

The flying car

The fantasy of spy novels and science fiction films is at last becoming reality with a vehicle that can turn from car to aircraft in 15 seconds



Mark Harris

It is the ultimate off-roader and it is coming to an airstrip near you. The flying car has been talked about for almost as long as cars have existed, and now a prototype built by a small American company is finally ready to make the idea a reality.

The Terrafugia Transition is a two-seater plane that at the touch of a button converts into a road-legal car. It takes its maiden flight next month and is scheduled to hit the showrooms by next year. You can't help but wonder whether, if Bob Nardelli and Rick Wagoner, of Chrysler and General Motors respectively, had been forward-thinking enough to fly into Washington DC in swept-wing Dodge Vipers and Cadillac Escalades instead of corporate jets when they were seeking bailout cash, they would have been showered with government money, downturn or no downturn.

"It's like a little Transformer," says Carl Dietrich, the Terrafugia boss, proudly. "This is the first really integrated design where the wings fold up automatically and all the parts are in one vehicle. All we have is one simple folding wing, and that means the Transition takes just 15 seconds to switch between flying and driving."

Dietrich has a well-rehearsed list of reasons why "roadable aircraft" make financial sense. They promise to be quicker than cars for intercity commuting, fit into a normal garage (saving hangar fees) and even run on plain old premium unleaded. However, he's missing the real reason the Transition is causing such a stir in the automotive as well as the aviation world: flying cars are cool. They're James Bond. They're Blade Runner. They're Back to the Future.

At the moment, though, Terrafugia's car looks more like Chitty Chitty Bang Bang than The Jetsons. The prototype Transition has been made at Terrafugia's small workshop in Woburn, Massachusetts, by a team of young engineers recruited from MIT and Nasa. The ungainly vehicle has a single engine — a 100bhp petrol motor that drives either the wheels or a rear-facing propeller. As a car, it has a normal steering wheel, accelerator and brake pedals, but no gearstick (the Transition has a continuously variable transmission).

With its wings deployed and the propeller spinning, the Transition can take off from any airfield, although not from roads — it's illegal everywhere in the US except in sparsely populated Alaska. It can fly up to 500 miles on a single tank of petrol at a cruising speed of about 115mph. That's the plan, at least. Though it has reached 90mph in test drives, the prototype Transition's wheels have yet to leave the ground.

That's not for technical reasons; it's because the various road and aircraft licensing authorities have been wondering how to classify it. "It took six months just to get our plate," says Dick Gersh, a former lawyer with the car insurance industry and now a vice-president at Terrafugia. "The government, insurance companies and lawyers have never contemplated a flying car. I wanted a car that could fly and drive but you couldn't do either because you couldn't get

insured.”

Gersh is confident that he will be able to insure the Transition once it makes a successful test flight — and a safe landing. The Transition has a safety cage and crumple zones, although it will not have to pack the latest safety features or undergo a crash test before it takes to the air.

“There are already exemption policies for low-volume manufacturers like Lamborghini,” says Dietrich. “We can’t afford the huge amounts of research and development for motion-sensing airbags, and we certainly can’t afford to crash-test our only prototype. If it makes you feel safer, Boeing doesn’t crash-test its big jets either.”

Terrafugia hopes to deliver the first production flying car by the middle of next year. The company already has orders for 40 aircraft. “The majority of our customers are retired or near-retired couples who want a fun vehicle to putter around the country in. They’ve worked hard their whole lives and now they can have a flying car, a technology that they’ve been promised in films and TV since they were a kid,” says Dietrich. “We even have a couple of orders from people who are not pilots but will learn because of this vehicle. They’re willing to put money down on a vehicle that they can’t fly yet.”

Terrafugia’s Transition will set them back a cool \$200,000 (£132,000). “For an airplane, that’s very reasonable, but for a car, that’s very much at the high end,” Dietrich admits. “It’s got to start there. You can’t make a \$10,000 flying car yet. This is not going to change overnight and it won’t become a mass-market item any time in the near future. But in the long term we have the potential to make air travel practical for individuals at a price that would meet or beat driving, with huge time savings. And that could be a real game-changer for aviation as well as driving.”

The flying car has been technically possible for years but the legal runway was cleared for take-off only four years ago. The American Federal Aviation Authority created a new category of plane called light sports aircraft. These planes are subject to fewer rules and regulations than traditional passenger aircraft and can be flown by pilots after just 20 hours of training, half the normal American requirement.

At the same time, advances in avionics (the systems that allow you to pilot the plane) have made flying much simpler. Gone are the days when a plane’s cockpit was a kaleidoscope of flashing buttons and switchgear. Instead, new technology means that the inside of a cockpit is little different from that of a luxury car. Navigation can be taken care of by GPS, weather patterns can be displayed on a simple colour screen and automatic throttles help to keep control of the aircraft.

So the next time you remind the passengers in your car to fasten their seatbelts, it might be in preparation for take-off.

Blue-sky thinking: the rivals

PARAJET SKYCAR

What is it? A lightweight two-seater buggy that uses a giant fan mounted on the back and a paraglide-style chute to keep it airborne.

Are they serious? It seems so. The Skycar is due to take off on Tuesday on its maiden flight. It has been developed by British engineers, who are proving its worth by flying and driving it 3,730 miles from London to Timbuktu. On the road it has a top speed of 110mph; in fly mode it can reach 80mph with a range of 180 miles. The wing takes about three minutes to deploy manually and the Skycar can take off in only 200 yards. If the trip is successful, the team aims to put the design into production, with prices from £40,000 for a basic model up to £60,000 for a sports version.

A5 ICON AIRCRAFT

What is it? The world’s first multi-purpose recreational flying vehicle.

Are they serious? Yes. The A5 has made several test flights and the Los Angeles company plans to bring it to market this year. Not strictly speaking a flying car, the A5 requires a trailer to transport it to its take-off point. This is made possible by the fact that it has folding wings, meaning it can also be housed in a garage. The A5 is also amphibious and so doesn’t need a runway to get airborne — a lake or river will do. It comes complete with parachute to lower the plane to the ground (or water). The engine runs on ordinary unleaded fuel and Icon says the A5 will cost \$139,000 (£92,000).

PAL-V EUROPE BV

What is it? A three-wheeled girocopter, capable of vertical take-off and landing.

Are they serious? Possibly. After six years of concept work, the project has entered the final phase of development: building the first commercial prototype to prove all the technologies work. The Dutch company hopes to begin marketing the vehicle this year and customers can sign up to buy one, although prices are yet to be decided. On the road it has the agility of a motorbike, and the single rotor and propeller fold away. Airborne, the PAL-V flies below 4,000ft, so pilots don't need to log a flight plan to use it, and it has a top speed of about 125mph.

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