

JETGALA

LIFE BEYOND FIRST CLASS



CESSNA'S NEW
CITATION LATITUDE

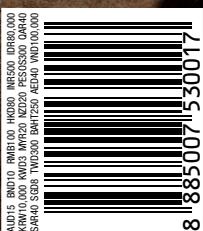
FLYING CARS ARE COMING | AIRSHIP ARCHANGEL
AIRCRAFT LIVERY DESIGN | PREMIAIR INDONESIA

FRÉGATE ISLAND
SEYCHELLES

DAUM CRYSTAL ART | CUSTOM HACKER-CRAFT
BASELWORLD 2012 | CLEVERLEY BESPOKE SHOES

12

May June 2012



ROADABLE AIRCRAFT

by Jim Simon

An aerial photograph showing a roadable aircraft in flight over a lush green landscape. The aircraft's wing, painted in blue and white, is visible in the lower right foreground. The terrain below is a mix of green fields, forests, and some industrial buildings in the distance. The sky is filled with soft, white clouds.

RIDING HIGH

A CENTURY AFTER THE FIRST ATTEMPT,
THE FLYING CAR MAY FINALLY TAKE OFF



The dream of a flying car is almost as old as the car itself. Nearly a century has passed since Glenn Curtiss unveiled his Autoplane in 1917, one of the first known attempts at sky cars. Or, for a more technical term, roadable aircraft. Many more have tried. Until recently, none has overcome the challenges of weight, range, safety and economics. But thanks to persistent entrepreneurs, advances in technology and help from regulatory agencies, the vision of a flying car may finally come true.

Some designs focus on personal pursuits, while others address business needs. A few try to satisfy both. But in reality, who will buy a flying car? Developers target light aeroplane owners, business jet users and service providers. Traditionally, a light aeroplane owner needs to drive to a local airfield, retrieve his plane from a hangar, fly to an airfield near his destination, park his plane and arrange for local ground transportation to his destination. To return home, he would reverse the process. With a flying car, however, he would be able to drive out of his home garage to a local airfield or airstrip, take off, fly to an airfield or landing area near his destination, and drive on.

Business travellers can appreciate sky cars' capacity to go door to door without giving up valuable time renting cars or flying to airports that are far from the destination. This is especially true for those who travel over short, >>

The Transition® aims to solve issues faced in personal aviation, such as weather sensitivity and lack of mobility

Image courtesy of Terrafugia

>> but highly congested, distances. Think metropolitan areas like San Diego to Los Angeles and Singapore to Kuala Lumpur.

Also, roadable aircraft can supplement many helicopter-based services, such as emergency response. While helicopters are often restricted from landing close to emergency areas owing to obstacles like buildings and overhead wires, a flying car can get close, land and drive the remaining distance to the scene.

To encourage the increase in both pilots and affordable aircraft, several governments have introduced a sport pilot licence and Light Sport Aircraft (LSA) category. Training for a sport pilot licence takes 20 hours — about half the minimum requirement for a traditional private pilot licence. Of course, many students invest in additional training to increase their proficiency.

LSAs are restricted to two passengers, daylight flight clear of clouds, and speeds of about 200 km/h (the exact limit may vary in different countries). They are often made of composites to meet weight requirements. LSA certification is much easier than that of other types of aircraft, allowing developers to keep costs low. While many companies, engineers and pilots are pursuing the ever-elusive holy grail of a flying car, a few have successfully moved past the drawing board and are looking to be feasible projects.





FLYING CAR DEVELOPERS TARGET LIGHT AEROPLANE OWNERS, BUSINESS JET USERS AND SERVICE PROVIDERS

Terrafugia

Made of carbon fibre and titanium, the Transition® Roadable Aircraft by Terrafugia was designed by a group of engineers trained at the Massachusetts Institute of Technology. Upon landing, the pilot cum driver uses a mechanism in the cockpit that folds the wings up within 30 seconds, and automatically directs energy power to the wheels. In the air, the Transition® has an easy-to-use cockpit and a back-up parachute in case of emergency. On the road, safety features include crumple zones, self-tensioning seat belts, and airbags.

Terrafugia is drive-testing and taxi-testing its two production prototypes. In March 2012, the US Federal Aviation Administration issued an Airworthiness Certificate to one of Terrafugia's production prototypes, clearing it for flight-testing. The company expects to begin production in late 2012 or early 2013.

