



PROJECT BOOM

# Sponsorship Prospectus

Project Boom is a student-lead initiative aiming to design, build, and fly the world's first-ever student-built supersonic remote-controlled aircraft.

As a student-led initiative attempting a task that has never been accomplished, it is important that we tell the story of this incredible project from the start.

We are a group of highly-motivated kids from all over the world facing more than one barrier. Cost, experience, timezones, expectations - these are all barriers that will be broken. The sound barrier is just the destination.

**This is the journey.**

**04** About Project Boom

**08** The Project Boom Family

**12** Aircraft Engineering and Design

**16** Deliverables and Sponsorship

# FOREWORD

Project Boom was founded by two college students from Oklahoma on April 29th, 2020 amidst the COVID-19 pandemic with the goal of being the first student group to break the sound barrier with a jet aircraft. From the beginning, Project Boom has strived to inspire students everywhere by serving as an example of what is possible when young-minds forget borders and work together.

Each day our members work together from across the globe to design our extremely complex high speed aircraft. The level of international collaboration that our team has demonstrated over the last year is unprecedented, and serves as a

model for future student teams. Our unique project organization allows us to combine the minds of hundreds of students from around the world, but bars us from receiving university specific funding. For this reason, we know we can't accomplish this task alone.

In 2021, with the support of our sponsors, our team will manufacture and fly the world's fastest civilian unmanned jet aircraft, forever leaving our mark in history.

Will you join us on our journey to the sound barrier?

*Colin Watson*  
Co-Founder

## FOUNDERS

Cole Replogle  
Colin Watson

## CHIEF ENGINEER

Johnathan Burgess

## TEAM LEADS

Abdallahman Mansy  
Allison Gundrum  
Ben Schroeder  
Daniel Sykes  
Gaurav Jalan

Jack Proudfoot  
Jake Compton  
Minos Park  
Shiva Vallabhaneni  
Skyler Jacob







INSPIRED BY HISTORY

Project Boom's inspiration stems from a rich history of aviation from general aviation aircraft to historic military aircraft like the Bell X-1.

INTRODUCTION

We understand that as a donor, you need to be confident in our project before gifting us your valuable money and time. The goal of this document is to provide that confidence by walking you through the countless hours of hard work that have already gone into Project Boom.

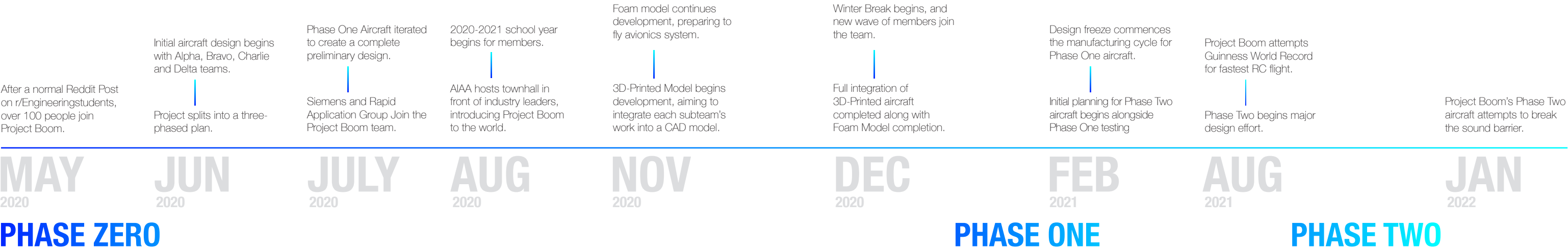
This includes introducing you to our team and advisors, describing our three phased plan of action, presenting some of our most recent work, and illustrating our promised deliverables to your company.

Over the past eight months, the team has grown exponentially and has attracted many different advisors to the team. With our diverse team of industry advisors, we hope to inspire your confidence in our team. One of our advisors, Founder and CEO of Watfly, Gonzalo Espinoza Graham, decided to help us with this

endeavor because he saw the potential in Project Boom, saying:

“I think comparatively they are achieving a lot with a nano particle of the resources. There is a risk-benefit asymmetry with these kind of student led ventures that I think could be scaled to bigger and more ambitious projects, as if a supersonic drone is not ambitious enough.”

We hope through this booklet and your experience with Project Boom, you can see some of what Gonzalo saw in us and help us achieve our goal to break the Guinness World record and go supersonic.

