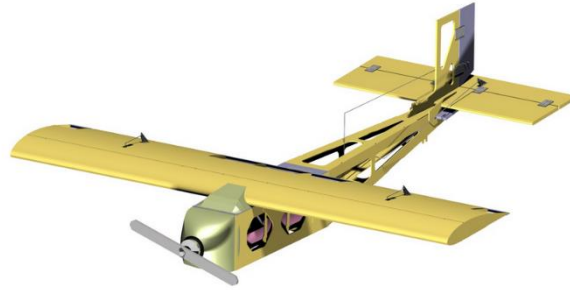


R_{apid} A_{ssembly} C_{limb} C_{ruise} E_{jection} T_{ouchdown}



Low Hock Chin (Aerodynamics), Ian Buhman-Wiggs (Structures), Ian McMurtry (Propulsion), Danial Salmaan Hussain (Stability and Control)

Mission

The RACCET is a purpose built aircraft, designed for the Bronze Propeller competition. After being assembled from its storage box, it will fly 5 laps and autonomously drop a payload in the target zone.

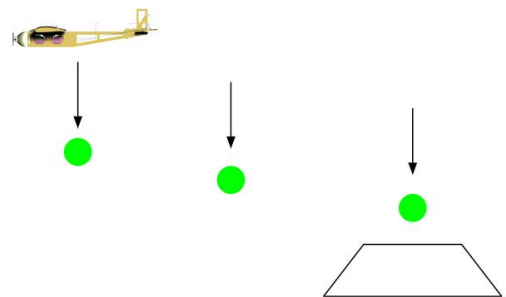
Optimal Design

Every aspect of the RACCET is tuned to maximize the plane's performance. The structure is light and strong, with extra reinforcements to allow the plane to fly again and again. The plane is sleek and aerodynamic to keep lap times down and scores high.

Objective Focused

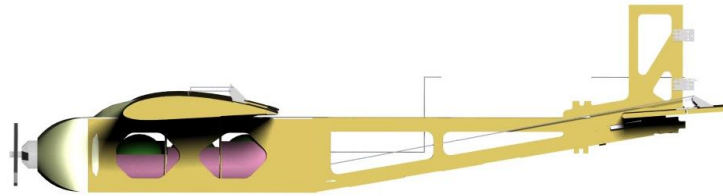
The Bronze Propeller competition scoring system rewards both speed and accuracy. Fast planes can score high, but they must put at least one ball on target in order to count any given run. This is where VECTR's unique approach comes in – our combination of statistical modeling and a staggered release system.

The concept is simple: by spreading the payload over a large area, it becomes almost impossible to miss the target zone. Combining this reliability with RACCET's speed and agility means steady progress to the top of the leaderboard.



Like a Leaf on the Wind

The RACCET is a slim aircraft, with wings and fuselage shaped tightly around the payload. The wing is a robust NACA 4415 and the tail sections are flat plates for low-drag performance and cost-effective manufacture. The RACCET is stable but nimble, with well-balanced static and dynamic handling characteristics.

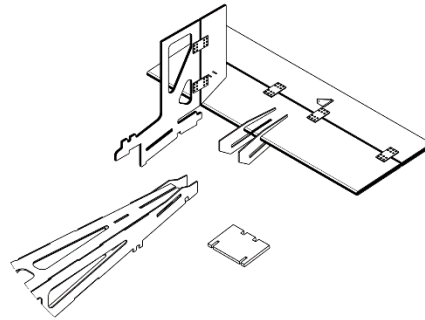


Our team used a combination of basic mathematics, engineering calculations, and advanced computer models to ensure RACCET's performance is second to none.

Running Hot and Built to Last

The RACCET has brushless motor powered by an 11-volt battery, bringing the needed thrust without an ounce of excess weight. The APC Sport propeller is the perfect fit for cruise but has more than enough power for a hand launch. This level of engine performance requires a solid structure.

Redundant load paths, fatigue tolerant design, and precision cut pieces hold RACCET together through high-g turns and violent winds. Fail-safe joints enable rapid assembly out of the box and ensure the airframe stays together for flight after flight.



The Team

We are senior Aerospace Engineering students here at Wichita State University, with years of widely varied industry experience between us. Feel free to contact us with any questions!

Low Hock Chin	Aerodynamics	hockchinlow@gmail.com
Ian Buhman-Wiggs	Structures, Payload	ianbuhman@gmail.com
Ian McMurtry	Propulsion	ian@airlinegeeks.com
Danial Salmaan Hussain	Stability and Control	dsalmaanhusain@gmail.com