

LIFE IN ■ Estonia

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SPECIAL!
Pushing
Boundaries

Industry 4.0
In Practice

Karoli Hindriks:
Transforming
The Future
Of Work

Swipe And Tap
Away With **Pocopay**

Wear
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ECONOMY & BUSINESS

41_ Estonia's Next Big Challenge: the Transition from e-State to e-Industry

Industry and IT are no longer separate and discrete sectors from one another. According to Anneli Heinsoo, there needs to be a developmental leap in industry or the fourth industrial revolution, with the key words being information and putting it into smart use.



48_ e-Drive Retro Rebuilds Classic Sports Cars into Unique Electric Vehicles

e-Drive Retro is an international company backed by American capital, a Finnish university and Estonian production and management, which is converting the stylish cars produced in the 1950s-1970s into electric vehicles.

CREATIVE ESTONIA

51_ PORTFOLIO. Wear Estonian Art

Fashion brand Tallinn Dolls recently presented a special collection named 'Wear Art', which aims to popularise art by bringing it into our everyday clothing – in this way you can 'wear' your favourite artists each day and become nothing less than a living art gallery!



63_ Craftory Reinvents Estonian Style Worldwide

Craftory provides beautiful leather products, displaying a clear devotion to this timeless craft. However, a greater part of their growing appeal and worldwide reach come from the infusion of modernity they have put into an industry which has traditionally been filled with traditions.

66_ Münchhausen Productions Setting International Standards

Since founding the company three years ago, the business partners Nikolai Mihailisin and Mika Pajunen have acquired an impressive portfolio of clients. Mika and Niko consider themselves pioneers in service production for commercials in Estonia and the outlook on the international production market are good for Münchhausen.



69_ Cash Rebate – a New Boost for Estonian Film Industry

The Estonian Film Institute launched a new cash rebate system at this year's Berlinale to attract more international film productions to Estonia. According to Edith Sepp, the CEO of the EFI, Estonia is at last a front-rank country for film production.



72_ Trad.Attack! – It's a Brand, not just a Band

The hottest Estonian band Trad.Attack! is actually rather a brand than just a band. The way Trad.Attack! started and is approaching its career bears a strong resemblance to the startup mindset – readiness to risk and a very clear set of goals. Their master plan is to play in every country in the world. So, meet Trad.Attack! – Sandra, Jalmar and Tõnu.



75_ Maria Faust: I Create My Music by Staring at White Walls...

Maria Faust, the most internationally-acclaimed Estonian saxophonist, currently lives in Denmark. When she thinks about Estonia she misses the calm as well as the chanterelle mushrooms. Her new piece 'Velocipede' is due to have its world premiere at Jazzkaar this May.

78_ The Wild Side of Estonia

TOURISM

What is it about Estonia that makes it such an attractive destination for tourists? We have blue skies, something which is almost non-existent in smog-filled metropolitan areas; we have thickets that almost resemble jungles, quiet bogs with bonsai-like pine trees and lakes with clean, fresh water. And in the forests you can almost by accident come across a wide range of wild animals. Read about the ways to reconnect with the nature during a visit to Estonia.



We are rejuvenating classic cars, giving them potentially another life and allowing the whole next generation to enjoy them,' **Michael Richardson**, the CEO of **e-Drive Retro** says. 'As a business concept e-Drive Retro is about converting the stylish cars produced in the 1950s-1970s into electric vehicles.'

The same electric drive components are used for the vehicles, with options for individualisation: 'This is possible thanks to the commonality of drivetrains and how things were manufactured [in those days]. But we, of course, vary our industrial design, so that it looks as if the car was originally built that way,' Richardson continues.