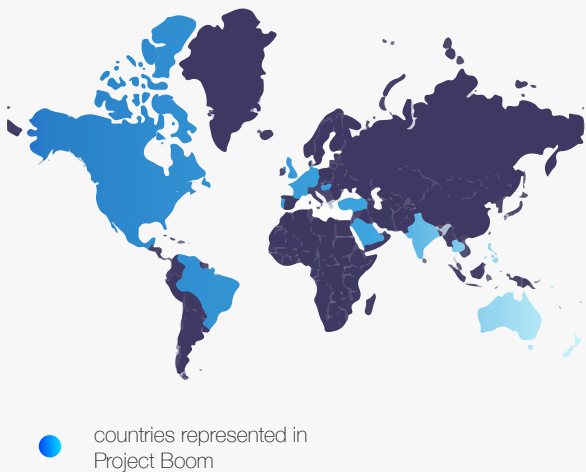


A GLOBAL FOOTPRINT

The primary audience for Project Boom are students. Here are some of the important demographics to consider as a potential sponsor to our incredible project.

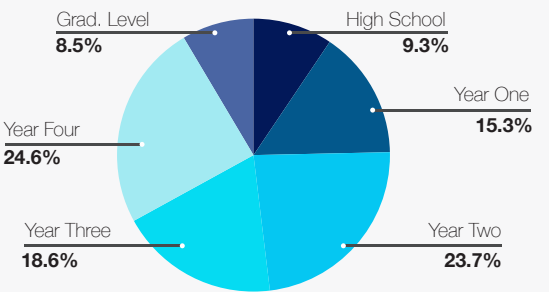
270+ students onboarded

20 represented countries



A GENERATIONAL MIX

Project Boom does not discriminate on age or experience. Here is a breakdown of the team.



PROJECT BOOM

About Project Boom



A TRUE MACGUFFIN

While building an autonomous, supersonic aircraft is the goal of the team, Project Boom was built with a greater idea in mind. The team's true purpose is to empower students to tackle complex engineering problems.

A GLOBAL IMPACT

The Project Boom team is made up of a diverse group of students from all over the world. Every day, members from different continents work together to design different parts of our high speed unmanned aircraft. Since our inception in April of 2020, we have onboarded more than 270 members. These students represent more than 70 different universities located in more than 20 countries around the globe.

A SUPERSONIC FUTURE

In the next two years, Project Boom is positioned to impact the engineering and aerospace community in a large way. First, on the heels of our record-breaking and supersonic flight attempt, the marketing team will be positioned to successfully gain global

media attention. Through our efforts to show our work and promote kids in STEM, the publicity of this project will directly benefit all of the sponsors who helped make Project Boom a reality.

Secondly, as many of the original Project Boom team members complete their degree at their respected universities, sponsors will have the ability to personally recruit our future engineering leaders. As Project Boom represents over 70 different universities, we offer a diverse audience of impressive students who aren't afraid to tackle the greatest engineering challenges.

*"It is important that we support young engineers so that we can continue to push our industry forward. Project Boom is a great example of students that are striving to better themselves, which in the end will better the aerospace industry. For that reason, Acorn Growth Companies is a proud sponsor of Project Boom."*

**RICK NAGEL**  
ACORN GROWTH  
COMPANIES



PROJECT BOOM

The Project Boom Family

MEET THE FAMILY



LUCIEN JUNKIN  
NASA

Lucien Junkin is the Chief Engineer for NASA's Space Exploration Vehicle. Since joining the project on July 2nd, Lucien Junkin has provided vital guidance to our leadership. Lucien's many years in the industry offers our team a perspective that would be otherwise impossible to obtain.



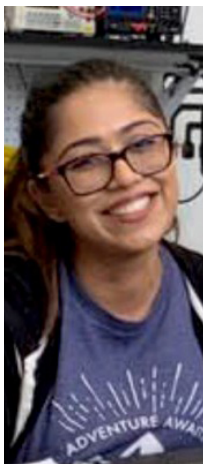
ALDO MARTINEZ  
BOEING

Aldo Martinez is a USC graduate and current Aerodynamics engineer at Boeing. Along with providing his engineering expertise, Aldo has helped guide our team of young engineers into the professional aerospace world. His support is has been a critical part of our team's continued professional development.



