

The world's fastest all-electric vehicle *Spirit of Innovation* stakes claim

Rolls-Royce has a rich history of air speed record attempts and breaking records, dating back to the Schneider Trophy competitions of the early 1930s.

The speed achieved by test pilot and Rolls-Royce Director of Flight Operations Phill O'Dell in the *Spirit of Innovation* was more than 213.04 km/h (132 mph) faster than the previous record set by the Siemens eAircraft powered Extra 330 LE Aerobatic aircraft in 2017. Never in the history of the FAI record attempts has there been such a significant increase in speed over such a short time, highlighting the rapid pace at which electrification of aerospace is advancing.

Towards the end of November Rolls-Royce indicated that the *Spirit of Innovation* is part of the ACCEL or Accelerating the Electrification of Flight project. Half of the project's funding is provided by the Aerospace Technology Institute (ATI), in partnership with the Department for Business, Energy & Industrial Strategy and Innovate UK.

Spirit of Innovation, the aircraft, was propelled on its recent record breaking runs by a 400kW (500+hp) electric powertrain and the most power-dense propulsion battery pack ever assembled in aerospace. Rolls-Royce worked in partnership with aviation energy storage specialist Electroflight and automotive powertrain supplier YASA.

Phill O'Dell added: *'Flying the 'Spirit of Innovation' at these incredible speeds and believing we have broken the world-record for all-electric flight is a momentous occasion. This is the highlight of my career and is an incredible achievement for the whole team. The opportunity to be at the forefront of another pioneering chapter of Rolls-Royce's story as we look to deliver the future of aviation is what dreams are made of.'*

It is believed that the all-electric *Spirit of Innovation* aircraft is the world's fastest all-electric aircraft, setting three new world records. Data has been submitted to the Fédération Aéronautique Internationale (FAI) – the World Air Sports Federation who control and certify world aeronautical and astronautical records – that at 1545 (GMT) on 16 November 2021, the aircraft reached a top speed of 555.9 km/h (345.4 mph) over 3 kilometres, smashing the existing record by 213.04 km/h (132mph).

In further runs at the UK Ministry of Defence's Boscombe Down experimental aircraft testing site, the aircraft achieved 532.1km/h (330 mph) over 15 kilometres – 292.8km/h (182mph) faster than the previous record – and broke

the fastest time to climb to 3000 metres by 60 seconds with a time of 202 seconds, according to data collected. It is to be hoped that the FAI will certify and officially confirm the achievements of the team in the near future.

During its record-breaking runs, the aircraft recorded up a maximum speed of 623 km/h (387.4 mph) which the team believe makes *Spirit of Innovation* the world's fastest all-electric vehicle.

Warren East, CEO, Rolls-Royce, said: *'Staking the claim for the all-electric world-speed record is a fantastic achievement for the ACCEL team and Rolls-Royce. I would like to thank our partners and especially Electroflight for their collaboration in achieving this pioneering breakthrough. The advanced battery and propulsion technology developed for this programme has exciting applications for the Advanced Air Mobility market. Following the world's focus on the need for action at COP26, this is another milestone that will help make 'jet zero' a reality and supports our ambitions to deliver the technology breakthroughs society needs to decarbonise transport across air, land and sea.'*

A fact sheet about the aircraft is to be found here: <https://www.rolls-royce.com/~media/Files/R/Rolls-Royce/documents/innovation/spirit-of-innovation-factsheet.pdf>

Illustration per www.rolls-royce.com ©