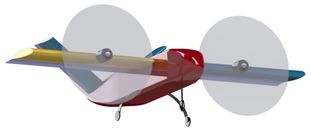
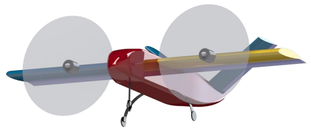
Cessna Aircraft Company
Raytheon Missile Systems
AIAA Foundation



AIAA Design/Build/Fly



Faculty Adviser: Professor Robert H. Liebeck
Advisers: Colin Sledge, Nathan Yeung, Marlon Sevilla, Paul Parcell

UCI Samueli School of Engineering

What is Design/Build/Fly?

AIAA Design/Build/Fly is an annual international remote-controlled aircraft competition that allows teams to apply their analytical skills and showcase their cooperative efforts in building real-world aircrafts. Students must design, manufacture, and demonstrate the flight capabilities of an aircraft that can perform in a series of different flight scenarios.

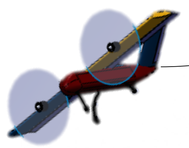
Goals and Objectives

- Design an aircraft based on the given rules and constraints
- Develop and apply innovative, practical, and affordable fabrication techniques
- Document and compile design, manufacturing, and testing process into industry-standard written report

Requirements and Constraints

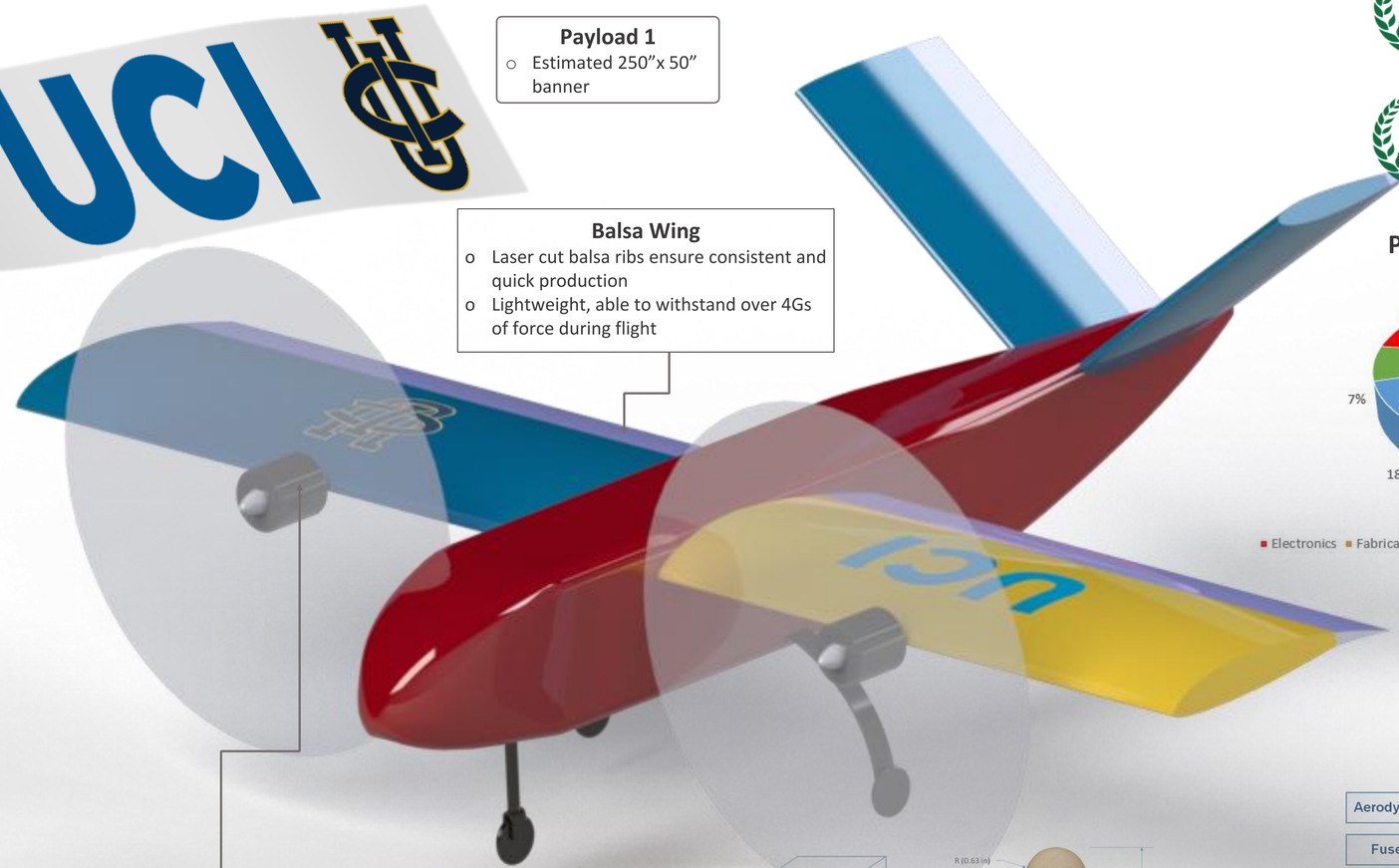
- Must have a maximum wingspan of 5 feet
- Takeoff within a 20 ft for 2 of the missions
- Total battery capacity of 200 watt-hours
- Banner must have a maximum aspect ratio of 5