CRAIG DAMLO  
BLUE ORIGIN

Craig Damlo is a Senior Systems Engineer at Blue Origin and an early advisor for Project Boom. Craig's experience working as a systems engineer has been a crucial part of getting our team set up to design our supersonic aircraft.



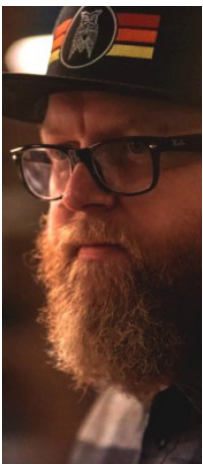
KHUSHBU PATEL  
RELATIVITY SPACE

Khushbu Patel is an Avionics hardware in the loop engineer at Relativity Space. Graduating from the University of Texas at Austin with a Bachelor's of Science in Aerospace, Khushbu worked with some of the coolest new aerospace startups like Virgin Orbit and Relativity Space.



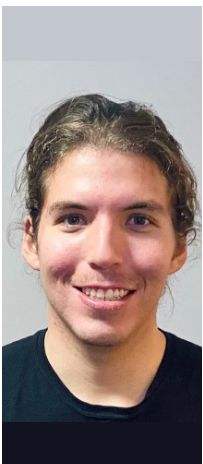
BRENT LESSARD  
RLOOP FOUNDER

Brent Lessard was the founder of rLoop, a global crowdsourced engineering project much like Project Boom. Brent is also known for his work on high-speed ground-based transportation projects. His experience and advice for tackling grand engineering challenges was integral in the inception of Project Boom.



ROB SHERRARD  
NIMBIX

Rob was bitten by the entrepreneurial bug early in his career while working at AudioNet, which later became Broadcast.com, a Mark Cuban venture. Since the late '90s, he has been building and delivering online services and data-centers for media, banking, advertising, and content platforms. Rob's company Nimbix was key in our aircraft development, allowing us to run CFD simulations quickly.



GONZALO GRAHAM  
WATFLY

Gonzalo Graham is a graduate of the University of Waterloo and a former Tesla engineer. Gonzalo is now the CEO and founder of Watfly, a company designing and building EVTOL aircraft - or flying cars. His experience running his company and working on engineering design teams similar to Project Boom has been crucial to our success.



JOSH FARAHZAD  
WHATIMBUILDING

Josh Farahzad was the Founder and Project Lead for Operation Space, a collaborative design team that successfully launched a two-stage rocket to 150,000 ft. After the conclusion of Operation Space, Josh went on to become the Founder and CEO of whatimbuilding.com. Josh has been a supporter and advisor of Project Boom since the beginning.



BRYCE FONG  
LOCKHEED MARTIN

Bryce Fong is an Aeronautical Engineer at Lockheed Martin and has actively worked with our engineering teams to help design our aircraft. His constant technical guidance has had a key role in many of the engineering decisions made throughout the project.



JOE WILDING  
OPENATLAS

Joe Wilding is an aerospace engineer with over 20+ years of experience in various areas of aerospace development. In the past few years Joe made waves in the aerospace industry as the Co-Founder and CTO of Boom Technology, who are building the next generation supersonic aircraft.



MATT STOTT  
PRODUCT CREATION STUDIO

After graduating from the University of Leeds in 2011, Matt Stott went on to work at Cobham as a project and program manager. Matt's years of program management experience has helped our team develop into an efficient engineering design team. Along with this, he has used his experience with data export regulations to help guide our team's global collaborative efforts.

