



SAE Aero Micro: Hardware Status Update #3

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Semester Progress To Date



Manufactured carbon fiber airfoil

Purchased new batteries

Designed and manufactured internal wing structure

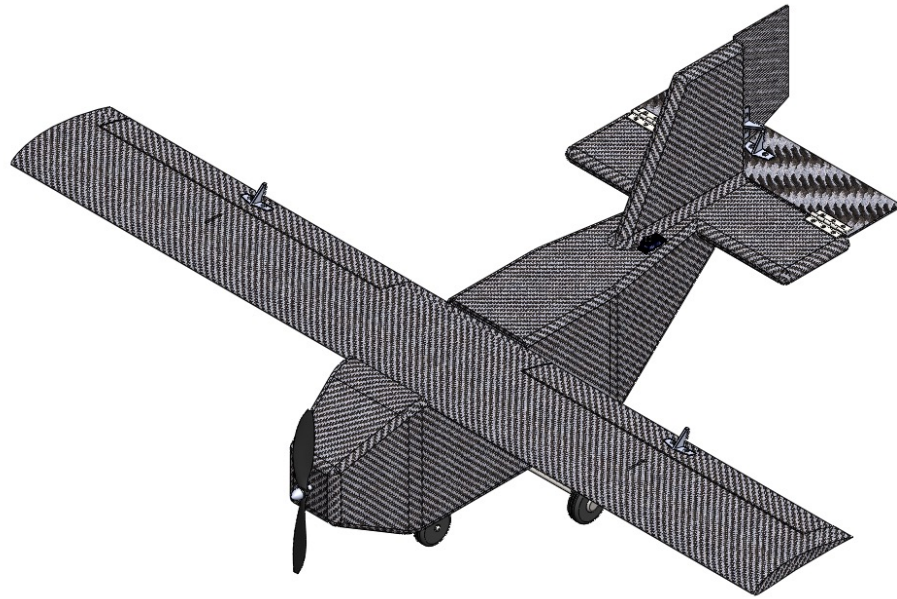
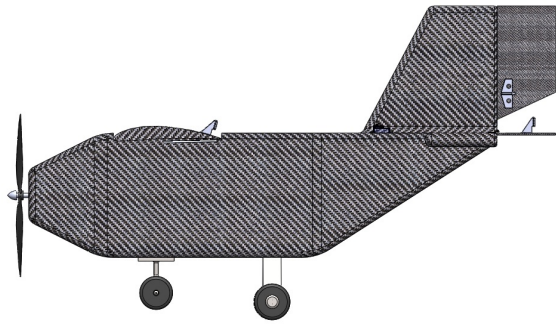
Iterated on previous fuselage design

Developed foam model of fuselage

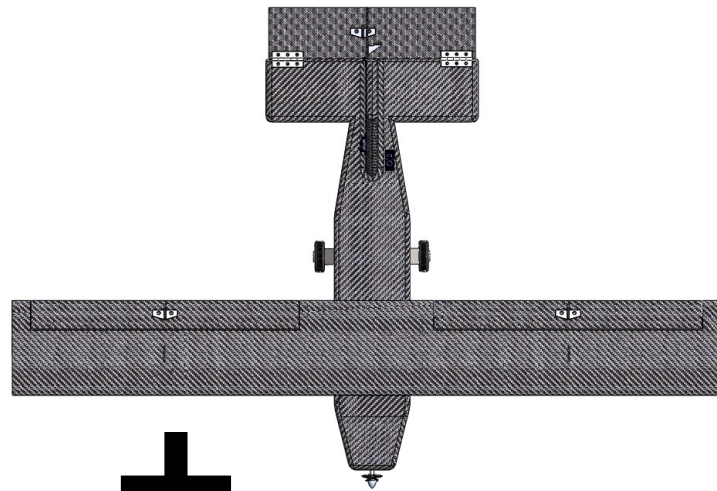
Completed manufacturing of carbon fiber fuselage

