A spark of inspiration

Gary Freedman on what we could learn from the car industry

I HAD a Lamborghini poster on my bedroom wall as a kid. My 10-year-old has a poster of a Tesla.

You know, the electric saloon that goes from 0-60 in 2.4 seconds in "ludicrous" mode, making it the quickest production car in the world.

Times have changed since my V12 Lamborghini days.

So what has any of this got to do with flying? Surely batteries are too heavy, too expensive and lacking in range, there's nowhere to charge them, and regulation isn't ready in the UK?

All of the above was said about electric vehicles just a few years ago, and often still is. Yet you can now easily drive from John O'Groats to Land's End, charging up at almost any motorway service station. Over a million electric vehicles have been sold, and they are the fastest growing segment of the car industry.

So can the same pace of change and innovation also be applied to the conservative aviation industry?

I'm a bit obsessed by the electric revolution, and so it was that I dropped in to see Deepak Mahajan at Damyns Hall one sunny weekend.

He kindly put me in touch with Pipistrel in Slovenia, and just a few weeks later, while "coincidentally" on a family holiday there, I find myself floating quietly over the Pipistrel factory in an Alpha Electro two-seater alongside founder Ivo Boscarol.

This was my first time in an electric plane, and before I could find the record button on my video camera, we were off. No warming up the engine. Just go.

Not wearing headphones was really pleasant, with a small speaker easily loud enough to hear the radio. While the plane is not noise-free, it is quieter compared to what we're used to, and significantly quieter for the person on the ground.

We climbed out and Ivo stayed very low while turning 180° to swoop back over my surprised family on the deck and skim over

the solar-panelled roof of the factory (they also use geothermal and other renewable sources to power the eco-friendly plant).

I asked Ivo about the climb rate, and in answer he grinned and slammed the throttle forwards.

We rocketed up at roughly a similar pace to what I'd expect from a petrol version. The battery indicator knew all about it, showing that the power was maxed out. However, on cutting back to idle and descending, the revolving prop reversed to put power back into the battery, like regenerative braking does in an electric car.

The Alpha Electro is designed as a trainer, which makes sense for now. Battery duration is limited to 1.5h, which is perfect for circuits, especially as it only takes only 20min to charge.

Oh, and it's dirt cheap to run, as charging is a fraction of the price of petrol, and maintenance is minimal, with no oil or filters, spark plugs or exhausts to worry about. One big question is how quickly we'll see the battery range grow. The Nissan Leaf and BMW i3 had a declared range of around 120 miles last year, but both just increased to 150 with the same-sized battery pack.

So could 1.5h soon become closer to a useful 3h and transform electric power into a realistic alternative to burning petrol in a vibrating old combustion engine? Well, if battery density in the auto industry is anything to go by, then yes, we should expect a lot more range.

But what if you want more now? Well, for GA pilots, Pipistrel's stunning four-seater Panthera is worth a look. With three engine ▷

Facing page An Electro at the factory in Slovenia

This page, clockwise from top left Cockpit battery instruments on the Electro; Ivo (left) and Gary; and solar panels provide much of the energy for the factory

Photos, clockwise from top left Gary's Eurostar with his Tesla; future pilots!; and plugged in and charging

▷ options (petrol, electric or hybrid), it's the latter that's perhaps the most realistic, as it allows for a quiet takeoffs while also being able to cruise on petrol. Perhaps a sensible compromise for now, like the Toyota Prius of the sky, but far prettier.

And more still? How about Ivo's recent announcement of plans for a 19-seat hybrid-electric version with the help of a £450M cash injection from Chinese Sino GA?

Hydrogen power will probably be more realistic than batteries due to weight, but this is where electric passenger travel starts becoming a reality, perhaps with short internal flights for now, but longer range on the way.

Look at the issues over the Heathrow Airport expansion. The two key concerns from protesters are noise and pollution, and electric flight solves both.

Yes, I can hear the critics shout that a 19-seater limited-range plane doesn't compete with an A380, but we have to start somewhere. Next will be a 50-seater, and then 100. If Heathrow expansion goes ahead, it could take 10 to 20 years to come to fruition, which is surely enough time for significant developments in low-carbon air transport, if we have the vision and drive.

There are several manufacturers active in this space, including Airbus, Electro Flight, Elektra, Evektor, Magnus, Nasa, Velocopter and others.

However, in the UK, regulations haven't caught up with this exciting opportunity, so we need to knock down the regulatory barriers. I'd like to hear from pilots keen on bringing the first electric syndicate plane to the UK… in fact, maybe it's time to start an eco-airline.

So any billionaires out there, please get in touch! □

• *Gary Freedman is a renewable energy specialist, with 20 years flying hang gliders and more recently microlights. Contact him if you're a billionaire via gary@ElectricAir.co.uk.*