

CubCrafters Researches New Aircraft Innovation: Electric Lift Augmenting Slats

Distributed Electric Power Built Into Leading-edge Slats Has Potential To Significantly Reduce Take Off and Landing Distances

YAKIMA, WA, USA, June 7, 2023 /EINPresswire.com/ -- CubCrafters, a leading designer and manufacturer of Light-Sport and Part 23 Certified aircraft, is testing a new engineering innovation, called Electric Lift Augmenting Slats [ELAS], that the company conceived to dramatically increase wing lift.



Recognizing the potentially broad application for this new ELAS technology, NASA awarded CubCrafters two research grants (through the SBIR/STTR program) to partially fund the project.

ELAS, which was granted US Patent 10,926,868, underscores CubCrafters' four decades of commitment to engineering innovation for the aviation industry. The technology combines electric ducted fans with leading edge lifting slats, to accelerate airflow over the wing of an aircraft. Ongoing testing points to a likelihood for significant reductions in takeoff and landing distances on fixed-wing aircraft with ELAS installed.

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*Patrick Horgan, CubCrafters
President and CEO*

By increasing the velocity of the airflow over the top surface of a wing, ELAS lowers the air pressure above the wing, thereby increasing the lift it can generate. The system

also allows the wing to achieve better aerodynamic performance at slower speeds and higher angles of attack, reducing the stall speed of the aircraft and improving its slow speed handling characteristics.

ELAS is a practical way to enable fixed-wing aircraft to achieve shorter takeoff distances, steeper

approaches, slower landing speeds, and minimal ground roll. By adding leading edge slats with multiple integrated electric ducted fans, ELAS creates high energy airflow through and around the slats -- airflow that ultimately boosts lift by a factor of 1.5 to 4.0 depending on the airfoil geometry and flight conditions.

Patrick Horgan, CEO of CubCrafters explains, "With comparatively low acquisition and operational costs, ELAS is a disruptive concept that carries unprecedented benefits, including enabling fixed-wing aircraft to operate outside of designated airports and manage much higher payloads versus comparable eVTOL aircraft -- all while enhancing safety."

The technology can be added to an existing airframe or built into the wings as original equipment, and can be designed as retractable when not in use.

The company notes that ELAS is being rigorously tested in collaboration with CubCrafters' research institution partner, Oklahoma State University School of Mechanical and Aeronautical Engineering.

"Extensive computer simulations and wind tunnel testing, both at Oklahoma State University and our own facilities, are being used to refine the design in preparation for a comprehensive test flight program using a CubCrafters X-Cub test airplane configured with the ELAS prototype system," declared Horgan. A short video of recent ELAS preflight testing released by the company can be seen on YouTube at this link: <https://youtu.be/VY2KTmeF6D4>

He continued, "As our research and development continues, ELAS may prove to have the ability to dramatically enhance the short field performance capabilities of fixed-wing aircraft in general Aviation as well as Commercial Aviation."

CubCrafters continues to accept new outside investment. Learn more at: <https://cubcrafters.com/investors>

ABOUT CUBCRAFTERS

Founded in 1980 by Jim Richmond, CubCrafters' roots are in the 80+ year history of classic grassroots aviation, but the company's products and services are innovative and completely modern. CubCrafters designs and manufactures Experimental, LSA, and Part 23 Certified aircraft. The Carbon Cub family of aircraft redefined expectations for the backcountry flying experience with innovative design, modern materials, powerful engines, and breathtaking performance. The company's flagship XCub aircraft is offered in both nosewheel and tailwheel configurations, and substantially expands the mission profile of sport utility aircraft with higher speed, longer range, and larger payload. The key to our success is our ability to create unique value in the experience of personal adventure aviation. Learn more at: <https://cubcrafters.com/>

ABOUT NASA'S SBIR AND STTR PROGRAMS

The National Aeronautics and Space Administration (NASA) Small Business Innovation Research

(SBIR) & Small Business Technology Transfer (STTR) programs fund the research, development, and demonstration of innovative technologies that fulfill NASA needs and have significant potential for successful commercialization. Learn more at: <https://sbir.nasa.gov/>

ABOUT THE OSU SCHOOL OF MECHANICAL AND AEROSPACE ENGINEERING

Oklahoma State University's School of Mechanical and Aerospace Engineering creates impact through a growing research enterprise that engages faculty and students in federally funded, state and industry-based innovation. Learn more at: <https://ceat.okstate.edu/mae/>

ABOUT THE PUBLIC OFFERING

CubCrafters has been a privately held company for the first 40 years of its existence, but is now welcoming new public investment. Regulation A of Title IV of the JOBS Act allows mature startups and later-stage companies to raise as much as \$75M per year from both accredited and non-accredited investors and provides that their investments will be liquid to the extent that the company raising capital lists its stock on an exchange or other trading forum. CubCrafters is accepting new investment from investors located in states other than Florida, New Jersey, Texas, and Washington via Regulation A+ at the following link: <https://www.manhattanstreetcapital.com/cubcrafters>

CubCrafters is accepting investments from non-accredited investors in the states of Florida, New Jersey, Texas, and Washington via Regulation CF. More information about investing via Regulation CF is here: <https://marketplace.title3funds.com/offers/PreviewOffers/cub-crafters>

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You must have a net worth of over \$1 million, excluding your primary residence. This can be either individually or include with a spouse or partner.

You must have an annual income of over \$200,000 as an individual, or an annual income of over \$300,000 when qualifying with a spouse or partner.

To learn more about making a private placement investment in CubCrafters via Regulation D, or to ask any other questions, please email CubCrafters directly at: investments@cubcrafters.com

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