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The Transition Is a Flying Car

Science fiction writers have often predicted a future where cars would transform themselves into flying machines at a press of a button. Of course sci-fi dream machines didn't need to obey the laws of our natural world, so a vehicle of any shape, with the proper imagined power source, could take flight at a moment's notice.

If you type "history of the flying car" into your favorite Internet search engine, you will quickly discover that over the last 100 years many people have spent vast sums of money trying to perfect a flying car that could be sold to the general public. The stumbling block has always been: How do you build a street-legal car that also meets government standards as an airplane?

It took a group of aeronautical engineering students at the Massachusetts Institute of Technology (MIT) five years to go from concept to government-approved flying car. To accomplish this engineering

breakthrough, it definitely helped that they were all outstanding students with pilot's licenses and a love of flying. They started research and development of their flying car as a student project. In 2006, they established their company near Boston, in Woburn, MA. They chose their company name Terrafugia (pronounced ter-ra-foo-gee-ah), from Latin words that translate as "escape from the earth."

The Transition (Photo 1) is now in production and, if there are no

Photo 1—When it's in flight mode, you can't tell that this airplane can fold up its wings and drive like a car.



Photos: Terrafugia



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Photo 2—In driving mode, the flying car is an ugly duckling. Like some birds, not much to look at on the ground but a thing of beauty when in flight.

delays, the first units will be in customer hands by the end of this year. You will need two licenses to fully operate this vehicle: a regular driver's license to operate it on streets and highways (Photo 2) and a sport pilot's license to fly it as an airplane. Obviously, if you are already a licensed pilot with an automobile driver's license, you won't need any other licensure to operate this craft.

To enroll in flight school as a student pilot, people must be at least 16 years of age. They can't take the exams for a sport pilot's license until they complete at least 20 hours of certified flying time and have passed their 17th birthday. A sport pilot's license will be issued upon passing a written test, in addition to a flight test.

The U.S. Federal Aviation Administration's definition of a light sport aircraft includes the following salient features: The plane's weight limit is 1,320 lbs. (or 1,430 lbs., in the case of a seaplane). The plane has an unpressurized cabin, a single engine, and a maximum stall speed of 45 nautical miles (knots) per hour (51 mph). The plane's maximum speed should not exceed 120 knots (138 mph), it must be simple-to-operate, and it must be extremely easy to fly.

The Transition needed to meet both airplane and car safety standards, which added weight to the vehicle. Terrafugia engineers weren't able to get its weight below 1,430 lbs., which is the maximum weight for a seaplane. The FAA gave the plane an exemption, perhaps treating its road worthiness on par with that of a seaplane's ability to land and

then drive (taxi) to its final destination on water.

The Transition seats two adults and it gets 35 mpg in driving mode, while burning approximately 5 gallons of fuel per hour in flight mode. It has a cruising velocity of 93 knots (105 mph or 172 km/h), and it requires 1,700' of pavement for take-off and considerably more paved roadway for safe landing. The wings fold up or down in about 30 seconds using an electromechanical system. This system operates on the same

principle as the electromechanical system that automakers use to raise and lower the roof on a hardtop convertible.

The developers of the Transition expect its owners to park it at home when not in use, purchase gasoline (premium unleaded) at their local gas station, and then drive it to a regional airport when they have the urge to fly the friendly skies. You can see the Transition in action on the Internet at www.youtube.com/watch?v=yinUvVdhapE.

Recalling the Facts

1. What are the advantages and disadvantages of this light sport aircraft over planes that must be housed at an airport?
2. Do you think that Transition owners will be responsible enough to drive to a regional airport whenever they want to fly? ☹

Alan Pierce, Ed.D., CSIT, is a technology education consultant. Visit www.technologytoday.us for past columns and teacher resources.

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