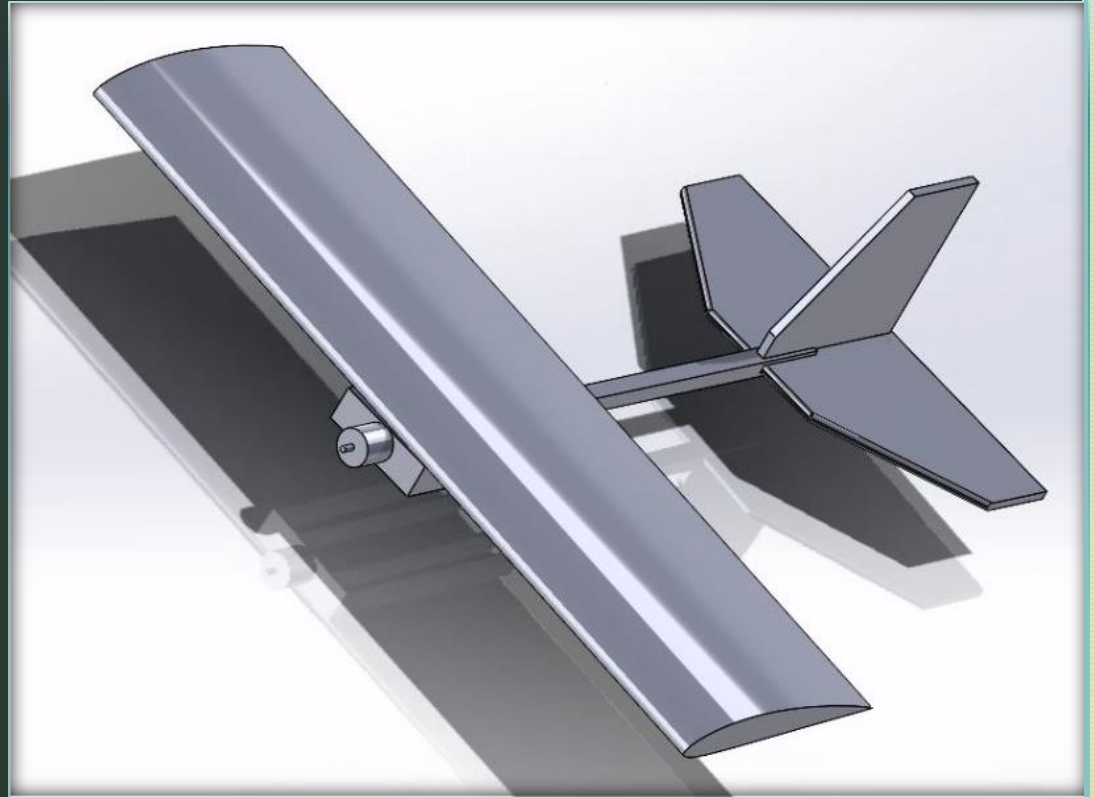
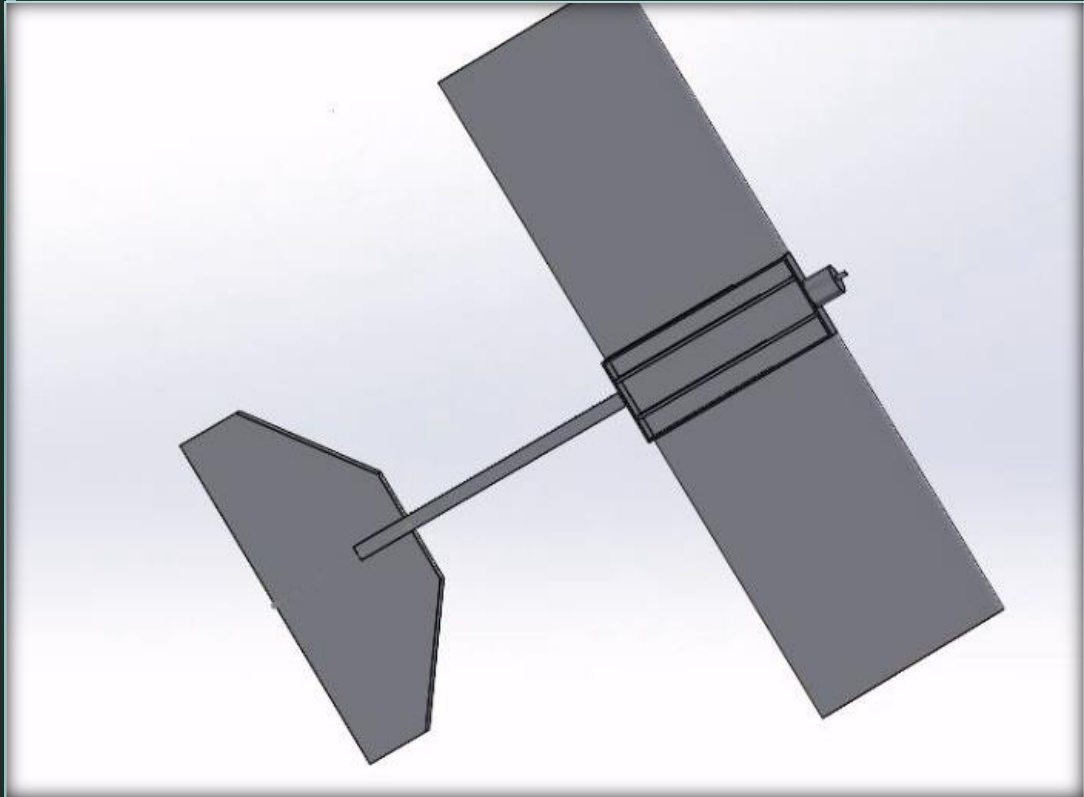


