

You drive to work — I'll take the jetpack

Is this the dawn of a new age of personal flying machines or is it just billionaires messing about in their high-tech sheds?



Danny Fortson

I need a jetpack. Actually, make it a flying car. No, wait — what I desperately need is one of those levitating motorcycles that they race around on in the *Star Wars* films. You know the ones, where the driver is bent over like a jockey? Yeah, gimme one of those. My Toyota Prius does stupendous mileage to the gallon but it is just too pedestrian. I need to fly to work, hover down the street for a loaf of bread, glide over the gridlock just so I can look down — figuratively and literally — on all those “groundies”. Suckers.

OK, maybe I don't.

In Silicon Valley billions of dollars are being ploughed into these flying contraptions, though. They are part of a generation of personal air vehicles that techies reckon will, sooner than we expect, usher in a new age of travel.

Mark Moore, a former Nasa scientist now at Uber Elevate, the ride-booking giant's air-taxi arm, says we are living through a new “Wright brothers era” of innovation that will lead to taking

to the skies becoming as quotidian as brushing your teeth.

These competing technologies fall under the abbreviation VTOL — vertical take-off and landing. More than 150 companies, ranging from billionaires' pet projects to ventures backed by aviation heavyweights, are chasing the dream of personal flight.

As usual with the Silicon Valley hype machine, the promise is vast. If air taxis become reality, for example, then where you live would not be dictated by your commute to work. A 50-mile journey would go from a two-hour, soul-sucking slog to a snappy 15-minute zoom in an air pod.

Of course, there is a lot of clear blue sky between living like George Jetson and the contraptions — giant tilting rotors, flying cars, jetsuits — under development today.

And that is before you get to regulations, “sky lanes” and infrastructure such as landing pads and charging stations. Most of these aircraft are going to be powered by electricity, so a supply chain will be needed. Oh yes, and they will, ultimately, be self-flying as well.

Which is why this is the most fun part of the new Wright brothers era. The hundreds of concepts will be winnowed to a handful. Perhaps we will look back

on this time, much as we do now at the off-the-wall ideas that were considered plausible a century ago, and chuckle smugly at the woefully misguided designs.

On a Sunday in late August, an American Airlines passenger jet was on its final approach to Los Angeles airport when the pilot spotted something bizarre. He radioed the control tower: “We

just passed a guy on a jetpack” at about 3,000ft and a mere 300 yards “off the left side”. Perhaps Jetpack Man simply got lost on his way to Starbucks. We'll never know. The FBI tried and failed to track him down. It made me wonder, though.

Air taxis I understand. Battery and electric motor technology has come on in leaps and bounds, making it at least technically feasible, if still wildly expensive, to develop emission-free flying cars. One California company, Joby Aviation, received an astounding \$590 million this year from investors led by Toyota to bring its five-seat craft into production. A German firm, Lilium, raised \$370 million to produce its fixed-wing machine, fitted with 36 fans that look like hairdryers, and last month announced a deal that paves the way for an air-taxi service between Düsseldorf and Cologne airports

by 2025.

There is certainly momentum behind flying cars, and I might one day consider stepping into an air taxi if I'm confident it is safe. But strapping on a jetpack? Investors have bet millions that we'll eventually be happy to do that too.

The technology's most important benefactor is Tim Draper, a colourful Silicon Valley venture capitalist known for early bets on Hotmail, Twitter and Tesla. He was also a big backer of Theranos, the failed blood-testing company whose founder is accused of fraud, and he has rapped on stage about bitcoin (google it — or perhaps don't).

Draper has invested in two jetpack start-ups. One is Gravity Industries, based in Salisbury and run by a former Royal Marine, Richard Browning, and the other is JetPack Aviation, set up by an Australian entrepreneur, David Mayman, based in Los Angeles.

I ask Draper a simple question: why jetpacks? His answer is equally simple: traffic.

"I expect to be able to commute that way, and it looks fun," he says. "I can't wait to try it."

And it's not just jetpacks. Draper has also invested in flying cars and monorails — anything that offers an alternative to sitting in your car, slowly going insane in bumper-to-bumper congestion.

Is this a case of billionaires and their toys? To a degree, but this is often how technological revolutions start. The tech commentator Benedict Evans once said: "Most tech innovation is attacked as 'rich people's toys', but ends up giving the poor the things that previously only the rich could have."

And Mayman, for one, thinks the world needs jetpacks — lots of them. The Australian has been

toiling on the concept for 13 years. It almost killed him. In 2010 he crashed while flying a "rocket belt" powered by hydrogen peroxide, sustaining third-degree burns down most of one leg. Waiting for a skin graft, he checked himself out of hospital to do a much-hyped flight near

Sydney Harbour Bridge. He crashed into the water. "The ambulance took me straight to hospital for the skin graft," he says. "That's probably the worst accident I've had."

Ten years on, he is still at it. He has binned rocket belts and settled on the tenth iteration of his jetpack design. He reckons within five years it will be a useful tool for soldiers and emergency responders, allowing them to get to people unreachable by any other means. Having lived through California's recent spate of wildfires, this is a point that resonates with me.

Last July, Gravity Industries' Richard Browning tested his jetpack with the Royal Navy, executing a mesmerising series of levitations between a patrol vessel and two rigid inflatable boats travelling at 20 knots on the Solent. Rather than just having a rigid chassis strapped to his back, like Mayman, Browning's machine has rockets affixed to the forearms,

creating a distinctly *Iron Man* vibe.

In November he went further, breaking his own world record

for the fastest jetpack flight — 85mph. And last month he went higher, strapping on a paramedic's suit as well as his machine to show how mountain rescue services in the Lake District could provide the ultimate flying doctor service.

Explaining why he has braved countless crashes and setbacks, he told *The Times* last month that he had "a passion to be able to fly like a superhero".

Draper's enthusiasm for these projects aside, most people would probably not relish strapping a turbine engine to their spine to ensure they make that 9am staff meeting.

Mayman has an answer for that. JetPack Aviation is also developing the Speeder — a *Star Wars*-style air motorcycle — which can either be piloted or fly autonomously and is set to take its first test flight this year. Mayman says: "Imagine going from Los Angeles to San Francisco at 300mph and then landing in an area the size of a kitchen table. It will happen."

The goal, he says, is to make a vehicle that anyone can operate, like the Segway, the oft-mocked two-wheeled "personal transporter" loved by shopping centre security guards and Prague tour groups. "Just lean forward and it will go," Mayman says.

Mayman, Browning, Draper and the rest may come off as quixotic characters, tilting at rocket-powered windmills. But in Silicon Valley they are seen differently. They are pioneers, like many before them, tinkering with harebrained inventions that may one day turn the world upside down.

Or they could end up like the Segway. Apple's Steve Jobs said of the now-defunct machine that it could be "bigger

than the personal
computer”.
It goes to show
that even the
visionaries
get it wrong
sometimes ■

**JetPack Aviation's
Speeder, right,
Joby Aviation's
five-seater craft,
bottom left, and
David Mayman in
action, top left**



If air taxis
become
a reality,
a 50-mile
journey
would
zoom by in
15 minutes



FLIGHT MODE
Richard Browning,

top, playing jetpack
paramedic in the
Lake District last

month. Lilium's air
taxi, top right, and
the Jetsons, below