



CARTER AVIATION TECHNOLOGIES

An Aerospace Research & Development Company

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CARTER AVIATION PRESENTS SLOWED ROTOR / COMPOUND AS CLEAN SKY SOLUTION

September 8, 2015 (Wichita Falls, Texas) – Carter Aviation Technologies, LLC (Carter) recently hosted a major aerospace company to experience flight in a CarterCopter firsthand. On the heels of that event, Carter has now taken its accomplishments overseas to present to the European Rotorcraft Forum held last week in Munich Germany (<http://www.erf2015.dgfr.de/>). “We’ve been going like mad – preparing the aircraft, training pilots, hosting aerospace companies, and now a hop across the pond,” exclaimed Jay Carter. “No rest for the weary as they say, but we’re actually enjoying all of the recent progress and interest we are generating.”

The European Union has been working on a program called Clean Sky for several years. This program seeks to improve environmental aspects of air transportation with reductions in CO₂ emissions and noise pollution among the objectives. Recently, Clean Sky 2 was initiated with a consortium of participants, a multi-year plan, and a budget of around €4 billion between the European Union and industrial partners. Some of the loftier goals are a 20%-30% reduction in CO₂ emissions and noise pollution with a 2014 technology baseline.



CarterCopter exceeds Clean Sky 2 environmental goals.

“I think we surprised a lot of folks in Munich. They’re working a multi-year plan to create more environmentally-friendly aircraft and here we sit at Carter with a technology that achieves a reduction in CO₂ between 66% [hovering aircraft] and 80% [jump takeoff aircraft],” expounded Jay Carter. “Our presentation created quite the buzz and we expect to be expanding our list of parties interested in learning more about our technology.” Carter’s Personal Air Vehicle or PAV pictured above has achieved an L/D of 11 and the potential to design an aircraft for an L/D of 16 is possible. The reduction in rotor drag achieved with the dramatic slowing of the rotor from a nominal takeoff maximum of 400 rpm to a cruise flight rotation of 100 rpm enables this level of cruise efficiency.

The idea of slowing the rotor down in flight is not new. In the 1930’s, aerodynamicists looking to improve upon autogyro efficiency recognized that if the rotor could be slowed down and kept stable, fantastic rotorcraft performance could be achieved in cruise. In the late ‘50s and early ‘60s, both the US and British governments spent years and millions of dollars trying to significantly slow the rotor. They had some success, but because of noise, vibration, stability, and control issues, it was concluded to be either impossible or impractical. “We have been working the slowed rotor program for 21 years. It took 11 years before we first achieved an advance ratio of one. We had to identify and solve 10 issues to safely slow the rotor – the subject of 22 patents and 6 pending,” stated Jay Carter. The Carter presentation in Munich discussed those issues and the performance results from flight testing that have exceeded the emission and noise goals of Clean Sky 2 (See: [Carter ERF 2015 Paper - Beyond Clean Skies.pdf](#)).

About Carter Aviation Technologies, LLC.

Carter Aviation is a Wichita Falls, Texas based aerospace research and development firm that has developed and demonstrated its Slowed-Rotor/Compound (SR/C™) Technology. More information is available at www.CarterCopters.com. To discuss any of the foregoing or schedule a visit to Carter Aviation’s facilities, please contact Jon Tatro at Jon.Tatro@CarterAero.com.