By: Jared Laakso, Melissa
Parsons, Junjie Shi

SAE Aero micro 2/3 build





CAD

Iterations

Previous

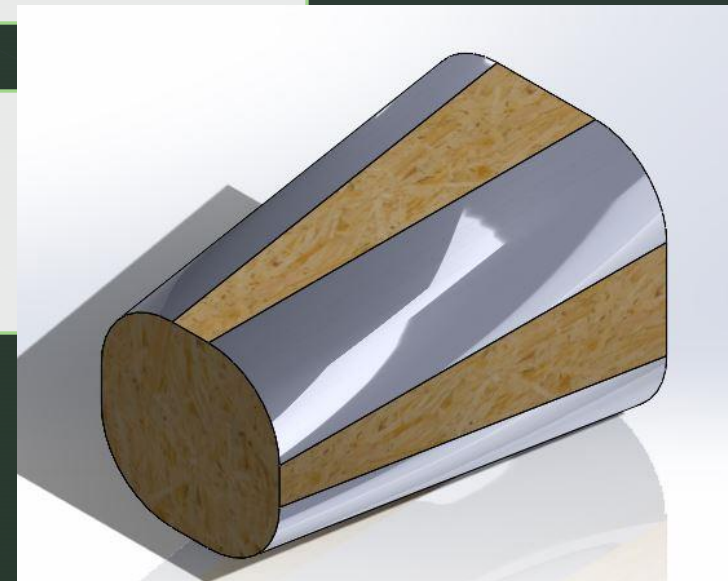
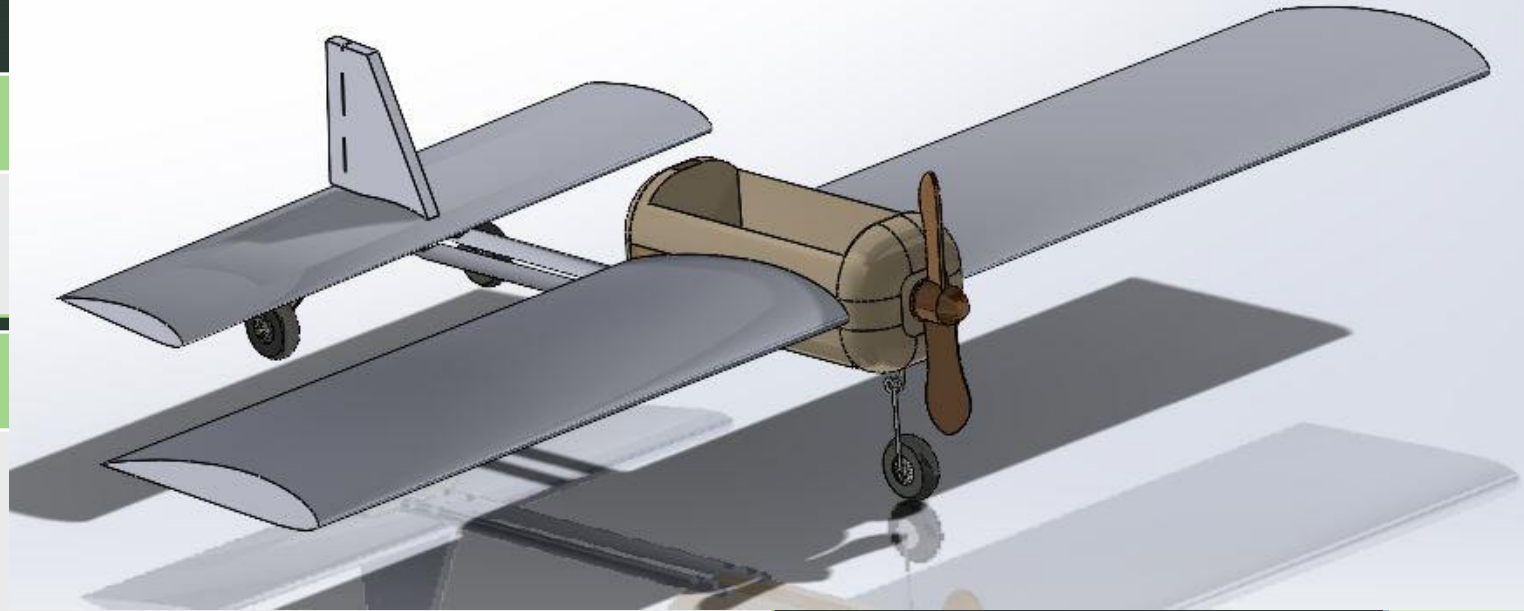
- Smaller fuselage
- Larger wings