Finalized assembly of all manufactured and purchased parts



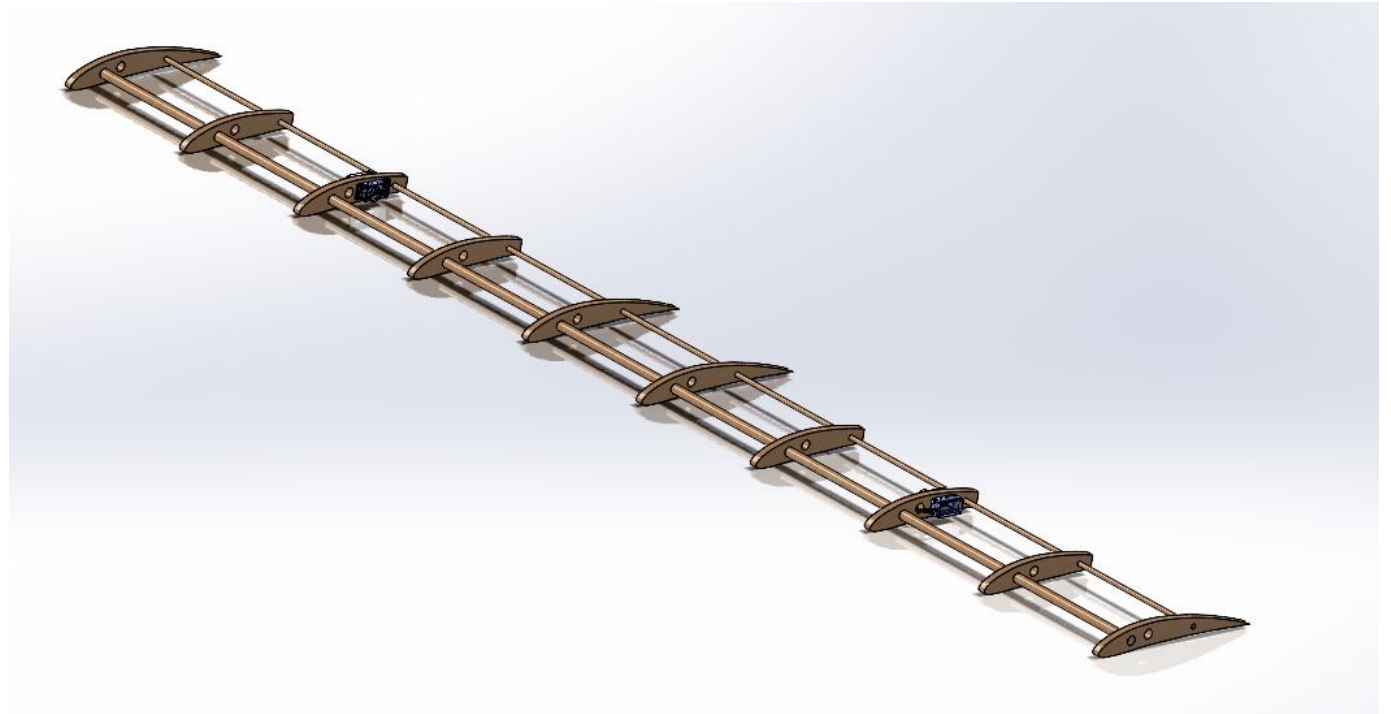


CAD



CAD
(cont.)

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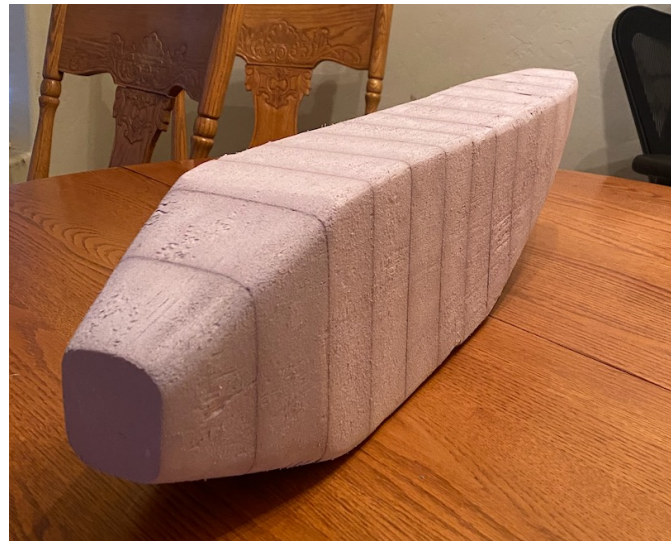