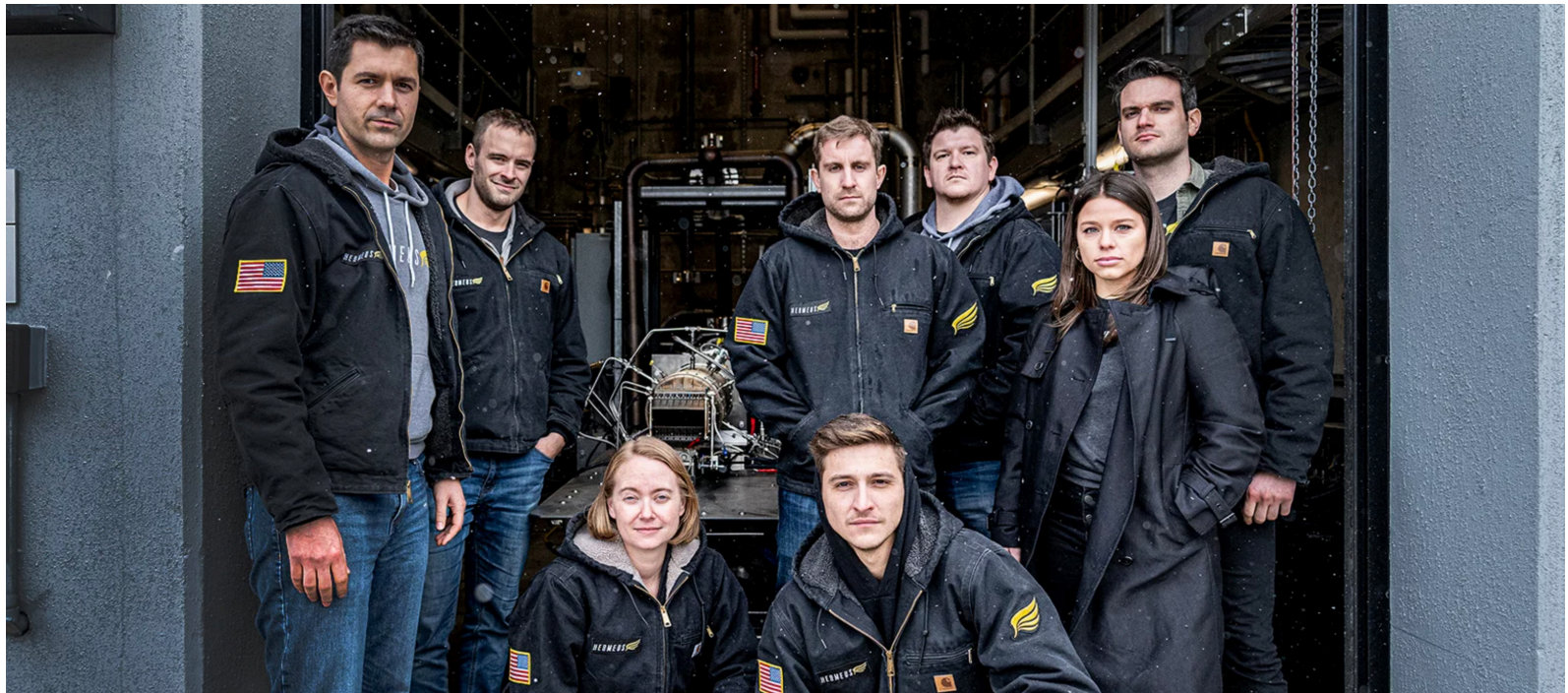
THE 'A' TEAM

To support our amazing student members, we have amassed a talented team of industry professionals from top aerospace companies to advise us on our journey to the sound barrier.





**PROJECT BOOM**  
The Project Boom Family



**A GLIMPSE INTO THE FUTURE**

The Hermeus Team which began in 2018 represents the future of the aerospace industry with their start-up mentality, and penchant to take on impossible engineering challenges. The Project Boom team hopes to learn from their experience as we begin to step into their shoes in the next few years.

**SEEKING ADVISEMENT**

As a group of kids in high school and college, a major barrier in developing our aircraft is experience. To support our amazing student members, we have amassed a talented team of industry professionals from top aerospace companies to advise us on our journey to the sound barrier.

One of the companies who extended their hand of support has been Hermeus, a company developing a Mach 5 commercial aircraft. With both organizations, Project Boom and Hermeus

aiming to redefine what's possible, their advisement is instrumental in helping Project Boom carve out its place in the aerospace community.

Hermeus is not the only company who has played a large role in Project Boom's current success. Companies such as Nimbix have provided invaluable advisement and support, enabling the Project Boom team to complete computational fluid dynamics simulations in no time at all. See below for a list of our current sponsors.



**FROM THE GARAGE TO THE AIRFIELD**

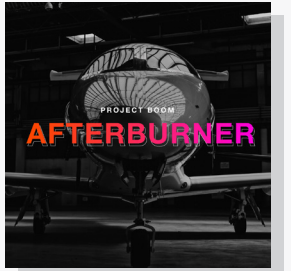
On Jan. 6th, 2021 Project Boom took the *Valient*, an off the shelf RC aircraft, out to an airfield in Stillwater, Oklahoma and successfully achieved autonomous take-off and landing. In the next few months, Project Boom will be ready to fly fully autonomously with the Phase One Model.



