

## PRESS RELEASE

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SKYFLY TECHNOLOGIES LTD

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### FOR IMMEDIATE RELEASE

## **Skyfly completes flight simulator, hires more engineers ahead of manned test flights**



Left to right: David Barden (Lead Design Engineer), Michael Thompson (CEO), Dr William Brooks FRAeS (CTO), Seb Smith (Electrical Engineering), Devan Rudolph (Design Engineer)

- Skyfly has now completed the flight simulator for the Axe eVTOL (Electric Vertical Take Off and Landing aircraft)
- The simulator runs using the same Embention flight control system as the real Axe eVTOL, which is planned to commence manned flight tests in Q1 2024
- Additional full-time engineers have joined the Skyfly engineering team, making for a total of nine engineers
- Skyfly has successfully completed rotor thrust testing

Skyfly now has its Axe eVTOL flight simulator live, allowing test pilots to assess and fine tune the Axe's control systems and conduct familiarisation flights

ahead of the first manned test flights, which are planned for the first quarter of 2024.

The simulator uses many of the same systems as the real Axe eVTOL, including the Axe's quadruple-redundant and flight-proven Veronte 4X flight controller made by Embention in Spain. It has been fine-tuned using real world data from hundreds of hours of test flying by the Axe unmanned prototype, ensuring it closely mimics the Axe's behaviour and flight characteristics.

*"This is the result of a lot of hard work that has been going on over the summer, and it's an important milestone before we start manned test flights.*

*"This isn't just a flight simulator; it's the product of all the data collected over the past few years of test flying our prototype. This simulator is as close as you can get to the real thing. All the inertias have been set up to replicate the real aircraft, all the wing areas and aerofoil sections are exactly the same as the real thing, as well as the power, the propeller design and the overall weight, so it gives us a really good feel for the performance and handling of the aircraft. It shows just how easy it is to fly the Axe, and that is thanks to our obsessive focus on simplicity."*

**- Michael Thompson, CEO, Skyfly**

Skyfly has been adding to its team of engineers ahead of the first manned flights, which team now totals five full time employees and four contractors. The latest additions to the team are Rob Martin, David Barden, Seb Smith and Devan Rudolph.

Rob Martin, Skyfly's composite structures specialist, brings 30 years of experience as an inventor, engineer and manufacturer. His many past projects include the British Army's Watchkeeper drones - the first UK-designed ISTAR (intelligence, surveillance, target acquisition and reconnaissance) drone. He also has extensive experience with electric-powered vehicles and aircraft, having worked on CUER solar-powered cars, the e-Go electric single-seat ultralight and the Rolls Royce ACCEL, an all-electric race plane which set the

current world electric airspeed record in 2021. Rob is also a guest educator at the University of Cambridge and runs the Light Aircraft Association's composites courses.

David Barden joins the Skyfly team as our Lead Design Engineer. Like Rob, David has worked on the production team for the e-Go electric aircraft. He has also worked for Barnard Microsystems, building long range cargo and surveillance drones for industrial and defence applications. During his seven-year stint with Barnard Microsystems, David designed and manufactured parts both using the latest CAD, 3D printing and CNC machining technologies as well as by hand.

Seb Smith is now Skyfly's Head of Electrical Engineering. A specialist in safety-critical control systems and electric powertrains, Seb comes from an automotive background and previously worked with McLaren, Jaguar Land Rover and Rivian. Seb is responsible for the Axe's propulsion system.

Design engineer Devan Rudolph holds a Masters in Aeronautical Engineering and brings a wealth of experience from his time as a mathematical modelling engineer for Move.ai and an aerospace design engineer for the Near East University's Robotics Laboratory, where he worked on a heavy-lift tilt-wing UAV. He joins Skyfly as a design engineer.

The engineering team is led by Skyfly's long-serving CTO and veteran aircraft designer Dr William Brooks, who has designed 17 different aircraft types spanning a 30 year career in aviation, of which over 2,000 examples are flying today. He is supported by Structures and Certification veteran John Wighton, formerly Head of Stress with Pilatus and Head of Certification at Fokker Aerostructures. Also on the engineering team is LAA-approved inspector, aircraft builder and test pilot Phil Hall, stress engineer Dylan Burkey, manufacturing specialist Richard Tuthill and mechanical engineer Milford Killian-Dawson.

Skyfly's engineering team has recently been completing static testing of the HPD50 motor and rotor assembly in order to verify performance of the motors,

fine tune the pitch of the propeller assembly and to simulate the duty cycle that the aircraft will endure on a daily basis.

