

LOXODON-1

SPONSORSHIP PACKET



ABOUT US



Loxodon-1 is a student-led project developing Puerto Rico's **First** Liquid Engine-Powered Rocket to compete in **FAR-OUT 2027**.

After being founded in 2019 at the University of Puerto Rico, Mayagüez Campus, in its initial years (2019–2021), our team tackled an ambitious **500-lbf** LOX/Jet-A engine design. However, due to resource constraints at the time, the project transitioned into a research-focused phase (2021–2023), culminating in a research presentation at **ASCEND** in 2023. In 2024, Loxodon-1 underwent a complete strategic pivot, shifting from theoretical studies to a more hands-on philosophy, our team focused on developing, manufacturing, and hot-firing a Minimum Viable Product (MVP) liquid rocket engine. Across full engineering cycles spanning design, CFD/thermal analysis, component manufacturing, and cold-flow testing we were able to build a sufficient technical foundation.

In May 2026, Loxodon-1 achieved a historic milestone: **the successful 8-second hot-fire test of Copperhead**, a 50-lbf GOX/Jet-A liquid rocket engine.

This accomplishment marked the **first successful hot-fire** of a liquid bipropellant rocket engine in Puerto Rico. The success of the Copperhead project validated Loxodon-1's custom test stand infrastructure, fluid systems, engine manufacturing processes, and testing operations.



Loxodon-1's mission is to create space industry pioneers within Puerto Rico through industry level technical engineering while establishing UPRM as a key contributor to the broader liquid rocketry and aerospace community. Building on the success of Copperhead, Loxodon-1 is moving toward its next major milestone: **developing and launching Puerto Rico's first liquid powered rocket**. The team aims to compete in the **FAR-OUT** competition by **Summer 2027**.

OUR FUTURE



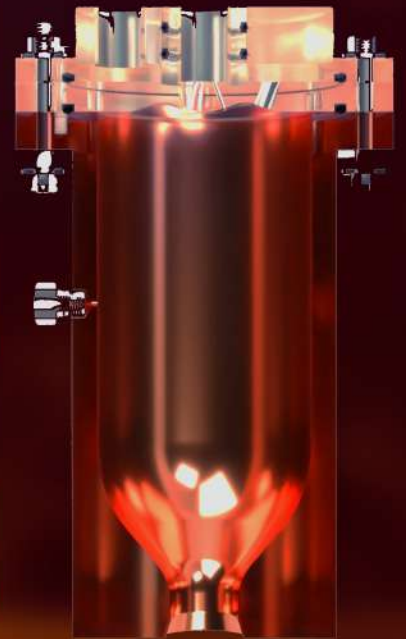
COPPERHEAD HOTFIRE:

Primary hardware testing of the **50 lbf** GOX / Jet-A Copperhead engine. This 8s burn verified our manufacturing, data acquisition, and propellant handling systems under hot-fire conditions.

**50 LBF
THRUST**

**8s
BURN TIME**

GOX/JET-A



**350 LBF
THRUST**

**10K
APOGEE**

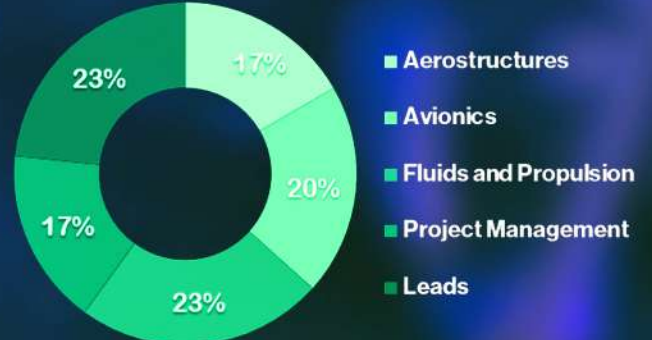
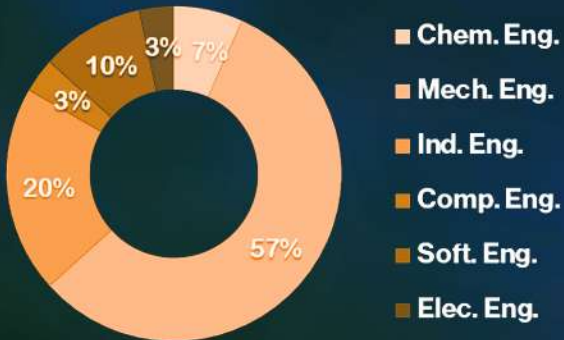
**3.5s
BURN TIME**

NEXT ENGINE / VEHICLE INTEGRATION:

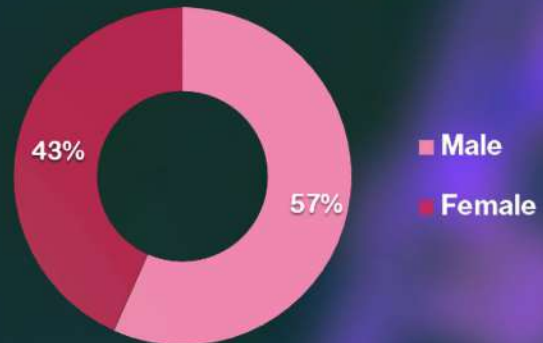
Transitioning from static testing to full vehicle integration for the **FAR-OUT 2027** competition. Development is centered on an integrated flight engine featuring a regeneratively cooled Inconel **718 chamber** running on **NOX** and **Ethanol**. Operating at **350 lbf** thrust with a target Isp of **220s** and a **3.5s burn time**, this propulsion system is engineered to power our launch vehicle to a **10,000 ft apogee**.



THE TEAM



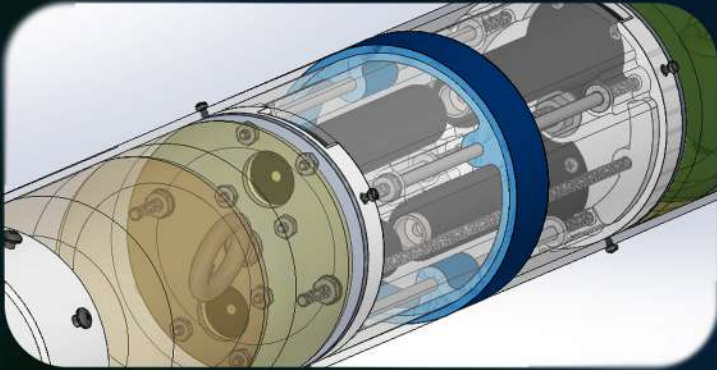
Loxodon is developing Puerto Rico's first liquid propulsion rocket, but our impact extends far beyond aerospace. Our members gain hands on experience in design, manufacturing, testing, systems integration, data analysis, quality, and project management skills that translate directly across Puerto Rico's engineering industries.



By supporting Loxodon, sponsors invest in developing multidisciplinary engineering talent prepared to solve complex, real-world challenges while demonstrating Puerto Rico's capacity to design, build, and innovate.



AEROSTRUCTURES



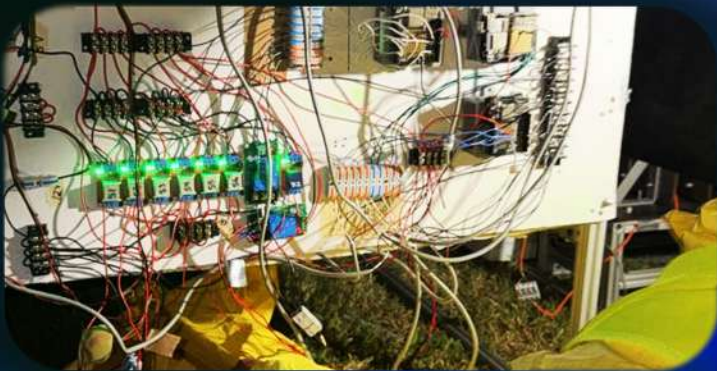
Designs and manufactures the physical airframe, load-bearing structures, fins, and recovery deployment mechanisms to ensure structural integrity and aerodynamic stability during flight.

FLUIDS & PROPULSION



Engineers the rocket engine, combustion chamber, injector, propellant feed systems, pressurization lines, valves, and test stand infrastructure for safe engine operation and thrust generation.

AVIONICS



Develops the onboard flight computers, telemetry systems, sensors, power distribution, and ground station software to monitor, control, and log flight data in real time.

PROJECT MANAGEMENT



Oversees team operations, scheduling, budget allocation, logistics, safety protocols, and sponsor relations across all technical divisions, as well as executing events and sales for revenue acquisition.

COMMUNITY



Here at Loxodon, **every dream** is important to us, no matter how big or how small, but a dream **cannot be a goal without a plan**.

That's why our dedicated team of undergraduate students strives to help pave a path for those who are just beginning to imagine what their own ambition will be.

From community talks and services to sales and outreach activities, we expand ourselves in **every form possible** to spread our influence to everybody. We are never done yet, because we know that even if a goal has been achieved, **a new one will arise, and we will too**.



By supporting Loxodon, you aren't just funding aerospace innovation, you're investing directly in the next generation of engineers, thinkers, and leaders. Together, we can transform ambition into action and inspire our community to reach for the stars.

COSTS



To launch Loxodon 1 successfully at the FAR-OUT competition, our team requires an estimated budget of **\$45,000** for the 2026–2027 academic year. This capital directly funds critical rocket hardware, testing safety, logistics, and student travel.



