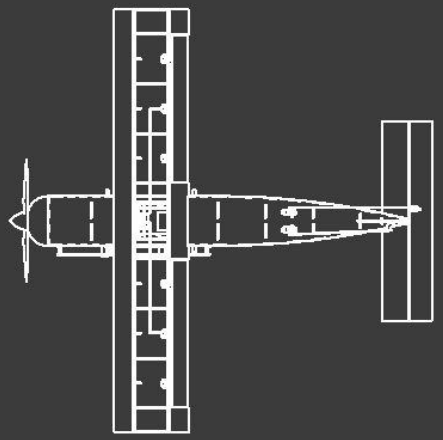
Specifications



Wingspan: 34 in

Length: 32 in

Height: 9.55 in

Empty Weight: 1.42 lb

Maximum Weight: 2.07 lb

Wing Loading: 1.46 lb/sqft

Wing Airfoil: NACA 4412

Battery: 1,300 mAh

Motor Power: 277 Watts

Stall Speed: 36 ft/s

Cruise Speed: 89 ft/s

Range: 156 seconds @ max power

Team Members

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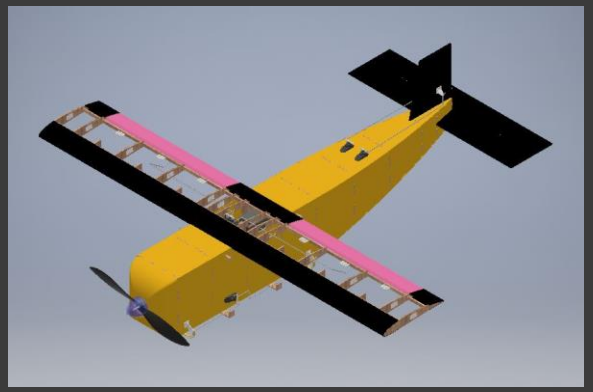


SKY SHOCKERS

"Sky High Dreams"

Wichita State University
AE 528/628 Senior
Design Project

The Bronze Propeller Competition

"A Storable Semi-Autonomous Emergency Supply Aircraft"

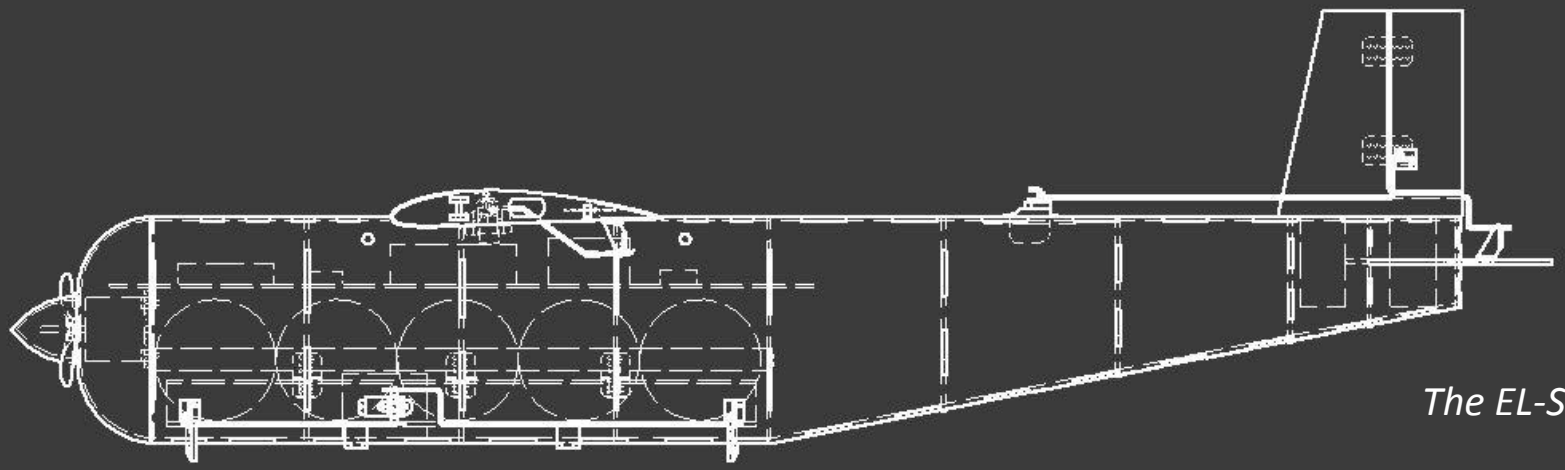
- Mission is to drop a tennis ball payload within a 20x20 ft target zone
- To start, aircraft is taken out of storage box, assembled, and hand launched
- Flight consists of 5 laps around a 400x100 ft area with the payload drop after the 2nd lap
- Aircraft lands and a score is awarded based on performance

Airplane Design

- Constructed out of bass and balsa wood with interlocking parts
- Bottom center is flat which permits belly landings
- Removable wing, vertical tail, and horizontal tail for storage and easy access to internal components
- Motor and propeller designed to fall off in the event of a rough landing
- Wing held in place with rubber bands running through dowels
- Lightweight design which allows for improved performance

Payload Drop System

- Bottom center of aircraft has an exposed opening
- Large opening permits up to 5 tennis balls to increase score chances
- A wood panel holds the tennis balls in place by rubber band tension
- Autonomous system uses a pre-programmed Arduino System with a GPS to release payload over target zone
- A servo releases rubber bands when Arduino activates
- Can be reloaded for additional missions



The EL-Simpleton