Manufacturing Update

- Manufactured:
 - Complete Wing (Top half/bottom half)
 - Internal structure of wing (balsa wood)
 - Fuselage
 - Ailerons
 - Rudder
 - Elevator
- Percentage of total manufacturing complete: 100%

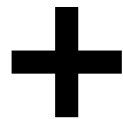


Fuselage Manufacturing Process – Foam Model

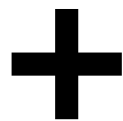


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Fuselage Manufacturing Process – Wet Layup



Fuselage Manufacturing Process – Patching



Fuselage Manufacturing Process – Final Fuselage



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Final Product

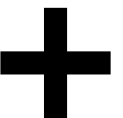


Demonstration



Purchasing

- Purchased:
 - 1500 mAh batteries (x6)
 - 9x4.5 Propellers (x12)
 - Motor (x2)
 - Balsa wood rods
 - Servo motors (x7)
 - ESC
 - Power Limiter
 - Balsa wood dowels
 - Servo control arms
- Percentage of purchasing complete:
100% (all on hand)



Bill of Materials (Purchase)

NOTE: Difference columns in table will show if actual went over estimated amounts. Red numbers show went over (negative) and black shows under numbers (positive).

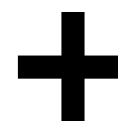
									Itemized Cost (\$)	
Area	Items	Primary Vendor	Manufacturer	Lead Time	Quantity	Make/Buy	Part Status	Price Per Part	Total Price	
Electronics	Adaptors	Amazon	Share Goo Store	N/A	1	Buy	Assembled	\$9.42	\$9.42	
Electronics	1000mAh Battery	Hobby King	Hobby King	N/A	3	Buy	Assembled	\$17.01	\$51.03	
Electronics	Connectors	Hobby King	Hobby King	N/A	1	Buy	Assembled	\$3.03	\$3.03	
Electronics	SAE Competition Power Limiter	SAE	SAE	N/A	1	Buy	Assembled	\$83.00	\$83.00	
Electronics	Servos	Hobby King	Hobby King	N/A	7	Buy	Assembled	\$3.49	\$24.43	
Electronics	Speed Controller	Hobby King	Hobby King	N/A	1	Buy	Assembled	\$21.99	\$21.99	
Electronics	Wires	Amazon	National Hardware Store	N/A	1	Buy	Assembled	\$9.89	\$9.89	
Electronics	1500mAh Battery	Hobby King	Hobby King	3 Weeks	6	Buy	Assembled	\$23.18	\$139.08	
Powerplant	9x4.7 V3 Propeller	ACP	ACP	3 Weeks	4	Buy	Assembled	\$2.84	\$11.36	
Powerplant	9x4.7 V3 Propeller	ACP	ACP	N/A	7	Buy	Assembled	\$2.84	\$19.88	
Tail	Elevator	N/A	N/A	1 Week	1	Buy	Assembled	N/A	N/A	
Tail	Rudder	N/A	N/A	1 Week	1	Buy	Assembled	N/A	N/A	
Wings	Contol Horn	MakersLab	MakersLab	N/A	2	Buy	Assembled	Donated	Donated	
Wings	Dowel Rods 1/8x12	Amazon	Woodpeckers	2 Weeks	1	Buy	Assembled	\$9.19	\$9.19	
Wings	Dowel Rods 1/4x12	Amazon	Woodpeckers	2 Weeks	1	Buy	Assembled	\$8.19	\$8.19	
Tail	Hinge	Walmart	Bulldog Hardware	1 Day	3	Buy	Assembled	Donated	Donated	
Subtotal									\$194.07	\$390.49
Unexpected Costs (add 5% estimated)									\$9.70	\$19.52
Total costs									\$203.77	\$410.01