Terrafugia markets the Transition® as a vehicle for “door-to-door distances of between 100 and 400 miles [160 to 640km]; a trip too long to drive, but too short to use the airlines or corporate aviation efficiently. Here in the USA, we have over 5,200 public-use airports; on average, you are no more than 30 miles away from a public-use airport,” says Steve Moscaritolo, a company representative. The Transition® was also exhibited at the New York International Auto Show to attract non-pilots.

www.terrafugia.com >>



OPPOSITE PAGE

The Transition® is able to fit into a single car garage with wings folded

Production of the Transition® is expected in late 2012 or early 2013

THIS PAGE

In 2008, the Transition® successfully completed its first flight test in Plattsburg, New York

Folding and extending wings of the Transition® are executed from the cockpit

Images courtesy of Terrafugia

Pal-V

The Pal-V 'Personal Air and Land Vehicle' by the company of the same name is being developed in the Netherlands. It has just completed road tests and conducted its first successful maiden flight at The Netherlands' Gilze Rijen Airport in March. While many sky cars are half-car, half-aeroplane, the Pal-V is more like half-motorcycle, half-gyroplane. A gyroplane can accomplish about 90 per cent of the same functions as a helicopter but costs significantly less to build.

Unlike a helicopter, the Pal-V will require a 200-metre airstrip for take-off and landing. Netherlands' Ministry of Economic Affairs and Ministry of Transportation have developed a concept of 'landing strips' adjacent to highways, making it convenient to get on and off the road. The goal is for Pal-V users to live and work within 15 minutes of a landing strip.

If the engine ever fails, the Pal-V's rotor will continue to auto-rotate due to air flow, giving the pilot enough time to execute an emergency landing. Although its flight controls will be similar to those of a traditional aeroplane, the Pal-V resembles a motorcycle on the ground. It will lean into turns like a motorcycle. A passenger may sit behind the pilot-driver.

Aside from traffic jams, the Pal-V is ideal for flying over barriers such as mountains, water, sea arms, fjords, woods and deserts, says managing director Robert Dingemans. It may also be used for parcel delivery. The Dutch government has helped fund the project with grants and loans, and is in discussions to buy the first Pal-V models. It hopes to use the Pal-V for border control, policing and surveillance. www.pal-v.com



FROM TOP
The Pal-V's Dynamic Vehicle Control (DVC™) system enables a plane-like 'tilt-before-cornering'

The Pal-V's foldable pusher propeller helps generate lift and forward speed in autorotation

Images courtesy of Pal-V

The Carplane uses an electric engine in drive mode and piston engine in flight mode

Image courtesy of Carplane

Carplane

The Carplane® Road/Air Vehicle by the company of the same name hails from Germany. It uses a bimodal cabin to maximise aerodynamics in the air and on the ground. This means that the pilot-driver and passenger are in separate, physical compartments across from each other. The Carplane® can transition from ground mode to flight mode in just 15 seconds at the press of a button. The wings on top of the car will slide backward to extend out to the sides. Once extended, they will slide forward to lock into flight mode. Take-off roll is a mere 85 metres.

Internal design verification testing is now under way. Interestingly, Carplane is testing one vehicle that is road-ready and another that is airworthy. As improvements are made to each version, the other will require retesting. The company is shaping its final prototype, which is targeted for 2015 government certification testing. Carplane may have recently surpassed a huge hurdle — financing. In March this year, 'Rainbow' Sheikh Hamad bin Hamdan al Nahyan of the Abu Dhabi Ruling Family agreed to discuss a joint venture with the developer. The company sees four markets — hobbyists and enthusiasts; business travellers for distances of 250 to 1,000 km; military and emergency services; and logistics services. It does not see the Carplane® as a commuter vehicle. www.carplane.com

BiPod

A design with a similar twin-fuselage concept is the BiPod by Scaled Composites. Scaled Composites is currently not releasing updated information or giving interviews about the BiPod — although, this having been Burt Rutan’s final project prior to retirement, many are optimistic that it will see the light of day. Its projected maximum speed of 200 mph (322 km/h) suggests that it is not intended to be categorised as an LSA.

www.scaled.com/projects/bipod



	TERRAFUGIA	PAL-V	CARPLANE	BIPOD	PARAJET SKYCAR
CAPACITY	2	2	2	2	2
CRUISING SPEED	172 KM/H	150 KM/H	222 KM/H	322 KM/H	130 KM/H
RANGE	787 km	450 KM	700 KM	1,127 KM	290 KM
ANTICIPATED PRICE	USD 279,000	TBA	EUR 100,000 - 220,000	TBA	GBP 55,320 (exc. VAT)



FROM TOP

The BiPod is capable of freeway speeds, urban driving and garage storage

Image by Mike Mills, courtesy of Scaled Composites

Parajet’s Skycar, with light chassis and dynamic handling, is ideal for sand dune adventures

Image courtesy of Parajet Automotive

Parajet Skycar

Parajet Automotive’s Skycar has a radically different design from the other flying cars profiled above. Parajet has been manufacturing paramotors for a number of years. At the risk of over-simplification, a paramotor is a motorised hang glider.

Parajet’s Skycar aims to be one of the most affordable flying cars on the market by applying its paramotor know-how to a dune buggy-like vehicle. This design means the Skycar is intended for off-road locales. To fly, it will use a parafoil. The Skycar has an emergency ballistic parachute to maximise chances of a walk-away landing. www.parajetautomotive.com