugiaro
b) Pininfarina
c) Marcello Gandini
d) Leonardo Fioravanti

2. **Which of the following was a notable mechanical innovation in the Peugeot 504's engine?**

a) Turbocharging
b) Overhead camshaft design
c) Mechanical fuel injection
d) Variable valve timing

3. **In which year did Peugeot introduce a diesel engine variant for the 504?**

a) 1969
b) 1970
c) 1976
d) 1980

4. **What was the specific name of the Peugeot 504 variant that was equipped with a more powerful engine and enhanced features for long-distance rallies?**

a) 504 Ti
b) 504 V6 Coupé
c) 504 Injection
d) 504 Rallye

5. **What was the primary reason for the Peugeot 504's popularity in Africa?**

a) Its infotainment system
b) Its rugged durability
c) Its fuel efficiency
d) Its low cost of spare parts

6. **Which of the following was NOT an innovation introduced in the Peugeot 504 Dangel to enhance its off-road capabilities?**

a) Four-wheel drive system
b) Locking differential
c) Raised suspension
d) Turbocharged engine

7. **What was the maximum payload capacity of the Peugeot 504 pickup in its standard configuration?**

a) 500 kg
b) 800 kg
c) 1,000 kg
d) 1,300 kg

8. **What was unique about the production process of the Peugeot 504 Coupé and Cabriolet?**

a) They were exclusively built in Italy.
b) An all-aluminum body construction.
c) The option of a turbocharged engine.
d) Assembled entirely by hand in France.

9. **Which specific safety feature in the 504 was ahead of its time?**

a) Anti-lock brakes (ABS)
b) Crumple zones
c) Airbags
d) Traction control

10. **What was the most significant change made for the Series 2 sedan in 1974?**

a) electronic fuel injection
b) new door handles and wheels
c) turbocharged engine option
d) 4-speed automatic transmission

Correct Answers on PAGE 7

LITHIUM SOURCE IN USA

Thanks to the increase of electric vehicles and other battery-using technologies, the demand for lithium is expected to skyrocket in the coming years. The world is going to need about 59 new lithium mines hauling out 45,000 tonnes of the metal by 2035 as the silvery metal is a key component of rechargeable batteries.

. Due to the growing demand for lithium, researchers are developing quicker ways to harvest it from the brine pits which, along with more traditional mines, are a primary source of the element. They are also looking in other places for sources of the material.

One odd but potent source of the metal is a wastewater stream produced as a result of a fracking operation outside of Pittsburgh, Pennsylvania. There, operators of the Marcellus shale gas wells need to report levels of certain materials in the wastewater to regulators. Because the reports must mention lithium levels, researchers from the University of Pittsburgh were able to conduct an analysis that showed that if a technique could be developed that would remove 100% of the lithium from the wastewater, about 40% of America's demand for the metal could be met.

Currently, lithium can be removed from water with an efficiency rate of more than 90%, so the goal is not too far away.

And while the wastewater at these particular fracking mines is rich in lithium, they are not the only sources of Marcellus shale in the country. West Virginia could also be a rich source, say the researchers.

Because the US Geological survey has classified lithium as a critical mineral (technically an element), the government wants all lithium produced domestically by 2030. In terms of resource allocation, that would be an improvement over the current method which consists of extracting it from brine ponds in Chile, shipping it to China to be processed, and shipping it back to the States for use.

The next step for exploring the wastewater stream as a source of lithium is to analyze the environmental impacts of extracting it and to build a pilot plant to research and develop more efficient extraction techniques.

"Wastewater from oil and gas is a burgeoning issue," says study lead author Justin Mackey. "*Right now, it's just minimally treated and reinjected." However, he adds that developing better extraction techniques could provide serious value in turning a wastewater into something much more valuable. "It's been dissolving rocks for hundreds of millions of years – essentially, the water has been mining the subsurface,*" he says.

Source – journal Scientific Reports.

ORIGIN of the PCC(Ak)

By John Grant

1979 was the year of the foundation of the Peugeot Car Club in Auckland. There had been one in Wellington for some years which I joined and enjoyed reading their magazine which Malcolm Edgar produced.

