



# CARTER AVIATION TECHNOLOGIES

An Aerospace Research & Development Company

FOR IMMEDIATE RELEASE

## **CARTER PERSONAL AIR VEHICLE COMPLETES FIRST FLIGHTS WITH NEW ROTOR**

**August 29, 2013 (Wichita Falls, Texas)** – Carter Aviation Technologies, LLC, working in conjunction with Carter Aerospace Development, LLC, has completed the first flights of its Personal Air Vehicle (PAV) with its newest “production” rotor.

The initial PAV prototype rotor was a slight departure from Carter’s original flown on the CCTD from 1998-2005. This initial prototype rotor proved a new yoke to skin joining technology and manufacturing technique as well as a new method to encapsulate the rotor tip weights employing tungsten instead of lead as was employed previously.



The newest “production” rotor has been in work for over a year with the goal of reducing cost, improving performance, and, in particular, design for manufacturing and assembly. The new rotor design offers several significant improvements over the initial PAV prototype design. The manufacturing process has been greatly simplified with time (cost) for some rotor elements reduced by over 300%.

Carter developed the structural and manufacturing techniques enabling elimination of all composite to metal structural bond joints, replacing them with pinned joints and build-ups in the composite layup. The tip weight material was changed to stainless steel instead of tungsten which reduced cost and further simplified manufacturing. The production rotor has a higher solidity than the previous rotor, creating more lift for improved jump takeoffs and added safety margin for landings.

This rotor was thoroughly tested over the last several months qualifying it for flight. Individual components were tested to failure, followed by a static test of an entire full scale blade to failure, and then progressing to spin testing the full scale production rotor. The spin testing was conducted in June and culminated in performing 20 simulated jump takeoffs at a 10% overspeed condition – spinning the rotor at flat pitch to 413 rpm, then increasing the collective to the maximum pitch.

Carter installed the new rotor on the aircraft in July, and took the aircraft to Olney Municipal Airport to begin flight testing. The first flight with the new rotor was completed on July 11<sup>th</sup>.

To date, test pilot Larry Neal has taken the new rotor to 165 mph and slowed it to 124 rpm. Carter will continue expanding the flight envelope with this new rotor, incrementally increasing altitude and airspeed, while simultaneously slowing the rotor rpm.

A video showcasing flights with the new rotor is available at [www.youtube.com/watch?v=qh6ZCXBIRSQ](http://www.youtube.com/watch?v=qh6ZCXBIRSQ).

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### **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. This technology couples the speed, range and efficiency of an airplane with the vertical takeoff and landing (VTOL) capability of a helicopter. More information is available at [www.CarterCopters.com](http://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](mailto:Jon.Tatro@CarterAero.com).