Competition Requirements
- **Folding Design**
  - Entire design must fold and stow in a tube.
- **Four Missions**
  - Ground Test – The whole system, in stowed condition, must survive a drop onto concrete.
  - Demonstration Flight – Short flight to verify capabilities.
  - Speed Mission – Complete 3 laps with a payload of 3 pucks as fast as possible.
  - Endurance Mission – Fly as many laps as possible in 5 minutes with 3 or more pucks.

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Wing Design
- **NACA6409 Airfoil** – High camber, low-Reynolds number airfoil for high lift at low speeds.
- Carbon Fiber Spars – Strong and lightweight in order to carry large vertical loads.
- Foam Core – Light weight and allows for easy manufacturing of wing shape.
- Fiber Glass Wrapping – Provides additional strength and greatly increases the durability of wings against impacts encountered during landing.

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Wing Configuration
- **Tandem Wings** – Allow for more wing area to be folded into a smaller tube and for the center of gravity to be placed closer to the middle of the fuselage.
- **Outboard Vertical Stabilizers** – Provide necessary roll and yaw stability and can easily be stowed out of the way.
- **Vertical Offset of Wings** – Reduces down wash on rear wing and increases stability.

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Fuselage Design
- **Shape** – Occupies minimal space and allows for efficient packing of payload.
- Carbon and Glass Fiber – Provide necessary strength for flight loads and durability for belly landing.

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Hinge Design
- Delrin Plastic – Moderate strength, high stiffness, and low friction while still being easy to machine.
- Self Locking – Competition rules require hinges to self lock after wings are unfolded.

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Folding Design
- **Form Factor** – Compact folding allows for efficient use of tube volume and keeps components secure during ground test.

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Team Structure
- **Aero Team** – Analysis of competition scoring, aircraft performance, aerodynamic design, and flight testing.
- **Structures Team** – Structural and mechanical design of aircraft system and components and manufacturing of test and competition planes.
- **Propulsion and Tube Team** – Motor, battery, and propeller sizing and selection; electronics; structural design and manufacturing of tube.