Project Boom is a fully inclusive organization that welcomes people from all backgrounds. Our global team provides a unique opportunity for all of our members, advisors and sponsors, allowing new ideas and perspectives to be shared. This diverse environment demands that our members have an open mind and encourages creative thinking. In sum, joining the Project Boom community has proved to be one of the most valuable experiences for our members. ✓

*Hear more from our advisors on our podcast 'Afterburner', where we dive deep with the aerospace community.*

[theprojectboom.org/podcast](https://theprojectboom.org/podcast)



**CURRENT SPONSORS**





# AIRCRAFT



## IN THE WORKSHOP

Development on the Phase One aircraft is underway with the creation of a Foam model aircraft as a proof of concept. The Foam model will act as a testbed for the autonomous system.

## A NEW COMMUNICATION MODEL

Project Boom is a global collaboration of students, which introduces a whole host of challenges including effectively working across 15 different time zones. To accomplish this, our team has come up with novel ways to communicate and work with each other. Our teams extensively use group messaging apps like Slack and Zoom to communicate on a daily basis. Furthermore, the team has developed a unique bid system that allows members to work on tasks when it is convenient to them.


## SIMULATION

As a student design team, we have limited access to resources like high speed wind tunnels to test our aircraft in. However, thanks to our sponsors Siemens and Nimbix, our team has been able to run high fidelity computational fluid dynamic simulations that validate our aircraft design. **ADVANCED PROTOTYPING** Before we manufacture our record breaking aircraft, our team is developing a series of full-scale prototype models. These aircraft will help us

# DEVELOPMENT

## MANUFACTURING

develop our manufacturing techniques and will serve as test beds for our avionics system. Our first prototype is a foam aircraft with some 3D printed components. Developing this model has taught our team key manufacturing techniques that will help us when we begin manufacturing our final aircraft later this year. For our second aircraft, our team is 3D printing 95% of the model, including the skin and internal structure. Manufacturing the aircraft in this way allows us to easily change the aircraft's design, while simultaneously reducing manufacturing errors.

Designing an aircraft is one thing, manufacturing it is an entirely different problem. Thanks to the support of our sponsors, our team has been able to set up a manufacturing shop in Stillwater, Oklahoma. This shop will be used to manufacture all of our prototype aircraft as well as our final carbon composite record breaking plane. Along with our team's shop, we have been given access to facilities at Oklahoma State University, enabling the team to develop the aircraft at a low cost. 

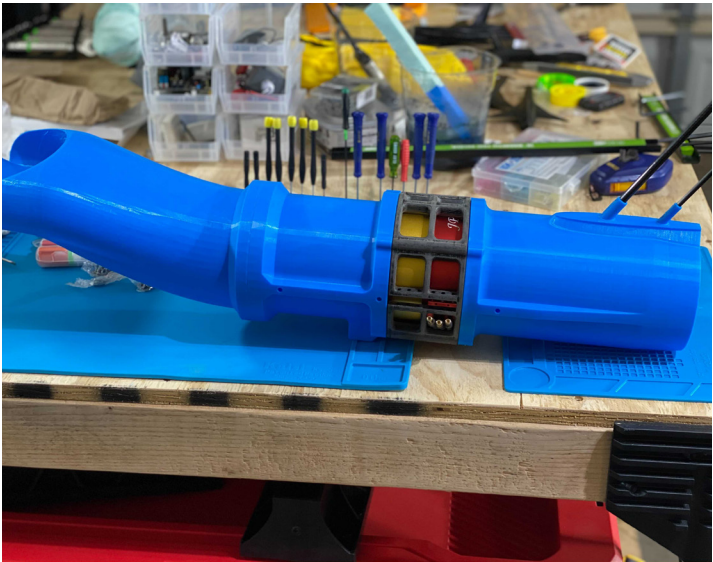
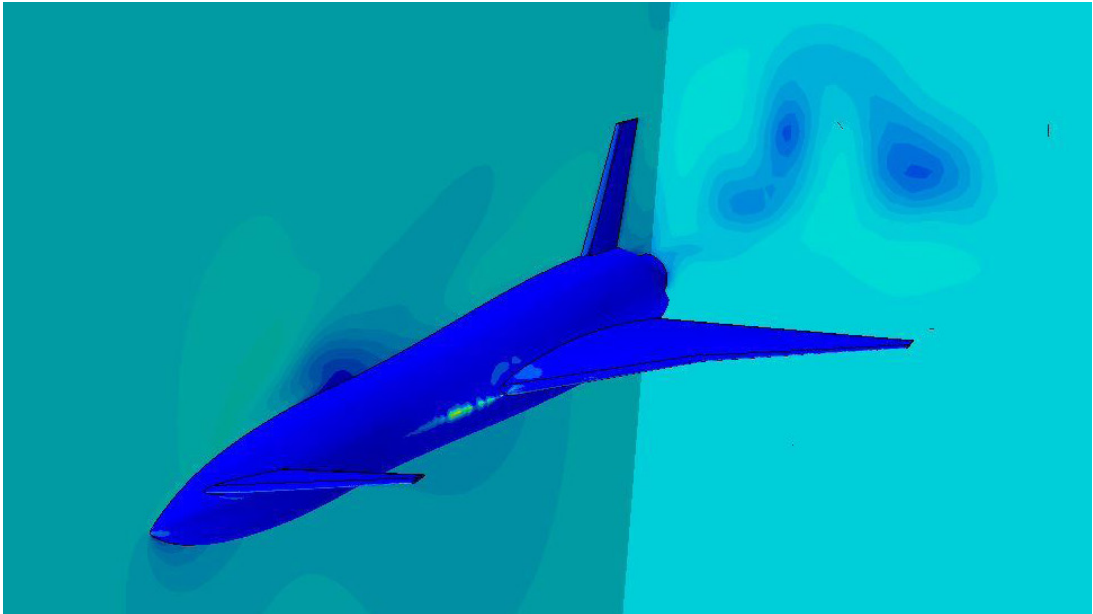