Current

- Different Connection rod
- Thinner tail
- Different tail design
- Landing gear

Future

- Connection Rod
- Motor cap
- Rear landing gear



Purchasing Plan

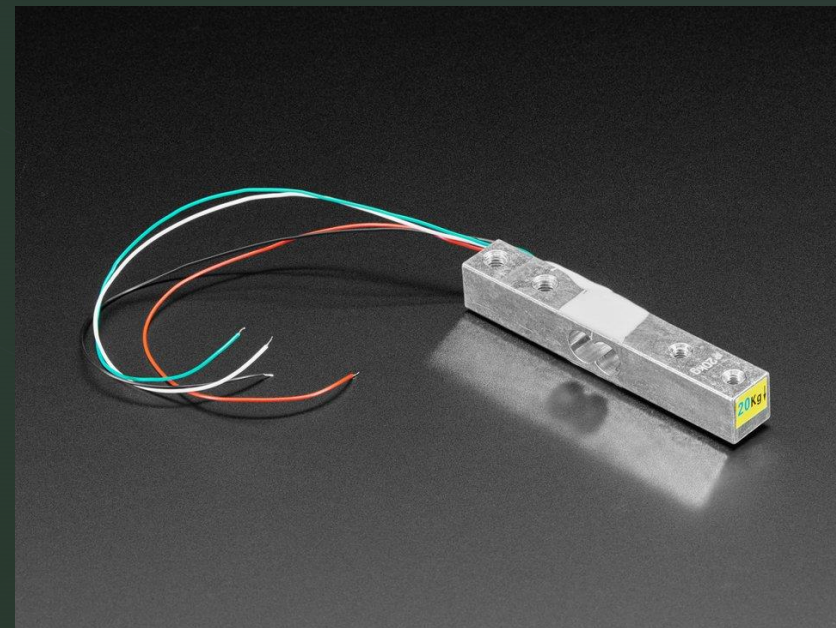
Part Number	Part Name	Subsystem	Detail	Quantity	Price (\$)	Part Status
1	Avian 4250-800kv Motor	Electronics	Main motor	1	89.99	Purchased ready for assembly
2	Aileron A4040 Servos	Electronics	Main Servos	4	54.99	Purchased ready for assembly
3	Lithium Pilymer Battery	Electronics	Main Battery	1	49.99	Purchased ready for assembly
4	RC Transmitter and reciever	Electronics	Controller	1	279.99	Purchased ready for assembly
5	3mm Depron Foam	Structure/Fuselage	Outer Structure (15.4"x24.4")	1	39.95	Purchased ready for assembly
6	ESC	Electronics	Electronic Speed Controller	1	69.99	Purchased ready for assembly
7	Propeller	Propeller	Propeller	2	20.79	Purchased ready for assembly
8	Balsa Wood	Structure	1/16"x11.5"x11.5"	3	23.97	Purchased ready for assembly
9	Gorilla Hot Glue Gun	Adhesive	Adhesive for raw materials	1	16.99	Purchased ready for assembly
10	Gorilla Hot Glue Sticks	Adhesive	Adhesive for hot glue gun	1	8.99	Purchased ready for assembly
11	Packing Tape	Adhesive	Adhesive for raw materials	1	11.28	Purchased ready for assembly
12	Sand Paper 120 Grit 6 pack	N/A	Forming raw material	1	6.97	Purchased ready for assembly
13	Square Carbon Tube	Structure	10mmx10mmx1000mm	1	31.77	Purchased ready for assembly
14	Aluminum	Landing Gear	1"x36"x1/8"	1	N/A	Aquired through SEA Aero
15	Landing Gear	Landing Gear	Landing Gear	1	N/A	Aquired through SEA Aero
16	Plywood	Structure	1/4"x4ftx8ft	1	60.98	Purchased ready for assembly
17	Eva Foam	Landing Gear	10mmx24"x60"	1	36.23	Purchased ready for assembly
18	Loctite	Structure	Threadlocker blue	1	7.38	Purchased ready for assembly
19	6mm Depron Foam	Fuselage/Structure	800mmx600mm	1	59.34	Purchased ready for assembly
20	Bullet Adapter	Electronics	4mm female to 3.5mm male	1	11.58	Purchased ready for assembly
21	Saftey nut	Propeller	Propeller safety nut	1	6.99	Needs purchasing
					\$982.70	Total
					\$517.30	Remaining