However, Peugeot owners were facing a major problem. Campbell Motors no longer had the agency. Todd Motors had acquired it – and to disillusioned owners it seemed they had done so in order to be able to control and minimise the number brought into the country. They were Mitsubishi agents and we cynically decided they were trying to reduce the competition. At a time when models such as the 204 and 304 were popular overseas, the only model available here was the 505 – and their advertising tried to make a feature of exclusivicity – ie "only 90 coming in to the country this year."

A meeting of over 50 dissatisfied Peugeot owners was held in the old Campbell Motors building in Upper Queen St and by the end of the evening the club was formed. Arthur Brinton and Bob & Bill Lyons had years of experience working for Campbells and provided invaluable technical advice. Some of those at the meeting had envisaged the club as a pure pressure group but it developed into a social club with organised club nights and competitive events.

In 2024 I am still on the committee, but membership has dropped from a high point of 135 families to under 60. For many years, Dennis Lowe and I both acted as Technical Advisors and worked on Peugeots from our respective homes, but now we have both retired and our 'assistance' has become just 'advice'.

Jeanette got drawn in writing flyers which grew into a newsletter called Peugeotex, (so named by Andrew Hall) now in its 38th year of publication.

TARGA 2024

Hello Targa Family,
We are ready, are you?
The road book has been compiled and is currently under construction; road closure applications are in with the Councils and resident consultation is about to begin. Remember the event is now 4 days of competitive stages with a total of 590kms special and 700kms touring, **Doco starts on the 24th October in Otorohanga.** Keep an eye on the website for more updates.
Winter is definitely on its way and we know a number of you will be looking for a winter escape, but before you head off don't forget to take advantage of the current Targa NZ Event pricing which is valid until the end of this month.
Current Entry list, Accommodation options and Event programme are now on-line and can be found here: **https://targa.nz/targa-2024-event-calendar/** Come and join us!

Peter Martin ,Managing Director
Ultimate Rally Group Limited
M: 0274525643
T: 09 298 8322
A: Unit 8, 20 Hampton Downs Road, Waikato 3782
P: PO Box 499, Drury 2247

MAYBE DIESEL IS NOT DOOMED

Kenworth has unveiled a sleek-looking SuperTruck 2 at the Advanced Clean Transport expo in Las Vegas, attempting to squeeze the maximum possible efficiency out of a diesel powertrain. It works, too, beating the company's most efficient truck by 100%.

It's the result of a six-year project with the US Department of Energy (DoE), in which truck makers have been challenged to improve freight efficiency without dropping diesel as the main energy carrier.

"The goal was a 100% freight efficiency improvement over our 2009 Kenworth T660, which at the time was arguably the most fuel-efficient truck in the industry," says Kenworth GM Jim Walenczak in a press release. "We surpassed the performance of that model to improve efficiency by up to 136%. This was realized through a combination of improving fuel efficiency up to 12.8 mpg (18.4 L/100km) while reducing our combination weight by more than 7,000 pounds (3,175 kg). The result was the ability to haul more payload with an ultra-fuel-efficient tractor-trailer combination."

So what are the key factors here? Well, the aerodynamics have obviously been vastly improved, with a bullet-train-esque design featuring a central cockpit with a panoramic view, a narrowed nose and sloped forehead, as well as low skirts, and wheels fully enclosed within the bodywork. The typical beefy side mirrors have been switched for slim, slippery camera stalks with night vision, and there's variable-height suspension allowing this hauler to get super-low on a nice, smooth highway. The combined result is an astonishing 48% reduction in drag.

Materials and design considerations, along with lightweight, low-rolling-resistance tires, allowed the design team to shave an enormous amount of weight. The SuperTruck 2 tractor and trailer together weigh in at 26,100 lb (11,839 kg), representing an enormous 7,100-lb (3,221-kg) weight saving.

The powertrain is also extraordinary. It combines a PACCAR MX-11-based diesel engine and TX-12 auto transmission with a 48-volt electric generator to create a mild hybrid system that charges its lithium batteries through regenerative braking. This electric system powers the fans, the steering, the coolant, the heating and air-con systems, which would otherwise draw mechanical power straight off the engine – up to 80 horsepower for the engine fans alone, says Kenworth. In bench testing, this powertrain notched a claimed record with a 55.7% engine efficiency rating… Today's modern diesel engine demonstrates around 47% efficiency… if this engine were to go into production, it would lead to a 10% fuel efficiency improvement. That's an astonishing number."... If it were to go into production. Which it won't…

WILL WE EVER GET THIS?