2012 2nd Place
2013 1st Place
2014 2nd Place
2015 2nd Place
2016 3rd Place
2018 7th Place
2019 10th Place

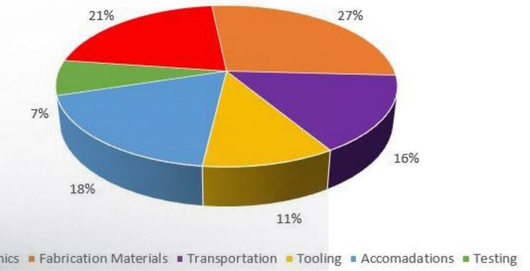


Payload 1
- Estimated 250”x 50” banner

Balsa Wing
- Laser cut balsa ribs ensure consistent and quick production
- Lightweight, able to withstand over 4Gs of force during flight



Project Costs & Expenditures



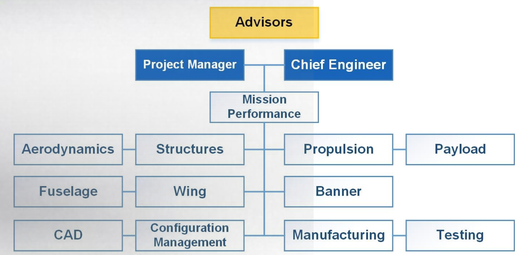
Grand Total: $7100

Competition Mission Objectives

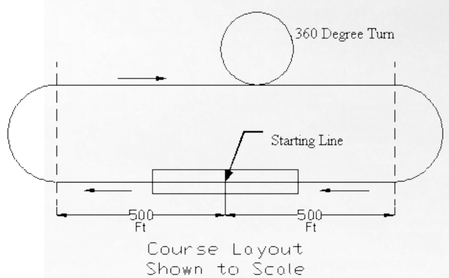
Ground Mission	Mission 1
Load passengers, luggage, and banner into the plane as fast as possible.	Fly 3 laps with no payload within 5 minutes.

Mission 2	Mission 3
Fly 3 laps as fast as possible while carrying passengers and their luggage within 5 minutes.	Complete as many laps with the banner deployed within 10 minutes as possible.

Team Structure

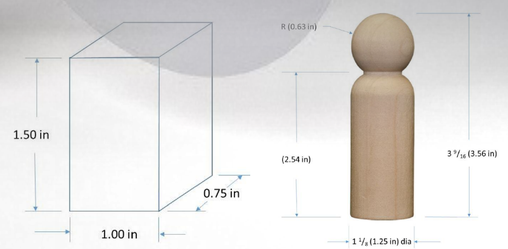


Flight Course



Motor Mount
- 3D printed mold for easy part release post-curing
- Lightweight, carbon fiber based motor mount
- Able to withstand vibrations and forces from propulsion

Payload 2
- Passenger & Luggage



Timeline

October 31, 2019 Submit Proposal → February 21, 2020 Submit Design Report → April 16-19, 2020 Contest Fly-Off

Team Members

James Bechler	Melonti Emmanouilidi	Dan Midani	Suleyman Varlibas
Andrew Reuter	Maxfield Floyd	William Mrdjenovich	
Elvis Banuelos	Ethan Kropp	Jason Ngo	
Kendrick Barefield	Robert Laviguer	Anthony Saikali	
Kelsey Cruz	Zion Lee	Grant Tsuji	

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