Purchasing Plan: Testing and Miscellaneous

Part Number	Part Name	Subsystem	Detail	Quantity	Price (\$)	Part Status	Vendor
1	Anemometer Wind Speed Sensor	Testing	Wind Speed Sensor	1	44.95	Needs purchasing	Adafruit
2	arduino uno	Testing	for wind speed sensor	1	19.64	Needs purchasing	Amazon
3	male to male breadboard jumper cables	Testing	for wind speed sensor	1	14.4	Needs purchasing	Amazon
4	9V battery clip to arduino adapter	Testing	for wind speed sensor	1	6.54	Needs purchasing	Amazon
5	Strain Guage Load Cell 10kg	Testing	For generated lift	1	18.5	Needs purchasing	Adafruit
6	HX711 weighing sensor	Testing	For generated lift	1	7.09	Needs purchasing	Amazon
7	Servo Extension Wires	Electronics	For electronics	1	18.55	Needs purchasing	Amazon
8	Top Flight Monokote	Control Surfaces	For control surfaces	1	24.46	Needs purchasing	Amazon



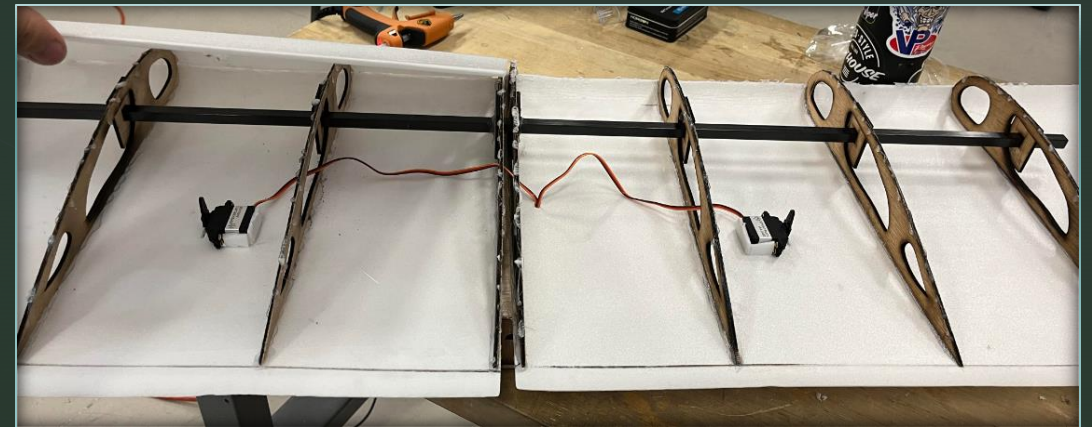
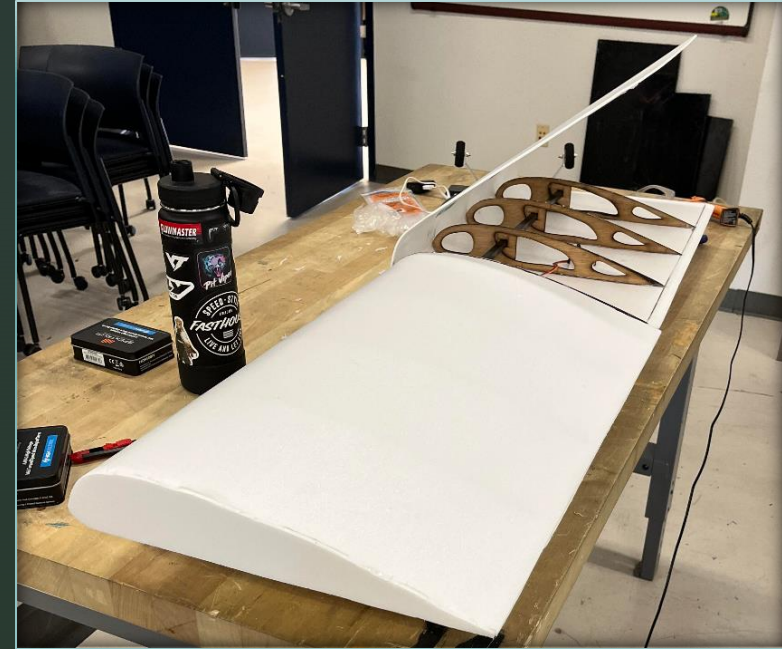
Anemometer



Load Cell

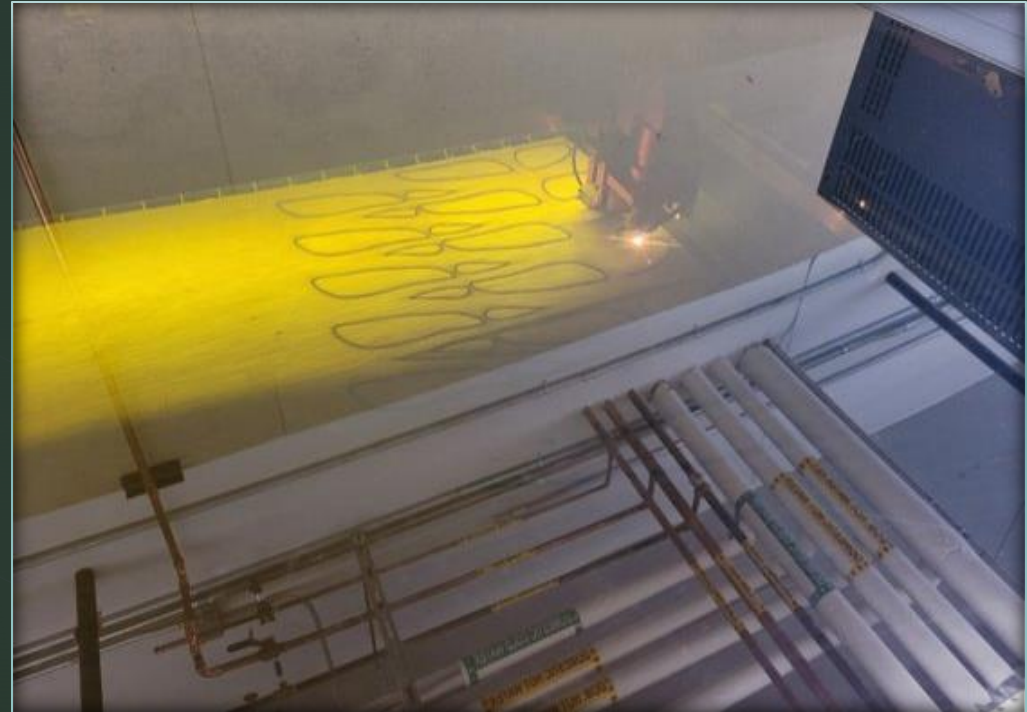
Manufacturing Plan

- Has been manufactured:
 - Wings
 - Ailerons
 - Fuselage
 - ½ Tail
 - Rear Fuselage
 - ½ Landing Gear