*“The test rig we have developed allows us to measure the thrust and twisting torque produced by the motor, and along with data logging from the batteries and speed controllers to give us a whole suite of data we can use to analyse performance. Most*



*importantly, we have tested the motor to full power and verified that the Axe produces more than enough thrust to take off at full payload.*

*“Next up, we will simulate a variety of duty cycles for the aircraft on the test rig to verify reliability, power usage and flight operating times.”*

**-Seb Smith, Head of Electrical Engineering, Skyfly**

*“The Axe eVTOL depends on three things: the hardware, the software and our brilliant Skyfly design and engineering team. We are not inventing the wheel wherever possible, but instead we are buying best-in-class, certified components such as flight controllers from Embention in Spain, and electric motors we are co-developing with Geiger in Germany. Those components, our wing and fuselage moulds and tooling, and our flight-tested prototype account for the hardware. With our simulator, we have now developed and built the software. And with our now nine engineers, we are at full battle strength steaming towards manned test flights, only a couple of months away now, bringing the excitement and buzz within the team to fever pitch.*

*“Following months of loads of analysis, driven by airworthiness requirements and CFD studies, and finite element analysis of the overall structure, we now have flurries of parts for our first manned Axe eVTOL arriving and are seeing the eVTOL come together in front of us. The excitement is palpable.”*

**- Jaap Rademaker, COO, Skyfly**

## **What is the Axe eVTOL?**

With a fully-electric range of 100 miles, or 300 miles with an optional hybrid generator, and a cruise speed of 100mph, the Axe by Skyfly is a truly revolutionary two-seat eVTOL aircraft available for USD 180,000. It is designed for personal use and is as easy to fly as a consumer camera drone. Thanks to its small footprint and low noise, the Axe can be kept at home and flown directly to a destination, in complete comfort and with aerial views to enjoy, without traffic jams or bumpy roads.

Its unique four-winged design (patent pending), developed by renowned aeronautical engineer Dr William Brooks, enables the Axe not just to take off and land vertically like a helicopter, but also to fly, take off and land like a conventional airplane. This globally unique ability to also take off and land on a runway means Skyfly's Axe is the only personal two-seat eVTOL aircraft that you can fly with any existing airplane pilot's license. By providing lift, the wings also enable a much larger range compared to "rotors only" eVTOLs, an extra layer of safety due to its good glide performance, and a class-leading 30-50kw energy use in cruise, comparable to a Tesla but not requiring an eco-unfriendly road..



The Axe also offers greatly increased safety compared to a helicopter, thanks to its eight-motor distributed propulsion, each with its own power supply and its glide ability arising from its four wings, which enables power-off landing. Additionally, the Axe is fitted with a ballistic parachute - which a helicopter can never have due to the positioning of its rotors.

Skyfly does not aim to develop an air taxi that shuttles commercial passengers into city centres, nor is it venturing down the onerous commercial certification route, which leads to high development costs. Instead, Skyfly follows existing certification routes for private kit-built aircraft, which greatly reduces costs for the owner and enables the Axe to be sold at a base price of 180,000 USD.

Unlike commercial air taxis, which require as-yet-unbuilt "vertiport" infrastructure, the Axe eVTOL can take off and land in a garden or any agricultural land where the landowner has given permission, without needing modifications or expensive infrastructure. This use is legal and well established, with many light aircraft owners operating in this way worldwide from private "farm strips".

The Axe is not just an idea or concept, but a fully designed aircraft. Extensive analysis and prototype testing has been carried out and manufacturing is

being readied for series production. Our two teams of aircraft engineers have developed the Axe as a versatile personal aircraft with strict focus on low weight and aerodynamic efficiency and performance. Aside from generating lift from its wings, the Axe also differs from other eVTOL designs in that it uses existing technology from proven and certified suppliers to provide key components, including the propulsion system, battery system and flight control system. Furthermore, unlike other winged eVTOLs, it has no rotating motor or wing elements, but instead has fixed angle rotors, saving on weight, cost, complexity and maintenance. For more information about how the Axe stands out from other eVTOLs, [watch our full explainer video](#).

Skyfly's Chief engineer, Dr William Brooks, has designed the Axe with efficiency at its core, with the four wings giving it the highest energy efficiency in comparison to other two-seat eVTOL aircraft. Compared to many other eVTOL designs, which have no or inadequate wings, the Axe's wings generate useful lift in forward flight, improving efficiency, range and safety, while also giving it the ability to make conventional wing-borne take-offs and landings if required, saving yet more energy.

Skyfly sees the Axe as a direct competitor to currently-available two seat airplanes or helicopters - one that is much easier to fly, safer, quieter and more affordable to buy, operate and maintain. In addition, whichever bigger airtaxi eVTOL wins the race - these will require pilots, and the two seat, side by side Axe eVTOL is the ideal training vehicle - as the only eVTOL worldwide able to train pilots in fixed wing takeoffs and landings, and emergency glide landings, as well as vertical takeoffs and landings.

Following two years of development, CFD and CAD designing, followed by prototype flight testing, the Axe was officially launched in the summer of 2022. In the months since then, the Axe eVTOL by Skyfly has secured dozens of orders and has attracted the attention of air mobility specialist investors. Their backing allows Skyfly to push forward with its development schedule. The strong and lightweight composite fuselage tooling for series production has meanwhile been manufactured and delivered, and with that, Skyfly is now building its first aircraft, with manned test flights due to begin in Q1 2024.

Customer deliveries will follow at the end of 2024, when UK certification is expected.

To find out more about the Axe visit [www.skyfly.aero](http://www.skyfly.aero)

To watch a video of our prototype flying, visit our [YouTube channel](#).

**The Axe EVTOL by Skyfly**  
***You have arrived. Faster, cleaner, safer, smarter.***  
***Less time, more joy, amazing views.***