Pipistrel Alpha Electro

Australia's first electric aircraft
certified for Pilot training private hire and private use

The Pipistrel Alpha Electro is a 2 seat passenger aircraft designed and built in Slovenia.
It is one of the only production electric aircraft in the world and currently, Pipistrel is the only aircraft manufacturer to have achieved certification of any kind of an electric aircraft.

Overview

- The Civil Aviation Safety Authority was the first organisation in the world to grant a certificate of airworthiness for the Alpha Electro, enabling the aircraft to be used for pilot Training and private hire here in Australia before any other region worldwide.
- The aircraft design draws on decades of experience and refinement of a wide range of Rotax powered airframes that Pipistrel are famous for

Safety

The Pipistrel Alpha Electro is one of the safest 2 seat aircraft in the sky with a ballistic parachute as standard, a very usable 15:1 glide ratio in the event of power loss, a strong fail resistant carbon composite frame and multiple layers of safety redundancies in the power storage and delivery system.
Batteries, while still presenting a small combustion risk, have a much much lower risk profile for catching fire than liquid fuel has.

Power

The Pipistrel Alpha Electro is powered by 2 x separate 10.5kWH batteries. Each battery weighs 57KG, one is positioned in front of the firewall where a combustion motor would normally reside and the other is aft of the cabin for Weight and Balance. The aircraft draws evenly from both in normal operation but can run on one only in the event of an emergency.

Performance

The Pipistrel Alpha Electro can easily climb at 1000 fpm + with two passengers and typically uses only 150-250 M of runway for takeoff and landing. At maximum efficiency, the aircraft has around 90 minutes of air time, keeping the required 30% reserve, that gives operators around 60 minutes of usable flight time at low load (one occupant) or 45 minutes of usable flight time at the MTOW of 570KG.
Cruise speed can easily be as high as 100 knots, but a more efficient operating speed is around 75 knots allowing for greater endurance.
Payload capacity is 190KG.

Charging

The Pipistrel Alpha Electro has various charging options, the fastest, using a 20kW charger drawing from a 32A 3 phase outlet, will charge the aircraft from 30% to 95% in around 1 hour and 10 minutes.
Charging from 240v is possible with a 3kW charger at a charge time of 8 hours.
The approximate cost of a full charge at today's electricity prices from the grid is less than $5.
The aircraft can easily be charged from renewable sources and indeed is mostly done so at Lilydale Airport where one aircraft is currently deployed in Victoria.

Noise

The Pipistrel Alpha Electro has a much smaller noise profile than any other aircraft.
From 600 ft at straight and level flight, the aircraft is inaudible from the ground.

Maintenance

The Pipistrel Alpha Electro has a very similar maintenance schedule to legacy piston engine aircraft, however, due to very low heat and almost zero vibration, there is very little wear to any components in the airframe. Additionally, there are no fluids or filters to exchange or replace. This translates to a drastically reduced cost of maintenance with reduced consumables and reduced time slots in scheduled maintenance. Typically less than half the cost of a comparable ICE aircraft.

Training

The Pipistrel Alpha Electro presents flight training schools with a reduction in cost of operations by more than half. Operating in the Sport category, all training and hours completed in the Alpha Electro are 100% contributory to PPL and CPL consolidation hours.
For the typical training lesson of 30-50 minutes physically in the air, the aircraft is exceptionally usable.
Additionally, for private use by non-cross country endorsed pilots of transport routes under 25 NM and recreational flights of around 45 minutes, this aircraft meets these mission parameters more effectively than any other aircraft in its class.

Summary

As the first aircraft in a new generation of aviation propulsion systems, the Pipistrel Alpha Electro has managed to set a strong and capable precedent. Reducing cost, noise, risk and improving the learning and recreational flight experience, electric aviation is sure to rapidly progress with the Pipistrel Alpha Electro leading the charge for affordability and accessibility for new and experienced aviators everywhere.