

Micro Aerial Vehicle Team

(09123)

Project Objective

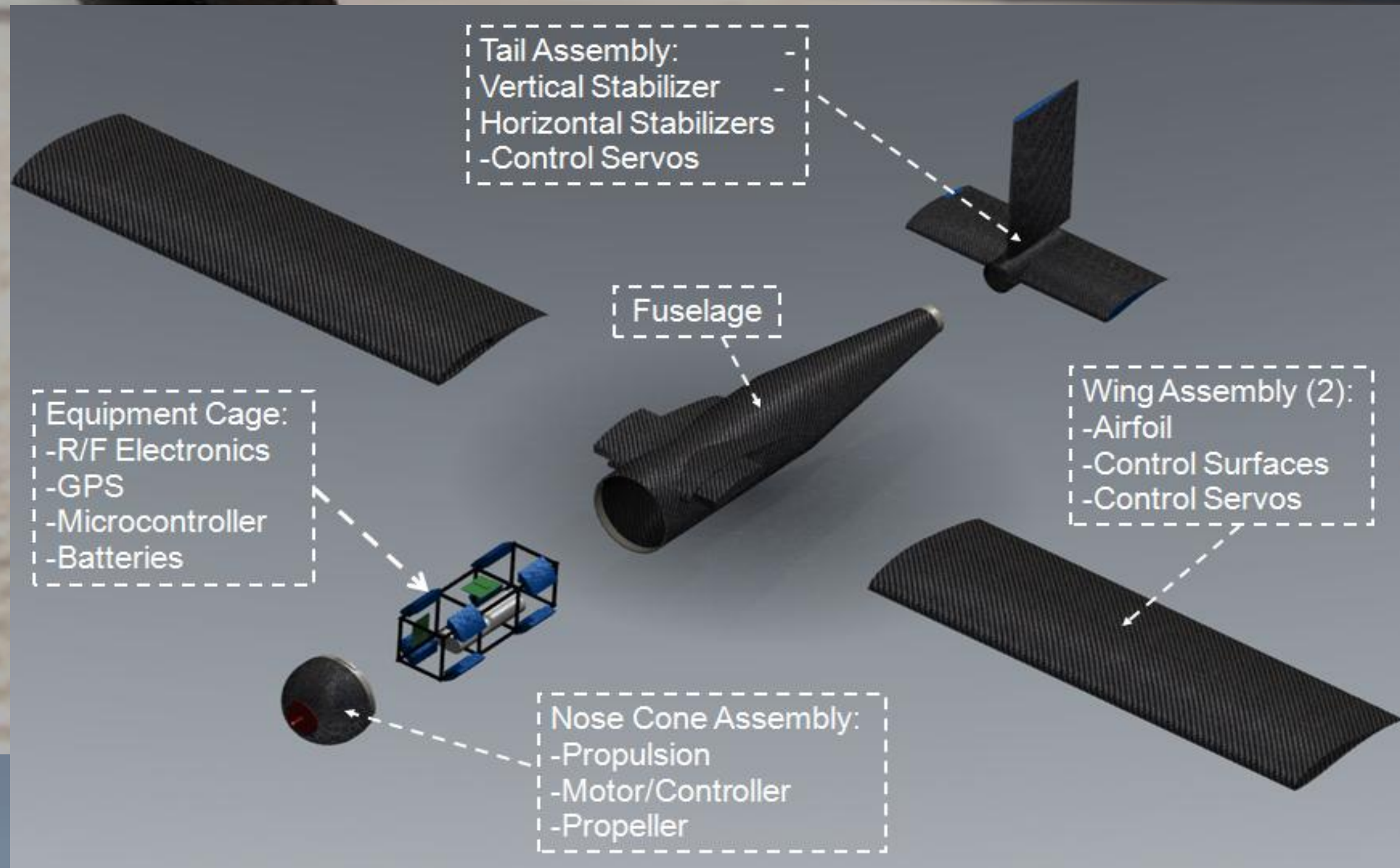
To build a semi-autonomous and have exposure to a hands-on aeronautical project, tending towards full autonomy, air vehicle that will be used in the future for Multidisciplinary Senior Design for undergraduate and graduate studies in the college of engineering and the college of imaging science. Lastly, to provide an incentive for students as well as exposure of engineering at RIT by competing in the more aggressive United States/Europe MAV competition



Customer Needs

Priority	Needs
1	Stable Platform For Future Development
2	Weigh less than 1.5 Kg and have 80 cm lateral dimension.
3	Cost effective and easy to manufacture
4	Hands-on Project For Undergraduates and graduates.
5	Integration Of Control devices and hardware
6	Made from light weight readily available material.