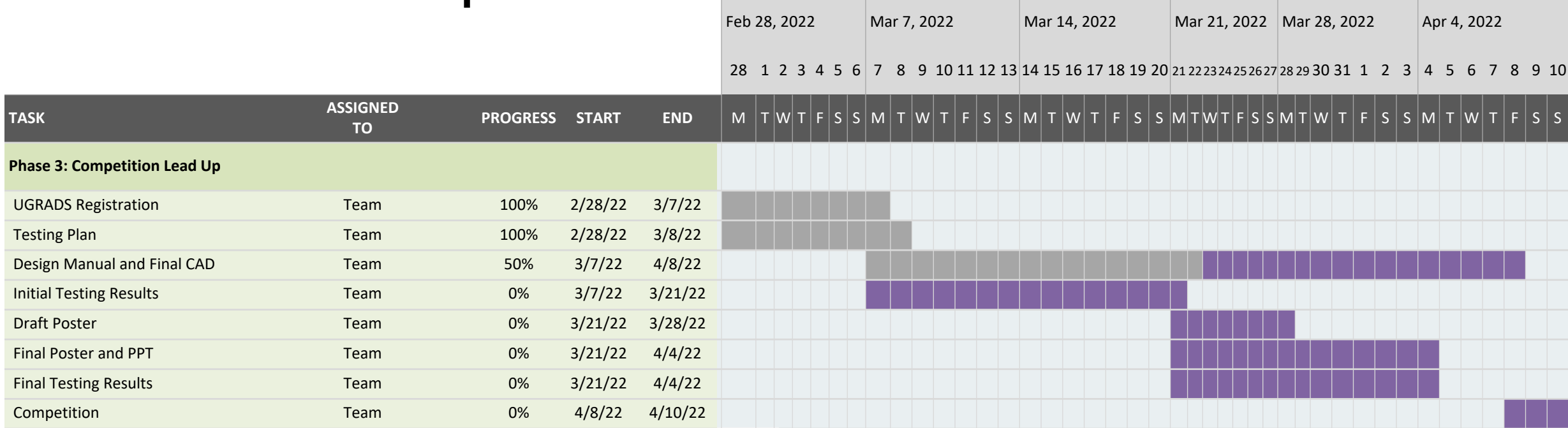
Bill of Materials (Manufacture)

NOTE: Difference columns in table will show if actual went over estimated amounts. Red numbers show went over (negative) and black shows under numbers (positive).

											Itemized Cost (\$)	
Area	Items	Primary Vendor	Manufacturer	Lead Time	Quantity	Make/Buy	Part Status	Price Per Pa	Total Price			
Fuselage	Fuselage	Novakinetics	Team	2 Weeks	1	Make	Assembled	Donated	Donated			
Tail	Horizontal Stabilizer	Novakinetics	Team	2 Weeks	1	Make	Assembled	Donated	Donated			
Tail	Vertical Stabilizer	Novakinetics	Team	2 Weeks	1	Make	Assembled	Donated	Donated			
Wings	Balsa Wood Ribs	NAU IDEA Lab	Team	1 Day	1	Make	Assembled	Donated	Donated			
Wings	Airfoil	Novakinetics	Team	2 Weeks	1	Make	Assembled	Donated	Donated			
Landing Gear	Front Landing Gear Pin	N/A	N/A	N/A	1	N/A	Assembled	Donated	Donated			
Landing Gear	Front Landing Gear Support	N/A	N/A	N/A	1	N/A	Assembled	Donated	Donated			
Landing Gear	Front Support	N/A	N/A	N/A	1	N/A	Assembled	Donated	Donated			
Landing Gear	Wheel	N/A	N/A	N/A	3	N/A	Assembled	Donated	Donated			
Powerplant	Propeller Assembly Rod	N/A	N/A	N/A	1	N/A	Assembled	N/A	N/A			
Powerplant	Propeller Nozzle	N/A	N/A	N/A	1	N/A	Assembled	N/A	N/A			



Gantt Chart Updates



- Hardware Check Complete, 100% of manufacturing completed
- Items in mind: Continue work on UGRADS poster/presentation, Design manual/final CAD, testing and final results
- Competition 4/8-4/10

