



# ROLLS-ROYCE LEAN-BURN COMBUSTION TEST ENGINE RUNS FOR FIRST TIME

News / Manufacturer



**Rolls-Royce has run a demonstrator engine specifically devoted to the optimisation of a new lean-burn and low-emissions combustion system for the first time. This system is being designed for future jet engine programmes.**

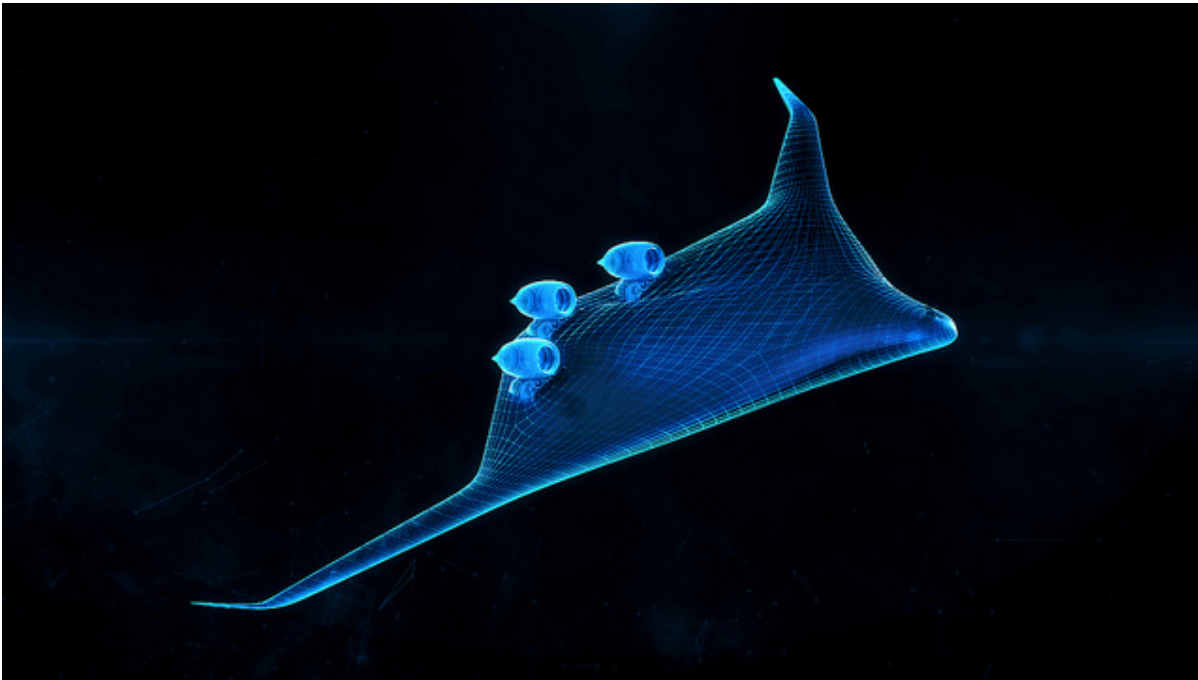
**The ALECSys (Advanced Low Emissions Combustion System) demonstrator successfully ran for the first time on a testbed in Derby, UK. Technology from the system features in both the Advance3 and the UltraFan® demonstrator programmes.**

**The lean-burn system improves the pre-mixing of fuel and air prior to ignition – delivering a more complete combustion of the fuel and, as a result, lower NOx and particulate emissions, both of which are increasingly important to airline customers in terms of operating economics and environmental performance.**

**The development of the system received funding from the European Union’s Clean Sky SAGE (Sustainable And Green Engine) programme.**

The lean-burn system will play an important part in delivering the IntelligentEngine, Rolls-Royce's vision for the future, as it builds on pioneering technology and digital capabilities to deliver important benefits for customers.

Andy Geer, Rolls-Royce, Chief Engineer and Head of Programme - UltraFan, said: "We are very proud to see this technology come to life for the first time. We are confident that the ALECSys system will offer significant benefits for our customers and look forward to putting the demonstrator through its paces."



The first run of ALECSys is the latest in a series of Rolls-Royce key technology milestones that include:

- The Advance3 test engine, incorporating the same core architecture that will be used in UltraFan, ran for the first time in November
- The Power Gearbox that will enable UltraFan to work efficiently at high bypass ratios reached 70,000hp, an aerospace record, in September.

UltraFan is a geared, scalable design suitable for both widebody and narrowbody aircraft. It is designed to offer 25% fuel efficiency improvement over the first generation of Rolls-Royce Trent engines.

The ALECSys system ran for the first time housed within an adapted Trent 1000 engine.



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