**PROJECT BOOM**

Aircraft Engineering and Design

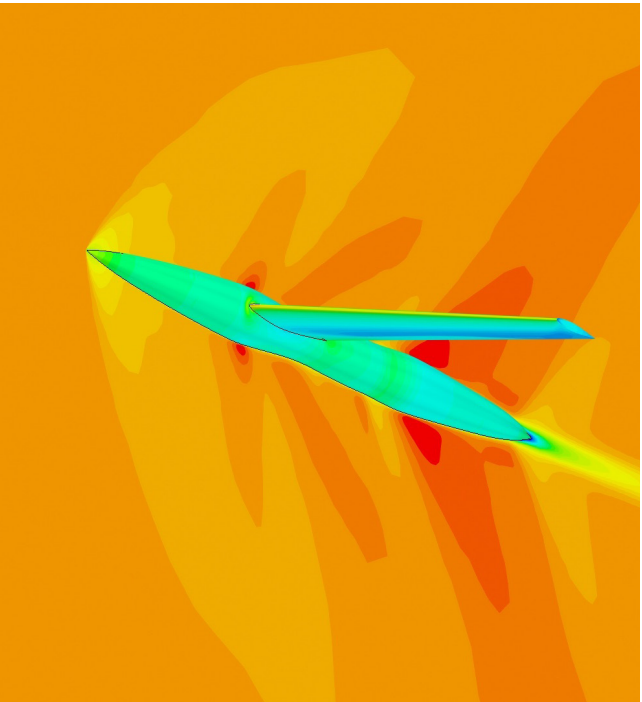
**SLOW AND STEADY**

CFD simulations are ongoing at Project Boom. This visualization is from a Mach 0.1 run, showing high angle of attack and separated vortices from the canard and wing.