The technology used is, on the one hand, unified and, on the other hand, highly flexible. A laser 3D-scanner is used to 'map' the car and all the components are situated based on how they would most suit the vehicle in question; mass distribution is taken into account, original elements are preserved, if possible, and if not, new ones are 3D-printed.

e-Drive Retro Rebuilds Classic Sports Cars into Unique Electric Vehicles

By ANDERO KAHA / Photos by E-DRIVE RETRO

Technical specifications

- > **Triumph GT6 'e-Drive Retro'**
- > Price: approx. €75 000 (for completed EV Conversion)
- > Engine: Asynchronous AC electric motor
- > Power: 105 kW (140 hp)
- > Gear-box: Fixed Single Reduction Planetary Gear (1.95:1)
- > Top speed: 170 km/h (software controlled)
- > 0-100 km/h in: 8.2 s
- > Energy Storage: 19kWh (approx. 120-150 km range)

One of the companies gaining momentum from Estonia's lively startup scene as well as its electric vehicle revolution and innovative e-services is e-Drive Retro – an international company backed by American capital, a Finnish university and Estonian production and management.



Combining Estonia's advantages

Estonia is a true Electric Vehicle (EV)-enabled country. There are more than 1 200 electric cars on the road. This means that one car in every 1 000 is electric – more than anywhere else in the European Union. The scale of Estonia's EV fast charging network is unmatched by any other country in Europe, with 163 chargers in place all over the country, each being able to recharge a typical electric vehicle in 20 to 30 minutes.

Estonians are also known for their love of classic cars, restoring and upgrading them being a common hobby. During Soviet times, the supply of new cars was extremely limited and everything that could be restored, was restored. Arising from this phenomenon, some notably high-quality car restorers emerged. The name of e-Drive Retro's Estonian production partner has not been officially announced yet, but Michael assures us it is a well-known one, one which has been in business for 30 years already.

The business model of e-Drive Retro connects these two advantages that Estonia has, adds some specific knowledge concerning engineering, industrial and vehicle design from Finland and capital from the US.

A company run from abroad using e-Residency and digital signatures

Michael Richardson is one of Estonia's first e-residents. To run e-Drive Retro and his other company, a consulting business registered in Estonia, while not being here himself, he uses his e-Residency card and digital signatures.

Michael's connection with Estonia began in 2013. As he had worked in software development in Central and Eastern Europe (CEE) for years, one of his colleagues suggested visiting the Slush technology conference in Helsinki. 'I did just that, came to Helsinki – and what struck me most at the conference was not Finland but Estonia. From there I began to meet people and take an interest in what is going on in Tallinn and its startup community,' Michael explains.

What is a Triumph GT6?

A Triumph GT6 is one of those cars that makes the heart of any admirer of British sports cars skip a beat. A six-cylinder, in-line engine, a cramped passenger compartment even by the standards of modern sports cars and, of course, all the British characteristics. Yet, the outer design is what will catch the attention of every enthusiast and even a layman, as it bears a striking resemblance to a smaller Jaguar E-Type.

The production of the GT6 began in 1966 and was based on the super popular roadster, the Spitfire, designed by Italian designer Giovanni Michelotti. There were more than 40 000 specimens of this car produced, it underwent two facelifts and stayed in production until the end of 1973. According to the assumptions of enthusiasts, there are about 1 500 vehicles remaining today. A petrol-engine hobby vehicle in good condition will nowadays fetch around 15 000 euros.

Richardson spent most of 2014 in Tallinn, rented an apartment in Kalamaja, met many startupper and business people – and finally decided that it would be the right time to start the vintage electric car concept that he had had in the back of his head for as long as decade.

'I decided that Estonia is the place in the Nordics to be – because of the support for startups, the benefits of running a startup in Estonia,' he says.

Soon Richardson visited the Geneva Motor Show to see the Biofore Concept Car project from students of the Finnish Metropolia University being exhibited there.

'I met the team and we decided that we would do core engineering in Helsinki and production in Estonia,' Richardson says. 'And of course we are really interested in branching out in Western Europe and Norway in particular, because of its high demand for electric vehicles.'

TEST DRIVE

Triumph GT6-Mk3 vs. Triumph GT6 'e-Drive Retro'

We took a traditional internal combustion engine-version of a classic British roadster, the Triumph GT6, for a spin on the streets of Helsinki and were one of the first to drive its electric version, built by the Estonian-based international company e-Drive Retro.