Partnering with Loxodon goes beyond writing a check. We offer three primary avenues for sponsors to directly impact our launch success:

1. Financial Support

Direct monetary contributions allow us to meet our baseline hardware requirements, cover travel costs for our student engineers, and secure competition entry.

2. In-Kind Donations

Equipment and material support keep our development moving forward. Key in-kind needs include:

- **Raw Materials & Hardware:** Aerospace-grade metals, composite materials, valves, fasteners, and fittings.
- **Instrumentation & Electronics:** Sensors, transducers, avionics components, and wiring harnesses.
- **Services & Tools:** Machine shop time, precision manufacturing/CNC services, tools, and engineering software licenses.

3. Technical Mentorship & Guidance

Access to industry expertise is invaluable to our undergraduate team. We welcome mentorship in:

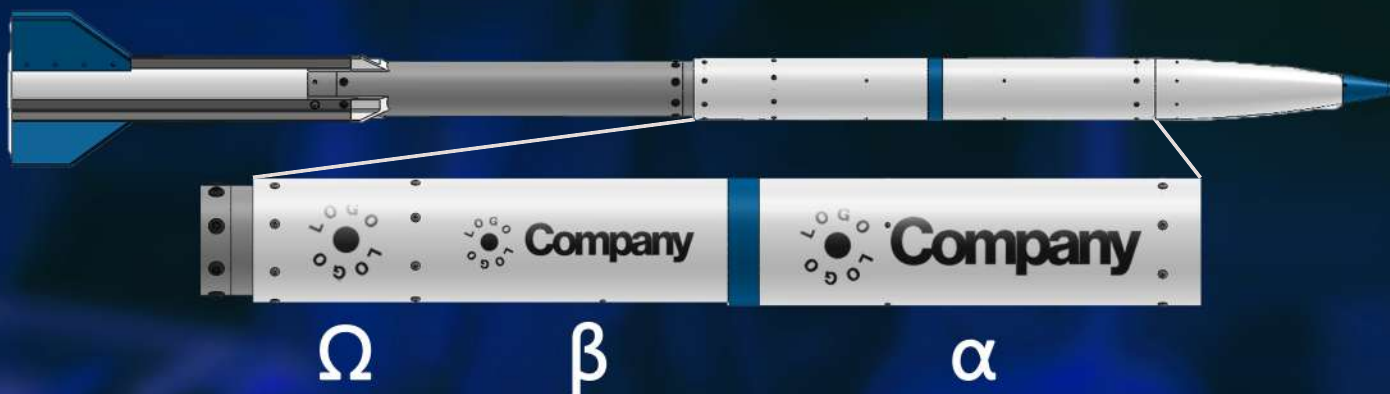
- Propulsion, fluids, thermal, and dynamic structural analysis
- Test Readiness Reviews (TRR), systems engineering, safety, and quality assurance
- Avionics design, testing procedures, and project management

JOIN US



Whether you join us as a operational contributor or a primary mission sponsor, your partnership directly fuels student innovation and hands-on aerospace engineering. We offer structured sponsorship tiers designed to provide meaningful visibility and direct involvement with our team throughout the 2026–2027 launch cycle.

	Epsilon Up to \$1,000	Omega Ω \$1,000 - \$3,500	Beta β \$3,500 - \$6,000	Alpha α \$6,000 and up
Social Media Exposure.	★	★	★	★
Access to Resume Book	★	★	★	★
Logo on technical posters, website, and presentations	★	★	★	★
Tier 1 Logo Placement		★	★	★
Tier 2 Logo Placement			★	★
Tier 3 Logo Placement				★



By partnering with Loxodon, you do more than support a rocket launch you **empower determined student engineers** to turn ambitious designs into reality. We invite you to join us on the road to **FAR-OUT**, where your support will propel our technology, our team, and our shared vision into the future. **Let's reach new heights together.**

CONTACT



We extend our sincere thanks to our current partners and sponsors for their continued support. Your investment in our team provides the essential resources, materials, and guidance required to advance our engineering projects and prepare our members for careers in aerospace.

We value your commitment to our mission and look forward to building on our shared progress.



Captain / Chief Engineer
Rafael Y. Rivera Vargas
Email: rafael.rivera49@upr.edu
Phone number: 787 531 3456

Co-Captain / Project Manager
Yanelis Alvarado Torres
Email: yanelis.alvarado@upr.edu
Phone number: 787 519 5015

Email: loxodon1.admissions@gmail.com
Linkedin: Loxodon-1
Instagram: [loxodon.uprm](https://www.instagram.com/loxodon.uprm)
Facebook: Loxodon-1
Website: <https://loxodonuprm.com>

Thank you for helping us reach new heights and driving our success forward.