

# AE Update August 3, 2010

## Terrafugia 2.0

28 flights of its roadable aircraft prototype showed that the lift generated by the canard was decreased by being close to the vehicle's large wheelpants.

Also an unforeseen body-effect produced more than the expected lift farther aft on the fuselage.



Result: Large amount of up elevator and canard trim deflections necessary to keep the vehicle aloft.

Designed its second vehicle, next version of the Terrafugia Transition roadable aircraft.

Canard is gone, giving the front view a cleaner aerodynamic profile.

Airfoil of the wing is changed.

Powered by a Rotax 100-hp 912S engine with a pusher prop.

Cruise speed in flight of about 90 knots, and a fuel burn of 5 gph.



\$194,000 but a new price will be announced at a later date.

Company has 80 orders for the airplane.

## Plane Driven PD-1

Combines a modified Glasair Sportsman with a road-worthy trike undercarriage driven by a separate engine.

Design combines the Sportsman GS-2 with a kit that incorporates an auxiliary external drive pod below the aircraft, between two large wheels and behind an oversized nosewheel.



Streamlined pod helps minimize the aerodynamic impact of carrying one inert engine in flight.

80-horsepower, 4-cycle, 2-cylinder, liquid-cooled.

Not clear if the prototype vehicle is currently street-legal.

As of July 21, the Plane Driven prototype has flown.

For road travel, wings would fold back (so that their span stretches toward the tail) and rotate (so that their chord line is perpendicular to the ground).

At the tail, hinges allow the stabilizer tips to fold inward.

Controls are quickly snapped into place.

On the ground, 25 miles per gallon.

## Maverick flying car

Steve Saint. Dune buggy with paraglider.

Propeller on the back.

Saint is a missionary. Designed for a tribe he grew up with in the Amazon. Tribe members wanted a better way to reach medical help.

On the ground, the car goes up to 350 miles on a 14-gallon tank 100 miles before it needs refueling. ??????



If the makes it into production, about \$80,000 each.

## **Moller Skycar**

M400 Skycar under the "powered lift normal" category.

FAA has established a "powered lift" pilot's license.

A Skycar is not piloted like a traditional fixed wing airplane.

Has only two hand-operated controls, which the pilot uses to inform the redundant computer control system of his or her desired flight maneuvers.

The Skycar is a powered-lift VTOL aircraft with a projected top speed of over 350 mph and a range of ~750 miles.



## **Volante**

Two-place composite.

Empty weight of about 1,200 lbs.

Gross weight of 1,850 lbs.

Conversion time, either way, in leisurely style, is less than ten minutes and the job can be done by one person.

Cruise at 150 mph with a Lycoming 0320.

Drive at highway speeds as a car. Speed with the flight section trailer attached, will always depend a lot on crosswind.



## **Milner AirCar**

Fly at 200mph and at an altitude of 25,000 feet.

AirCar has wings that fold out at the touch of a button.

Wings tuck up beside the car to allow it to drive on public roads.

Interior has full instrumentation for air and road use.

Four doors and five seats.

Two propeller engines produce up to 296 bhp.

Conventional engine for road use.

39 bhp and ground speed of 85mph.

Foldable wing at the rear and a canard in the front.

Range 1000 miles.

At the moment, working on the car portion.

When complete, they'll bring in a company to build the flying prototype.

The AirCar could be ready in production form by 2010, \$450,000



## **M200G Volantor**

Two passenger, saucer-shaped vehicle.

Take off and land vertically.

Flys about 10 feet off the ground, which allows it to avoid regulation by the FAA.



Eight Rotapower rotary engines.

Flight times, between 45 and 90 minutes, depending on speed.

50 mph.

Hold up to 250 pounds, including driver and cargo.

## **Switchblade**

Flying motorcycle.

Three-wheel design.

Occupants sit side-by-side in an enclosed climate-controlled cab.

Rearview mirrors retract during flight to reduce drag.



Wings scissor open during flight.

“Scissors” wing, swings under the belly of the plane.

Switchblade is 15 feet, 6 inches long, five feet, six inches wide.

Wingspan is 23 feet, five inches.

Cruise at more than 90 miles per hour on land and 134 mph in the air.

60 mpg on the road and 22 mpg while airborne.

\$60,000, DIY kit to market as early as 2011.

120-150 horsepower engine and avionics sell separately for \$25,000.

## **X-Hawk**

Israeli company.

Take off and land like a helicopter.

Contained rotors.

155 mph; altitude of about 12,000 feet.

Stay airborne for two hours..

Fly by wire technology, meets FAA requirements.

Estimated \$1.5 to \$ 3.5 million.



## **The PAL-V Flying Car**

Three wheeled car or motorcycle.

Open up roof and back to find a foldable rotor, propeller and tail section.

Take off in seconds.

One passenger.

125 mph on land; 120 mph in the air.

4,000 feet.

Dutch.

Ready to buy on the market by 2012.

