Amira Malik

amiramalik.com ◆ amiramalik33@gmail.com

I like pictures and anecdotes. Here are a few teams I led:

REGENT

May 2023 – Jan 2026

In 10 months, we made a system with 60+ sensors that reports 5000+ parameters at ~20 Hz between multiple vehicles

Responsible Engineer

- **Built a system *while* requirements were developed**
- Managing schedule, tasking, and delivery milestones
- Maintained knowledge transfer in an evolving team
- **Wrote and led embedded system efforts**:
  - Software for analog, serial, fiber sensors
- **Built and handed over telemetry efforts**:
  - Automated post-test data pipeline: hard drives → on-site database → web-based visualizer
  - Managed contract with SaaS provider
- **Designed, built, and handed off system wiring**

Beta Technologies

June 2020 – Sep 2021

In 12 months, we made 10+ subscale eVTOLs from scratch

UAV Project Manager

- **Directly managed a team of 5+** mechanical engineers, including reviews and "transferring people off the team"
- **Managed a contract manufacturer** that created composite molds from our design
- **Designed & manufactured 100+ unique parts for a fleet of 10' 55lb eVTOLs**
- **Managed fleet** delivery, integration, and maintenance
- Published the CAD, BOM, assembly, and maintenance manuals: **the fleet is still flying!**

Flight Test Lead

- **>200 eVTOL transitions in 450 days**
- **Autopilot integration**, control laws, performance, etc.

MIT – Drone Competition Team

Dec 2017 – May 2020

top 10 out of 100+ teams, 3 years in a row

MIT – Solar Seaplane

Sep 2022 – May 2023

In 7 months, we designed and built a solar-powered seaplane

Chief Engineer

- Had to **resource engineers efficiently** to balance team needs & what people wanted to learn
- **Led 20+ engineers** who had diverse backgrounds and needed individualized inspiration
- **Mentored and led <u>all</u> aircraft design and build efforts**

Performance Lead

- Designed the configuration and modeled the performance of solar electric seaplanes with scratch-built simulation and multi-dimensional optimization tools

UAV Test Pilot

REGENT Craft, *operated a 400 lb 10' span WIG* — *May 2023 – Jan 2026*

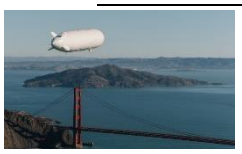
MIT, *flew for various labs researching autonomy, swarming, and payload delivery* — *Sep 2021 – Apr 2023*

Beta Technologies, *flew various subscale eVTOL flights* — *June 2020 – Sep 2021*

EDUCATION

MIT *BS, Aerospace Engineering* ***2017-2023***
Spent 2020-2021 as a full-time project manager
National Test Pilot School *Operation / Test Management* ***2026***

Manned Flight Test



Lighter Than Air, *Largest Aircraft in the World* ***Feb 2026 – Now***

- Developing a system manual for a company with significant turnover in the past 10 years
- Creating a training pipeline for 6+ airship pilots to become test pilots

REGENT, *Manned Wing-in-Ground Effect* ***May 2023 – Jan 2026***

- "Right Size" Process Development
  - "Right Size Processes" meaning **"go as fast as possible without compromising human safety"**
  - Test Plan Working Groups, Vehicle Limits, Readiness Reviews, T-Minus, Go/No-Go's, Test/Ops Hazard Analysis, Safety Review, Emergency Response, System Safety, Configuration Control
- Test & Procedure Planning
  - **Requirements-based objectives, with or without requirements**
  - **Defined *and enforced*** roles, areas, "playbooks", ground support, checklists, cards, etc…
- Test Director
  - Ran events of the Aircraft, 2 Chase Boats, & Control Room
  - **Encountered multiple Terminates, KIOs, & emergency responses** – ask me about them over drinks!
- Training Officer
  - Trained & managed pool of 3 test conductors & 20+ control room engineers
  - **Ran training**, rehearsals, and simulator events with 4+ test pilots
- Responsible Engineer
  - **Prioritize schedule, vehicle readiness, available assets, and program risk**
  - Internal reporting (ran reviews, briefs/debriefs, & deliverables)
  - **External reporting** (for certification, commercial, defense & media teams)

REGENT, *Instrumented R44* ***Sep 2023 – Apr 2024***

- Evaluated altitude sensors over water and <50', >90 kts, and <30° roll
- **Survived helicopter crash** - NTSB #ERA24LA171 – happy to talk about it!

Xwing, *Autonomous Cessna Caravan* ***May 2022 – Sep 2022***

- Test Director for *creating* an STC for asymmetric wing pods; worked with DERs
- I was on a plane that took off, flew to an airport, landed, and taxied **fully autonomously**

Aurora Flight Sciences, *Optionally Piloted DA42* ***Dec 2021 – Feb 2022***

- Control room FTE & turned flight test data into a spec sheet for custom-built actuators

I can teach a class on…

- **Simulation:** Finite Element, Trajectory Modeling, CFD (Panel Method, RANS)
- **Numerical Analysis:** Optimization, Sensitivity, Response Surface, Gradient Descent
- **Composites:** Laminate Theory, Shells/Plates, 3D Parametric Surface Modeling, Continuity
- **Fabrication:** CNC Manufacturing & Processing, DFM / DFA / DFSC
- **Software:** MATLAB, Python, Simulink, SolidWorks / Onshape, Bash / Shell, Nominal, IADS

Hobbies :)