



TCAB TECH SUCCESSFULLY COMPLETED TRANSITION FLIGHTS WITH THE E20 EVTOL 50% SUBSCALE DEMONSTRATOR

News / Manufacturer



In 2022 TCab Tech is steadily pushing forward their E20 eVTOL development. During the first quarter of the year, thanks to the hard works of the entire team, they have completed many tilt-rotor transition flights with the E20 50% subscale demonstrator.

E20 50% subscale demonstrator features 6-meter wingspan, 2 lift rotors and 4 tilt-rotors. Like the E20, the demonstrator uses 6 rotors in VTOL and transits to 4 rotors in cruise. The 2 lift rotors are switched-off and locked during cruising flight.

The demonstrator serves as a flight-testing platform for the engineering team to collect valuable flight test data for early validation of the E20 configuration and design. Being the first passenger-carrying eVTOL company in China employed with vectored thrust configuration, the 50% subscale demonstrator is by far one of the largest eVTOL demonstrators currently flew in China.

The 50% subscale demonstrator is the second subscale demonstrator built by TCab Tech. Compared to the previous 25% subscale demonstrator, the latter has the following improvements:

Aerodynamic: larger in size and exactly the same external layout as the full-scale E20, the flight test results collected could further validate the computational fluid dynamics (CFD) simulations.

External Layout: included flaps and variable pitch rotors to improve control laws and aerodynamics validations.

Systems: Conversion corridor of the tilt-rotor could be fine-tuned, plus, every control unit has independent control channel to facilitate failure hazard analysis (FHA) and the examination of the fail-safe design.

Flight Control: Mounted with many data-feedback sensors to collect thorough flight data which could be used to further improve aircraft control algorithms.

While serving as a flight-testing platform, the E20 eVTOL 50% subscale demonstrator is also used to develop in-house structural & durability test facilities, electric motor test-rigs, SIL and HIL flight simulation labs. The know-how gains from the flight testing and the facilities built will pave a smoother path for us to prepare ourselves toward getting airworthiness certification from the Chinese airworthiness authority.



Vertical Take-off in Multi-Rotor Mode



Transition by Tilting Rotors



Cruise in Fixed-Wing Mode

16 APRIL 2022

ARTICLE LINK:

<https://50skyshades.com/index.php/news/maintenance-trainings/tcab-tech-successfully-completed-transition-flights-with-the-e20-evtol-50-subscale-demonstrator>