Source: Federal Roads Office

A new modular mobile flyover bridge allows vehicles to drive right overtop of stretches of highway roadwork, instead of waiting to go around them. Known as the ASTRA Bridge, it's intended to make life easier for motorists and safer for roadway workers.

The structure was created by the Swiss government's Federal Roads Office.

An initial version was tested on a stretch of Switzerland's A1 motorway back in 2022, followed by a trial of a new-and-improved model which is currently in progress. That second version was installed on the A1 this April, and should remain in place until August.

Here's how the setup works …

Shortly before roadwork is scheduled to begin, the affected side of the highway is closed for one weekend. The various sections of the ASTRA are then brought in on trucks at night, and assembled to form a flyover that runs the length of the work area. Ramps at either end of the flyover allow vehicles to smoothly drive on and off of it.

The following week, the ASTRA is opened for use by motorists. Although those drivers do have to slow down to 60 km/h (37 mph) when traversing the flyover, they don't have to all merge into one lane, or stop and wait to be waved through the oncoming lane.

The highway workers, meanwhile, set about ripping up and replacing the road surface in the space below the flyover. Not only do they not have to worry about being hit by passing cars, they're also protected from the sun and rain. Additionally, since their roadwork isn't impeding busy daytime traffic (much), they can be scheduled to work during the day instead of having to pull night shifts.

Because there isn't enough headroom beneath the flyover for tall construction vehicles such as cement mixers, they use a ground-level "logistics lane" that runs alongside the structure. Depending on the scenario, that lane could be the road's existing passing lane or its hard shoulder.

Once work is complete on the initial stretch of highway, the entire flyover gets hydraulically raised by 10 cm (3.9 in) then moved down the road on motorized wheels to cover the next stretch of road – it's operated by remote control. This process can be repeated over and over, until the whole project is finished.

In its current form, the ASTRA Bridge measures 257 m long by 7.57 m wide by 4.65 m high (843.2 by 24.8 by 15.3 ft). The workspace beneath it is 100 m long by 5.1 m wide by 3.1 m high (328 by 16.7 by 10.2 ft).

The setup/teardown process requires 16 trucks with low-bed trailers making a combined total of 45 trips to transport all of the structural elements to/from the worksite. Three cranes are also required, along with two 14-person assembly teams.

L'AVENTURE PEUGEOT CITROËN DS

The Citroën & DS Conservatoire of the "L'Aventure Peugeot Citroën DS" association, bringing together the largest collection in the world of cars and documents linked to the history of the two Brands, will be moved in the coming months, the time to realize a venue project which will aim to make this French heritage accessible to a wider audience.

The Citroën & DS Conservatoire is currently located on the former Aulnay-sous-Bois factory site, which was sold in 2017 to the public land Etablissement Foncier of Ile de France. As the rental lease expires, the Conservatoire will no longer be accessible to the public after June 30th, 2024. Its surface areas currently occupied by the Conservatoire will be rehabilitated to accommodate new activities in this employment zone located to the north of Paris.

This move is an opportunity to accelerate the realization of a project, already under study, and dear to enthusiasts of the Citroën brand aimed at providing access to the extraordinary content of the Conservatoire to a much wider audience.

The duration of this project is at least 3 or 4 years, during which the collection will be moved to a safe place, in order to guarantee both the good preservation of this heritage by L'Aventure, and its access for presentation and study purposes, in particular for curators working on the project of this future Citroën Museum.

Thank you for your support, dear members, during this period of structuring transition for entire Association.

FEMALE INVENTORS

Mária Telkes (1900-1995) - Hungarian-American Telkes was an important solar energy power innovator during the '40s at MIT. But, in the '70s, she also had a part in another innovation: a type of air conditioner that used salts to store cool air at night. This would then keep a place cooler during the warm part of the next day, which conserved power.

WARNINGS OF THE MONTH

Fair warning


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