The internal combustion (i.e. conventional petrol)-driven Triumph GT6 takes off with a roar from the Metropolia University workshop located in the Hernesaari area of Helsinki. The gear change is exceptionally imprecise – partly due to the age and partly due to the original features of the vehicle. When the windows are down, the noise is almost deafening. The early winter wind is relentless. The smell of gasoline seems to fill not only the car, but all the surrounding streets.

Those used to modern cars will not be easily pleased by the combination of what has remained of the original 10 second 0-100 km/h acceleration over time and how imprecise the shifting is.



Michael Richardson

On the other hand, there is plenty to be thrilled about when driving a classic Triumph – the sound of the engine, waves from those looking by and people giving way to the old timer even when we don't have right of way, are all pleasing to the Finnish technical culture. Yet, it is clear the 1970's-made British car is not for everyone as it requires some technical knowledge even when used once in a blue moon, no to mention a modicum of patience and willingness to get your hands dirty.

More modern feel with less hassle

The electric Triumph GT6 is a whole other story from its petrol-driven cousin. Although one might consider turning the six cylinder sports car into an electric vehicle and, thus, stripping it of its roaring engine a so-called electric castration, then e-Drive Retro has taken a completely different approach.

The feel of the drive is still there – perfect thanks to the correct placement of batteries. The 50:50 mass distribution might even make the driver feel safer compared with the original 60:40. Not to mention that with the original manual transmission, gear changes, particularly from third to forth, are prone to failing – these have now been replaced by a seemingly endless amount of torque delivered without changing gears. The power is directed to the rear wheels by a planetary gear set fixed-ratio transmission. The tested prototype changes gears to forward, neutral and reverse with a push of a button; the selector familiar from the original model only has a decorative purpose now. This will be changed in the future – however, the creators of the car will not yet reveal how exactly.

The electric car is not short of power. Yet, it is not too powerful for the original brake system and tire sizes. The technical information of the car generally resembles that of the original. Yes, the initial 10 second 0-100 km/h has become 8.2 but the top speed (180 vs. 170 km/h) and even the kerb mass (918 vs. 940 kg) are very similar. The e-Drive Retro design intent is to convert these cars safely and without requiring extreme modifications to brakes, suspension or steering components of the original cars. Maintaining authenticity to the original driving experience is a key goal for the firm.



Not like any other classic electric car

It should also be said that this is not one of the 'sterile' electric cars known to those using a Nissan, a Mitsubishi or even a Tesla. The tyre and chassis noise still make their way to the car just as in any classic car – yet, compared with a petrol engine, the sound produced by the transmission system and the limited slip rear differential can be distinctively heard. Although the reverse of the original, a completely silent classic electric car would be more convenient, it would feel strange and too far from the concept of the original car.

However, the electric classic still has its own eccentricities. The take-off seems a little peculiar. If you release the brakes, the car does not move forward but stays put. The first touch of the accelerator pedal does not make the car move either; it moves only once the neutral position of the accelerator has been exceeded. This is due to the automated regenerative braking system, which allows the driver to slow the vehicle by simply reducing pressure on the accelerator pedal – the effect feels exactly the same as when doing so with the original engine (the design intent of the engineers). This 'Engine Braking' effect makes for better handling and enables the car to be driven with almost never making a touch on the brake pedal being required. Brake life is expected to be up to 10x longer, too.

The rapid charging standards can be selected based on which market the car is aimed at; since the test vehicle is intended for Estonian roads, it is equipped with a CHAdeMO charging connector. Rapid charging takes around 20 minutes, whereas it takes 6 hours of regular charging to fill a 17.6 kW/h battery. The autonomy of the vehicle (ie. how far it can go without needing a recharge) is about 120-150 km, depending on numerous variables, as is typical of electric cars.

What next?

e-Drive Retro is now accepting orders for GT6 and Spitfire conversions as a standard product. They are also considering a **Mercedes-Benz 190 SL** or **Alfa Romeo Spider** for their next product development. These cars, even more highly valued among collectors, will most likely propose an even greater challenge compared with the Triumph as anyone who has ever driven a classic SL or Alfa will know how enjoyable these small open cars are for sunny weekend drives.