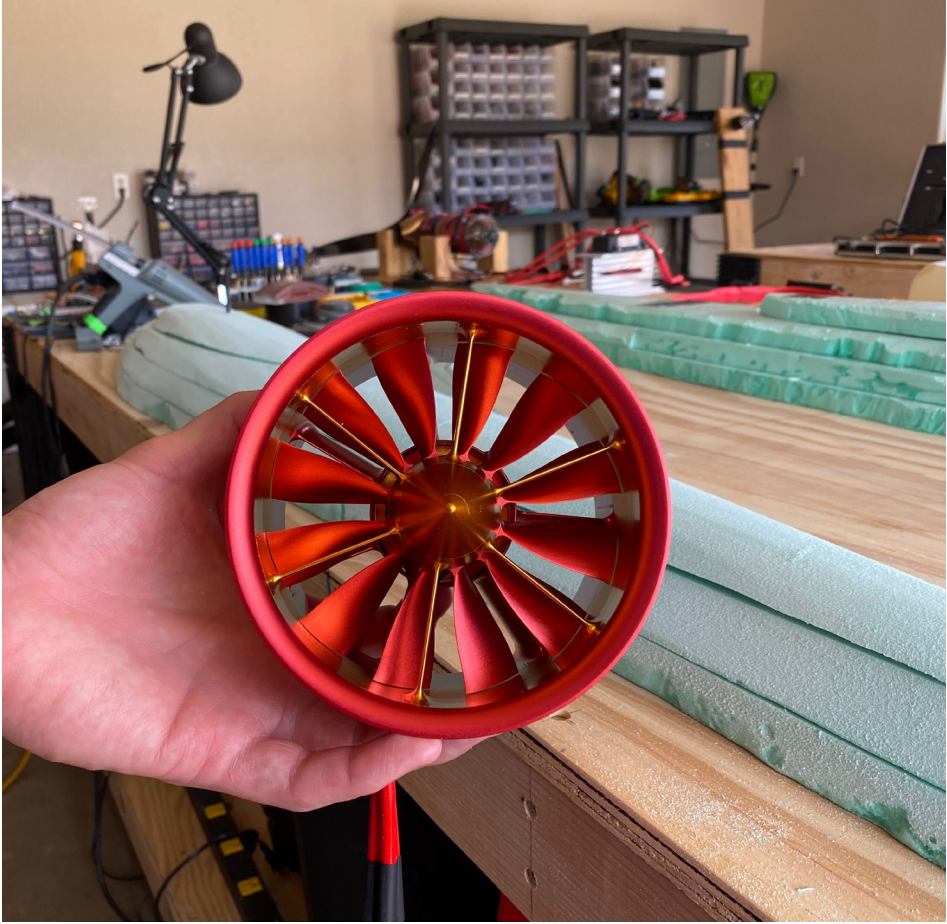
**EXHAUSTING WORK**

Project Boom's Foam model has been quite a lot of work. In the workshop, Chief Engineer Johnathan Burgess has printed and assembled the EDF mount with the inlet and exhaust nozzle.



**IT'S GOOD TO FEEL VALIDATED**

To know our CFD is valid, CFD lead Jack Proudfoot ran a simulation of a model from an old NASA paper in order to compare results.


















**WE'VE GOT A FAN!**

Meet the face of our JP 120 mm EDF engine for the foam model and eventual 3D-printed prototype aircraft. The Phase One and Phase Two aircraft will use turbojet engines.



# JOIN THE FAMILY

**NON-PROFIT CORPORATION**  
Project Boom Inc. is a non-profit corporation in the state of Oklahoma, founded and run by the students of Project Boom. This organization allows us to provide certain tax benefits to our donors and use a company bank account for all project transactions.

	SUBSONIC \$1000+	TRANSONIC \$2500+	SUPERSONIC \$5000+	HYPERSONIC \$10000+
Name or Company logo on website				
Request bank statements on project spending				
Social Media Posts and features on project media				
Company shoutout in future mainstream media articles/videos				
If permitted by the FAA and location management, invitation to attend our first record attempt				
Podcast guest and feature				
Company logo on aircraft livery				

**BENEFITS**

Project Boom would not be possible without our amazing sponsors. As a non-profit we are limited in the ways we can give back to our donors, however, we strive to do as much as we can to show our appreciation. The above table lays out what we offer for different levels of contribution. We believe that our mission has the ability to reach a large, diverse audience and we hope that by supporting us, our sponsors can as well.

**DONATION**

If your company is interested in becoming a sponsor of Project Boom, please reach out using the contact information listed on the following page. We are happy to work with any company to come up with a plan that makes them feel confident in their contribution. Thank you for taking to the time to learn about Project Boom, we hope join us in our journey to go supersonic.

**CONTACT**

For direct contact, please send a message to **sponsors@theprojectboom.org**. If you are interested in the project and would like to see more, we are found @theprojectboom on Instagram, Facebook, and Twitter. For professional inquiries or interest, see our page on LinkedIn. The Project Boom team would love to interact with you! Lastly, please visit our website theprojectboom.org and sign up for our newsletter for project updates. 





*#gosupersonic*



PROJECT BOOM