





**VOX Aircraft™ LLC presents a revolutionary fixed-wing VTOL UAV-OMV aircraft program**




Analyses show that the vertical take-off and landing (VTOL) aircraft being developed by VOX Aircraft™ will be 2-3x faster and up to 50-70% more fuel efficient compared to a traditional helicopter and will have over 3x the range carrying the same payload. It will also have ~50% lower maintenance costs and the overall design (with multiple redundant systems) is considerably safer with superior handling characteristics.




**Safety in Transition**  
Dedicated lift and forward thrust systems maximize safety and reliability for transition between vertical and forward flight.



**Fully-Enclosed Lift System**  
Our patented VTOL aircraft configuration features embedded lift rotors contained within integral wing "strakes" to eliminate rotor strike risks in tight landing zones.



**Balanced Rotor Placement**  
Our patents dictate using an even number of lift rotors about the aircraft center of gravity, which provides additional failsafe modes in individual rotor failure.



**Fixed Wing Behaviors**  
As a fixed-wing aircraft, our patented VTOL aircraft offers normal flight behavior and efficiencies and the added flexibility of VTOL capabilities.

**Now ready for Advanced CFD and Aero Integrations**

- Rotor & Blade Optimizations
- Duct, Strake, and Wing Interaction Improvement & Enclosure Evaluation

## Brief Project History

The original company was founded in 2005 to develop, produce and market an industry-changing VTOL aircraft configuration: a VTOL air frame offering a huge number of UAV/UAS applications or manned for various military or civil-commercial missions and configurations.

To date, over \$12 million has been invested to advance the project to its current state. Designed as a fixed-wing aircraft capable of conventional take-off and landing (CTOL) operations and cruise fuel efficiency, this airframe can also operate in and out of just helipad-sized areas. This greatly increases its flexibility, allowing it to land at thousands of sites, and to create mission profiles never before possible with tilt-rotor or conventional rotorcraft designs.

VOX Aircraft owns all patents, data, and analysis specific to these proprietary airframe configurations. Several sub-scale prototypes as well as many of the airframe sections and components have been tested and or flown during the development of this platform. The latest version of the prototype will begin flight tests in Q2 2020.



## Military & Partner Focused Business

The projected savings of in-theatre fuel costs will pay for a VOX UAV in one year or less, while the reduced maintenance costs (and time) allow for just two of our UAVs to perform the activities of four other rotorcraft-based UAVs. With VOX Aircraft's incredible flexibility and modular airframe design a plethora of payloads, sensor suites, and specialized mission sets are now possible. A strategic sensor partner could realize great advantage by utilizing a proprietary VOX configuration over any competitors who are limited to conventional multi-rotor or rotorcraft frames.



**VOX Aircraft™  
Leadership:**

**Sam Lubbat,  
Co-Founder & CEO**

- Principal at Tricove Consulting
- Loyola University
- Former Member, Chicago Board of Trade

**Brian Morgan,  
Co-Founder, COO & CTO**

- Inventor & Original Patentor
- Certified Private Pilot
- Certified sUAS/Drone Pilot
- BS Mechanical Engineer
- AS Aviation Maintenance and Business Management

**Dr. Hsin-Hua Tsuei,  
VOX Board of Advisors**

- Top Industry-Leading CFD Aerodynamicist and Analyst 25-Year Aviation Career
- Lead Aero Technologist
- Owner: Tsuei Engineering

**Aero-Science Technology Associates (ASTA)**

**Dr. Kenneth Rosen**

- Former VP of Research and Engineering at Sikorsky
- Advisor to NASA/DARPA and Department of Defense

**Thomas Sheehy**

- Principal Partner at ASTA
- Lead Aerodynamicist

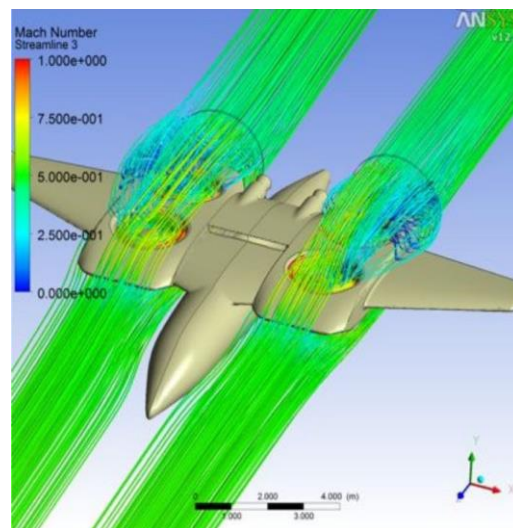
**Patents:**

- Dual System VTOL Aircraft  
US6843447-B2
- Aircraft Attitude and Control  
US7581696-B2, US8302903-B2,  
US8074925-B2, TW1324576-B

**Tech Superiority**

VOX's patented airframe is designed to fly two to three times faster and farther than a comparable helicopter mission at any scale, while burning up to 50-70% less fuel. Compared to tilt-rotor or redirected-thrust VTOL designs, the VOX aircraft presents significantly higher stability, better control, and distinct safety advantages.

**Validation:** VOX's engineering effort is backed by one of the industry's most highly regarded aerodynamicists, Dr. Hsin-Hua Tsuei, who has validated the company's



engineering results using CFD, (computational fluid dynamics). CFD's theoretical basis was first compared with actual physical rotor tests at VOX. Once complete and accurate correlation was realized, design validation and progress was greatly accelerated. The ASTA Group, led by Dr. Ken Rosen, a former senior engineering executive at Sikorsky, also validated our technology through standard aeronautical verifications and data cross referencing done by their team. Mr. Tom Sheehy created an industry first, fixed-wing VTOL airframe configurator using our proprietary design and results.

**Basic Mission Capabilities – VOX AM-300 vs MQ-8B**

A comparably-sized VOX AM-300 UAV has nearly four times the effective range; over twice the MEP/Armament payload; is three times as fast; and has a higher cruise service ceiling than the MQ-8B (smaller Fire Scout) rotorcraft-based UAV:

<b>VOX AM-300 UAV</b>	<b>&lt; Basic Mission Spec's &gt;</b>	<b>MQ-8B Fire Scout</b>
- 425 nm	Mission Radius	- 110 nm
- 400+ lbs	Releasable Payload	- 200 lbs
- 300+/225 kts	Max Cruise/End. Speed	- 120/110 kts
- 35,000/25,000 ft	Max Service/Loiter Ceiling	- 20,000/20,000 ft

