



Breakthrough Aerospace Technology Sonic Boom Noise Mitigation \$1.5M Equity Raise – Wind Tunnel Test

INTRODUCTION

- NCTAR LLC has developed a proprietary technology solution for mitigating the sonic boom heard on the ground from supersonic flight.
- Will allow a new generation of high-speed aircraft to fly supersonically over land quietly.
- Sophisticated, preliminary University computer simulations confirm design effectiveness.
- Patents pending.
- Requires \$1.5M to validate further in wind tunnel trials.
- To accomplish this, firm is considering offering equity in the company to the right partner.

SITUATION BACKGROUND

- Flying supersonically typically creates a loud sonic boom heard on the ground.
- The retired Concorde airliner could only fly supersonically over water for this reason.
- Worldwide aviation regulators are considering opening the skies to supersonic aircraft over land – but ONLY if the sonic boom is at a low, acceptable sound level on the ground.

THE TECHNOLOGY

Proprietary interaction of curved wing, nacelle placement and exhaust stream “virtually eliminates” the sonic boom.

THE OFFERING

After 3 years of development work, New Century Transportation and Aeronautics Research (NCTAR) was formed in 2017 as a pre-revenue, research-stage California Limited Liability Company (LLC).

The firm has developed patent-pending Intellectual Property which mitigates the sonic boom heard on the ground from supersonic flight. This technology will set the stage for a new generation of announced supersonic business jets and airliners to eventually be permitted to fly over land, versus just over water like the retired, noisy Concorde.

While the concept has been proven in computer simulations to be valid and scalable, an additional \$1.5M in funding is needed next for actual wind tunnel testing. This allows an early investor to maximize equity in the company, in advance of future raises for more complex proof of concept design and flight test.

Once all testing is complete and demonstrated, the technology will be licensed to airframe manufacturers for a preliminary license fee of \$25M per aircraft platform, plus license royalties of \$10M per aircraft built. This scheme permits relatively large, early income followed by a recurring revenue stream as supersonic planes are built.

Independent sources estimate a market of 300 supersonic aircraft being built over the first 10 years of which NCTAR captures 50%.

Post-Testing Financials (\$ Millions) (After wind tunnel and proof-of-concept flight testing)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
License Revenues	25.0		25.0		25.0		25.0	25.0	25.0	25.0					
License Royalties										10.0	30.0	90.0	190.0	390.0	800.0
Expense	(4.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)
Net	21.0	(5.0)	20.0	(5.0)	20.0	(5.0)	20.0	20.0	20.0	30.0	25.0	85.0	185.0	385.0	795.0
Cumulative	21.0	16.0	36.0	31.0	51.0	46.0	66.0	86.0	106.0	136.0	161.0	246.0	431.0	816.0	1611.0

aircraft per year 0 0 0 0 0 0 0 0 0 0 1 3 9 19 39 80

10% Equity = Pre-money valuation \$13.5M

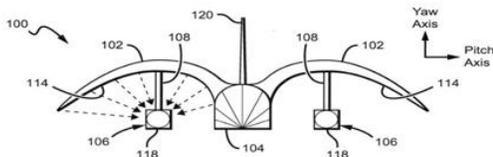


MARKET

- Estimates are for 300 supersonic jets in the first 10 years, with NCTAR gaining 50% market share.
- Announced entrants Aerion, Spike Aerospace and Boom Supersonic are all candidates for the technology.
- Unannounced civil licensing candidates include Boeing, Airbus, Dassault, Gulfstream, Embraer, Bombardier, Textron and others.
- Military candidates not listed above include Lockheed Martin, Northrop Grumman and others.

KEY MILESTONES

- 2014 – Developed first principles and wing geometry.
- 2015 – Computer Aided Design confirms structural elements.
- 2017 – Further confirmed theory with 3-dimensional Computational Fluid Dynamics computer simulation.
- 2018-2019 – Data assimilation. Preliminary findings suggest there will be no sonic boom propagation to the ground.
- Next step: Wind tunnel validation
- Future steps:
 - Design/build proof of concept vehicle
 - Flight test proof of concept vehicle
 - Validate all test data



KEY MANAGEMENT

John Schlaerth Jr., Founder

- Inventor, aerospace engineer MS, MBA
- Over 30 years in aviation industry
- Previously with Boeing and Hughes aerospace
- Years of sonic boom mitigation work with Caltech faculty

Mark Bryan, Co-Founder

- Startup coordinator, strategic plan, onboard team
- Experienced innovation consultant for Fortune 500's

Jim Dawson, Strategy Team

- Aerospace engineer & intellectual property patent lawyer
- Strategic partner advisor

Brian Foley, Strategy Team

- Former Boeing and Dassault Falcon Jet executive
- Entrepreneur forming consulting and fundraising firms

Tim Colonius, Ph.D., Proof of Concept

- Professor of Engineering, Caltech, Pasadena
- Conducted computational fluid dynamics tests

Ron Palfery, Acting COO Design/Build

- Former CEO of \$2B aircraft manufacturing consortium
- Aerospace design/build engineer and M&A specialist

Luigi Martinelli, Ph.D., Proof of Concept

- Assistant aerospace engineering professor at Princeton
- Fluid dynamics and related software experiments

Anita Sengupta, Ph.D., Proof of Concept

- Assistant aerospace engineering professor at USC
- Specialist in fluid dynamics, modeling & wind tunnel

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