MAV Layout



Assumptions And Constraints

- Adaptability
- Manufacturability
- Capable of Sustained Flight
- Must Survive a Crash Without Damage to Electronics
- Time: 11 weeks
- Cost:
 - All funding must be external
 - Project must be self sustainable

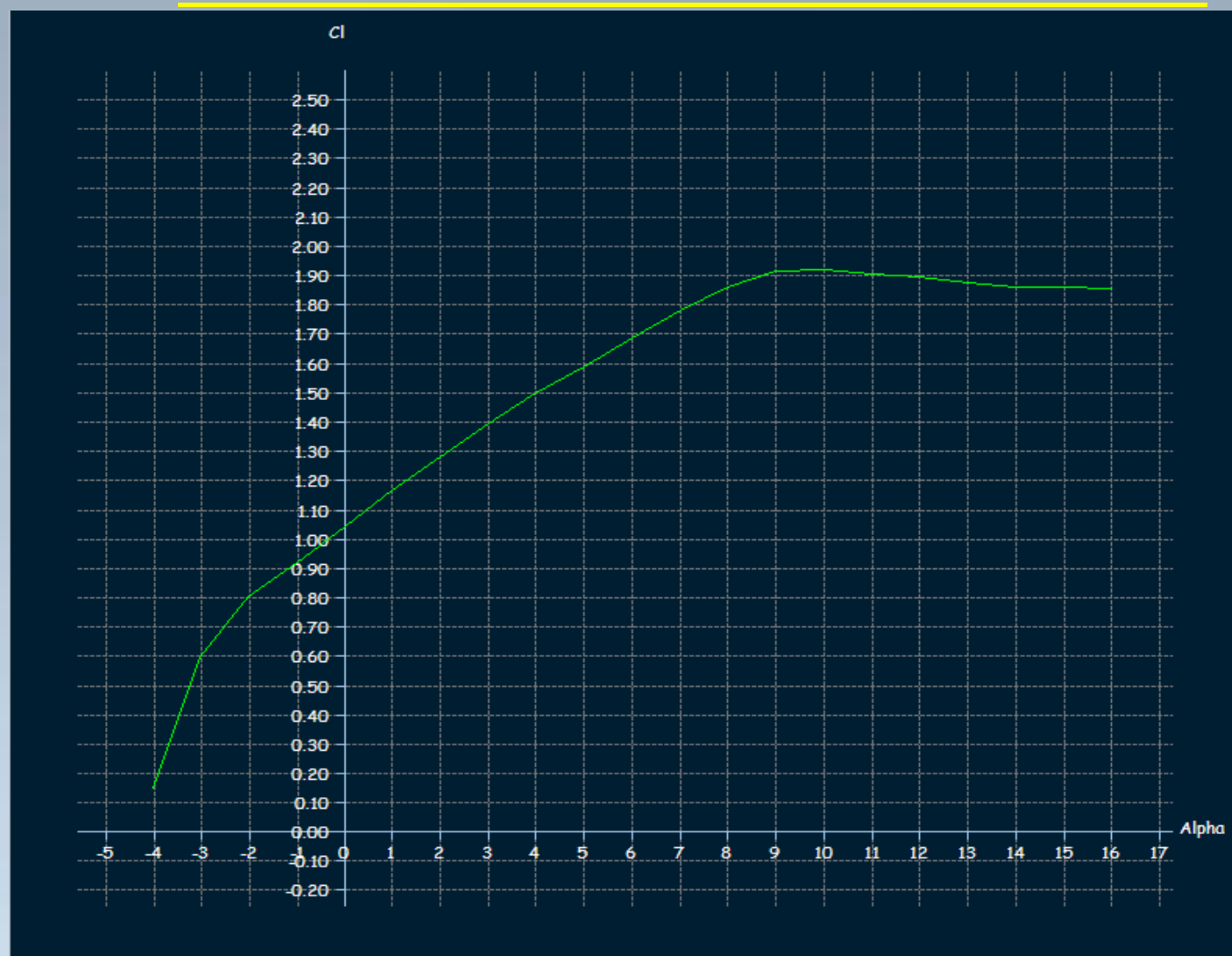
Results

- Cruise Speed: 25MPH
- Thrust: 1.53 kg
- Weight: 1.5 Kg
- Thrust to weight ratio: 1.39
- 11700 Rpm
- Flight Time: 10 minutes

Design Features

- Nose Cone:**
 - Removable Nose Cone.
 - Heat Ventilation
- Fuselage:**
 - Detachable
 - Light weight
 - Durable
- Equipment Cage:**
 - Removable
 - High impact resistant
 - Adaptable various CG
- Wings:**
 - Detachable
 - Light weight
- Vertical Stabilizers:**
 - Light Weight
 - Detachable
- Horizontal Stabilizers:**
 - Light Weight
 - Detachable

Xfoil Cl vs. AoA for S1210



Actual Model



Parts Feature

- 3 Cell 2100 mAh 11.1V LiPoly Pack
- Hacker A30-10L (500Watt Motor)
- 6g Super Sub-Micro S60 servo
- Thunder Power 30A
- Brushless Motor Speed Controller
- APC 10x5e Composite Propeller
- Corona Dual Conversion Receiver

Sponsored By:



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(Faculty Advisor)
Dr. Hany Ghoneim
Mr. Rob Kraynik
Mr. Steve Kosciol

Mr. Dave L Hathaway
Aero Club
Impact Technologies
Brinkman Lab

Group Members:

Joe Hozdic (Project Manager) Aaron Nash (Chief Engineer) Brian David (Propulsion Expert) Sylvan Hemingway (Aerodynamics Engineer)
Corey Kulcu – Roca (Materials Engineer) Ming Chow (Manufacturing Engineer)