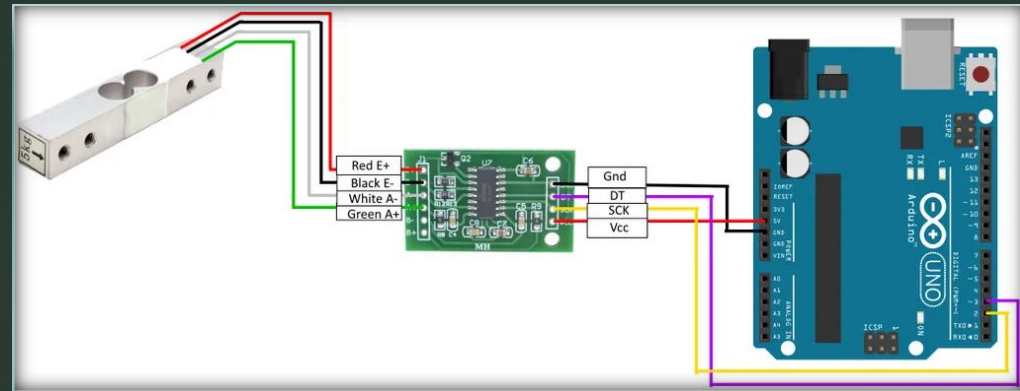
Manufacturing Plan

- Future Manufacturing: Completion on 10/30
 - Landing Gear
 - Tail
 - Motor Cover
 - Rear to main fuselage connection

