Flying Cars to Take to the Skies

Manned test flight of the SD-03, August 2020

Once the stuff of science fiction, flying cars are about to become a reality.

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In August 2020, the first open manned test flight of the SD-03 flying car was successfully completed in Japan. This prototype flying car has been developed by SkyDrive Inc., a startup founded by automotive engineer Fukuzawa Tomohiro, who had previously worked at Toyota Motor Corporation.

Fukuzawa joined Toyota in 2010 and then became involved with the flying car project in 2014, when he joined CARTIVATOR Resource Management (hereinafter CARTIVATOR), which was reorganized into the volunteer group Dream-On Management in January 2021.

The compact SkyDrive SD-XX concept vehicle

All Photos: Courtesy of SkyDrive

CARTIVATOR was established as a volunteer group and run by a group of engineers with unique skill sets with the mission "to deliver dreams to the next generation."

Looking back at the work that he has done with CARTIVATOR, Fukuzawa says, "We came up with a bunch of futuristic technology ideas, including underground cars and two-story recreational vehicles. Of all the ideas, we were captivated most of all by the idea of a flying car."

First, CARTIVATOR's engineers began developing a 1:6 scale prototype for test flights. They succeeded in flying the full-size unmanned model in 2018.

With this success, Fukuzawa decided to establish a company developing flying cars as a business, financed through crowdfunding and support from major corporations.

The single-seat human-piloted SD-03 was announced last year. The flying car is about four meters long, four meters wide and about two meters high. It weighs 400 kilograms and occupies the space of two medium-size vehicles in a parking lot. Positioned on booms at the four corners of the SD-03's slim body, which is reminiscent of a Formula 1 racing car, are eight coaxial propellers powered by electric motors. In the public demonstration flight last year, the car lifted approximately two meters into the air

SkyDrive Inc. founder Fukuzawa Tomohiro alongside the SD-03

and moved about at walking speed. The company says that the SD-03 can potentially go up to 200-300 meters into the air and move at about 20-30 kilometers per hour.

According to Fukuzawa, flying cars have many advantages over the small helicopters that are currently used.

"First, the new SD-03 is battery powered, which dramatically reduces noise emissions even when flying low. Second, it requires only a small space for parking, taking off and landing. It is easily operated and an autonomous feature may possibly be introduced in the future. Above all, mass production will make it possible to market flying cars much more inexpensively."

Today, SkyDrive is in high gear, working to introduce a two-seater version of the vehicle commercially by 2023. This model will be able to fly 5-10 kilometers at 50-60 kilometers per hour with a pilot and a passenger on board. Supported by the Osaka Prefectural Government, SkyDrive's goal is to commercialize an air taxi service in the Osaka Bay area, where there are a number of tourist attractions including Universal Studios Japan (USJ).

With further steps toward implementation experiments in Tokyo and other cities, the company aims to begin mass production as early as 2026 and start selling autonomous flying cars in 2028. The company's ultimate goal is for its flying cars to be used widely by the general public as a means of transport.

The Japanese government launched the Public-Private Conference for Future Air Mobility Revolution in 2018, seeking to lay the groundwork for flying vehicle services, including any legislation that would be necessary. In this developing situation, SkyDrive is attracting a lot of attention and people have high expectations for it, as one of the companies on the front line of those competing to develop flying vehicles around the world.

Manned test flight of the SD-02, the predecessor to the SD-03, 2019