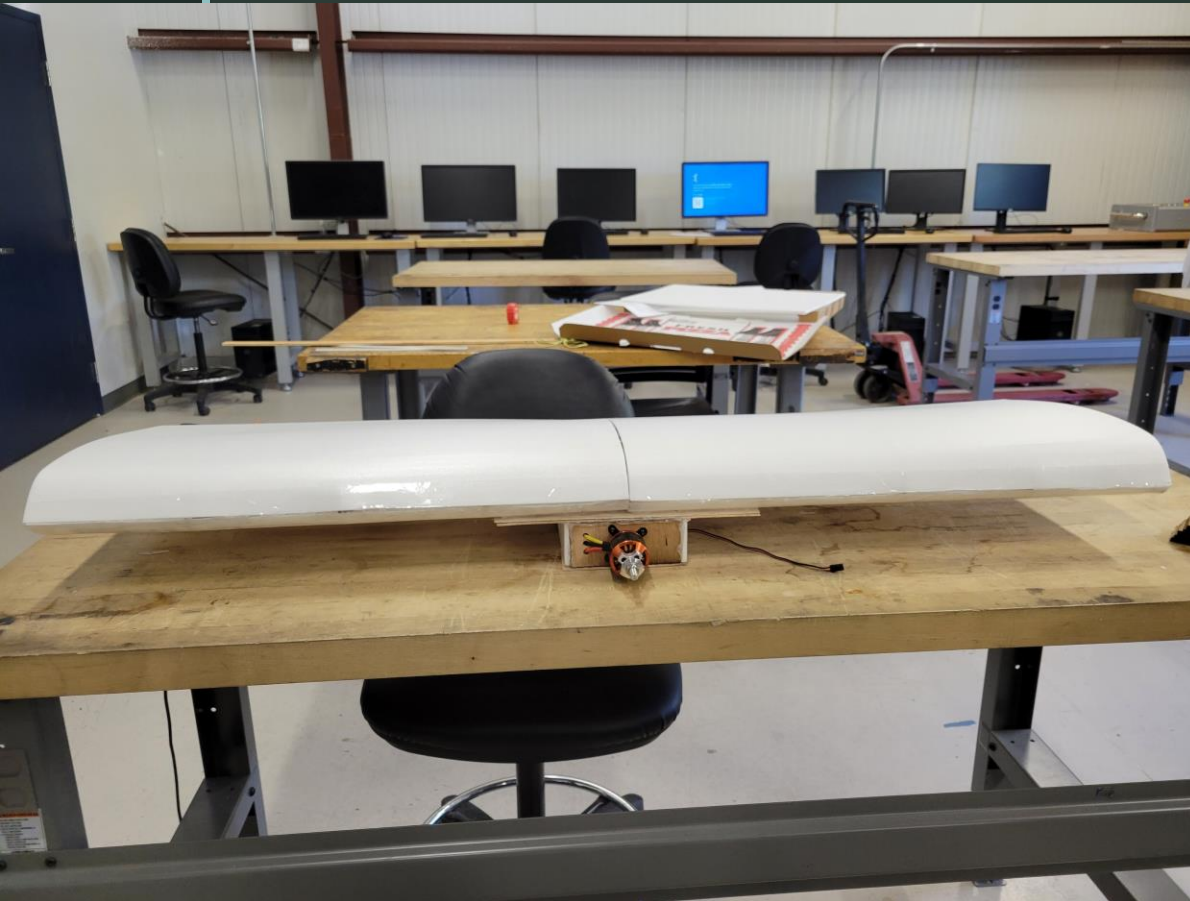


Future Testing

- Load Cell and anemometer setup with Arduino uno
- Use HX711 amplifier module for Arduino to read voltage difference
- Place on top of car and record wind speed and lift force
- Test flight



Roadblocks



- Reduce weight (Number of ribs, material choices)
- Structurally sound (Connection rod)
- Landing Gear (rear)
- Waiting on materials
- How to make the Ailerons (No idea)
- Motor cone
- Electrical Connections (Almost fried everything)
- Will it fly?? (power, thrust, lift)



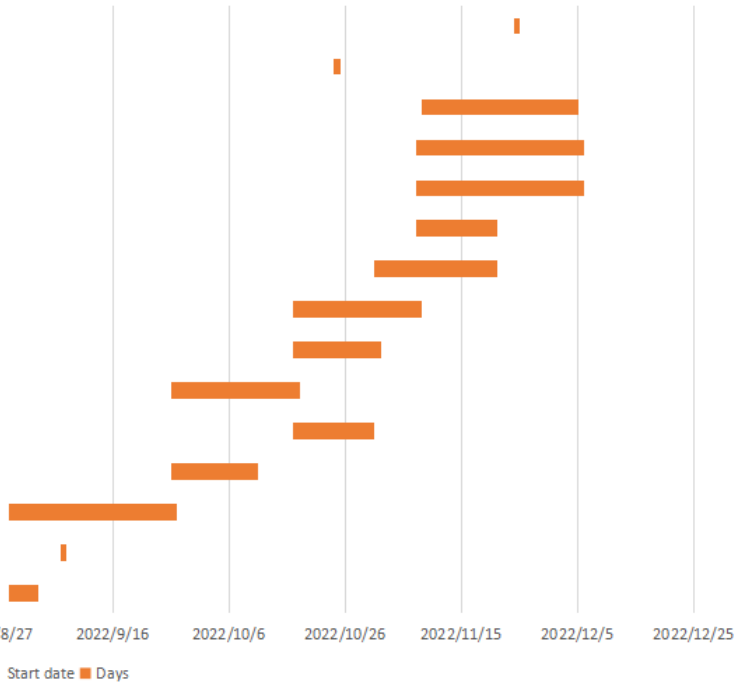
Demo



Gantt Chart

Schedule for Fall semester

Peel Eval 3	2022/11/24	1
Peel Eval 2	2022/10/24	1
Website Check 2	2022/11/8	27
Final Report	2022/11/7	29
Product demo& Testing Results	2022/11/7	29
Initial testing Results	2022/11/7	14
Final CAD Packet	2022/10/31	21
Hardware Status Update 100% build	2022/10/17	22
Finalized Testing Plan	2022/10/17	22
Hardware Status Update 67% build	2022/9/26	22
Start Testing plan	2022/10/17	14
Website check 1	2022/9/26	15
Hardware Status Update 33% build	2022/8/29	29
Final Materials Purchasing	2022/9/7	1
Project Management	2022/8/29	5



Future plans

- In the future, our work will focus on the following aspects:
- Manufacturing of the whole plane (Up to 100% Hardware status build)
- Determine the Testing plan
- Final CAD Packet
- Final Report and Final Website Check



End for now...

- Questions???