

# 3D Printed Aircraft Competition

## Team Frequent Flyers

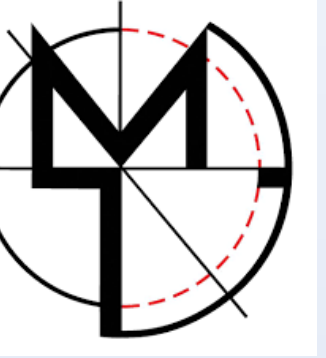


### Team Members

Connor Hill, Taylor Burgess, Alexandria Hardy,  
Brian Bowling, Zakary Harrison



**SAN DIEGO STATE UNIVERSITY**



### Competition Rules

- All lifting surfaces 3D printed and fixed
- Maximum 5 second thrust
- Remains within flight path – football field and height of goal post
- Must be hand thrown

### 3D Printing

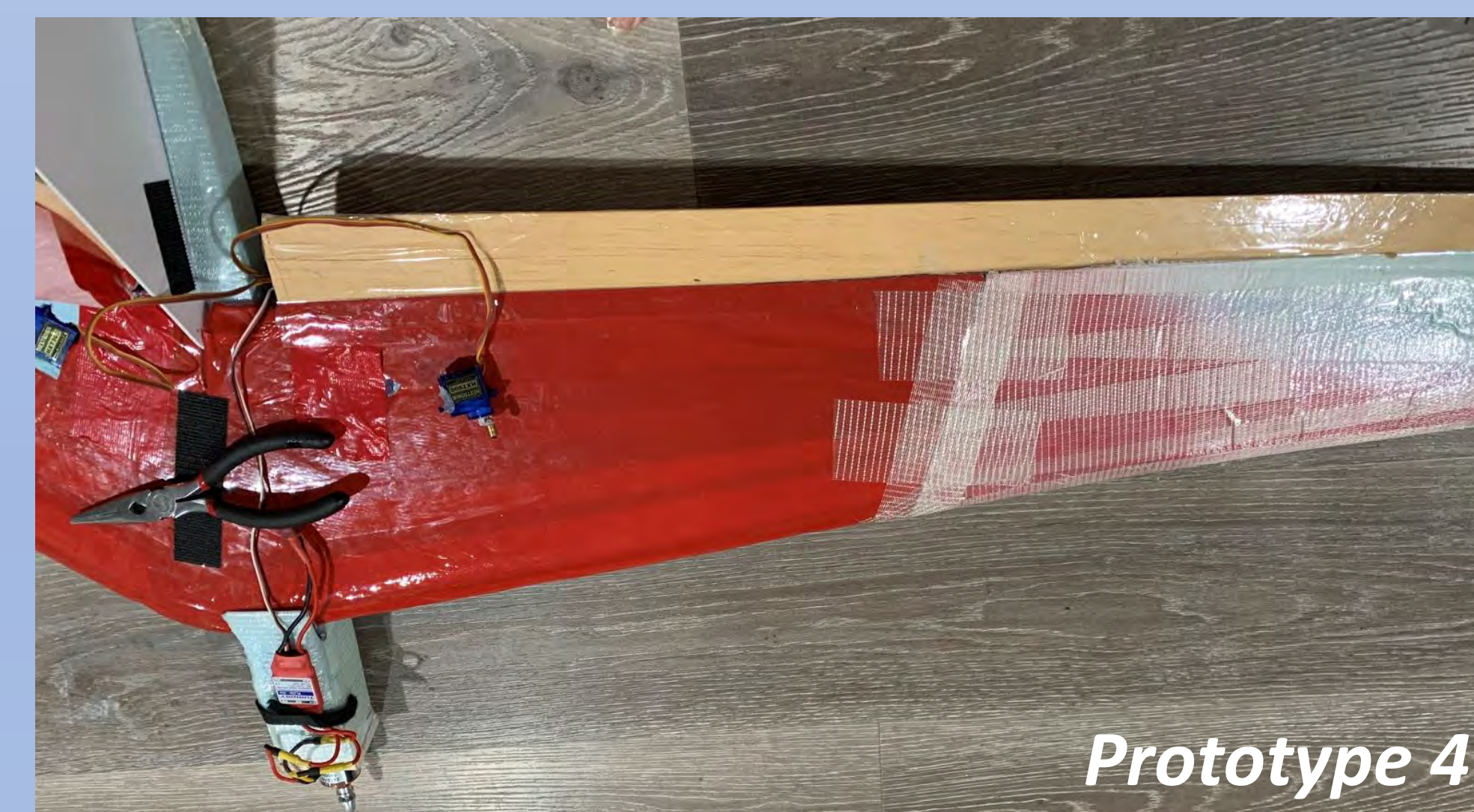
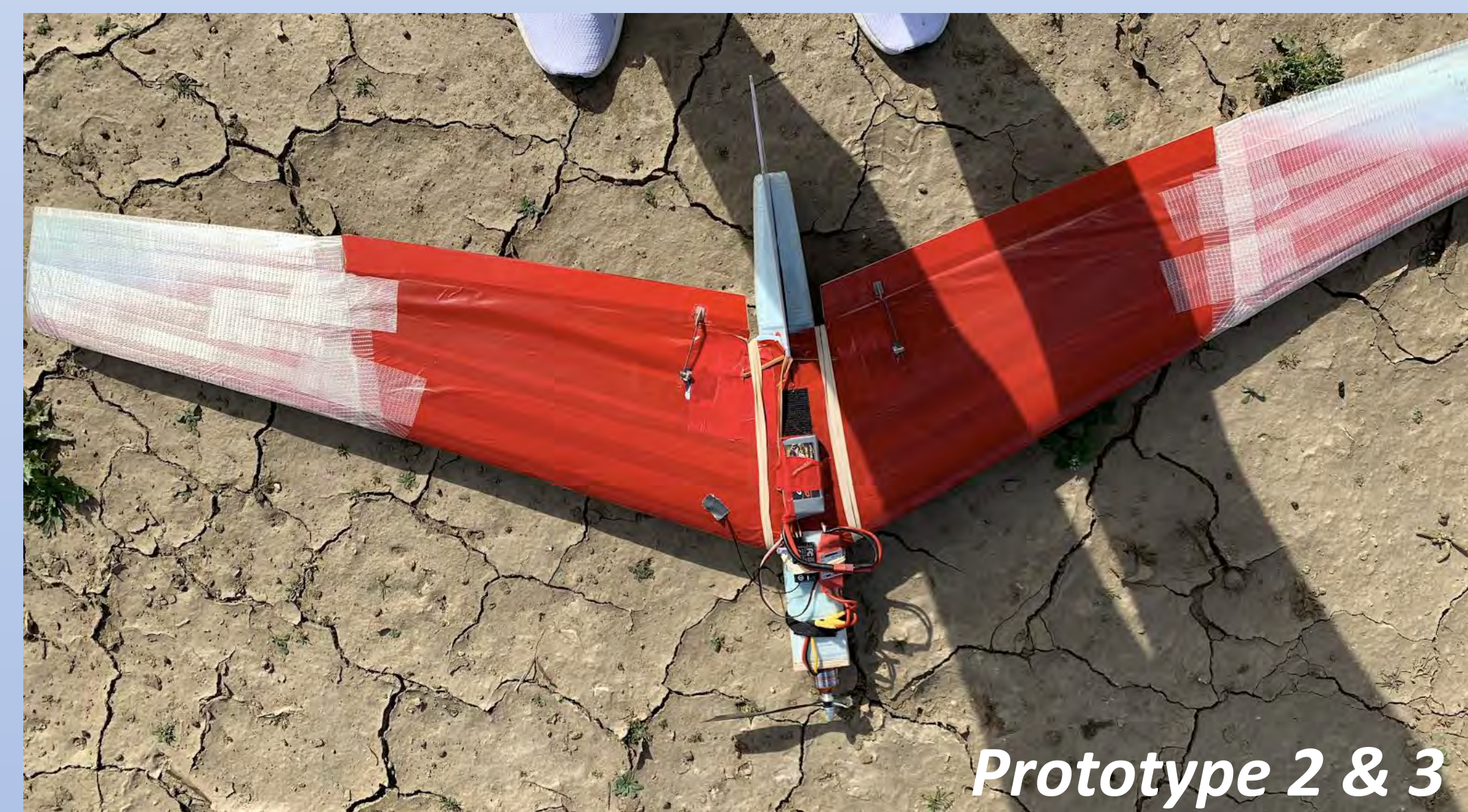
#### Creality CR-10



#### 3D Printing Takeaways

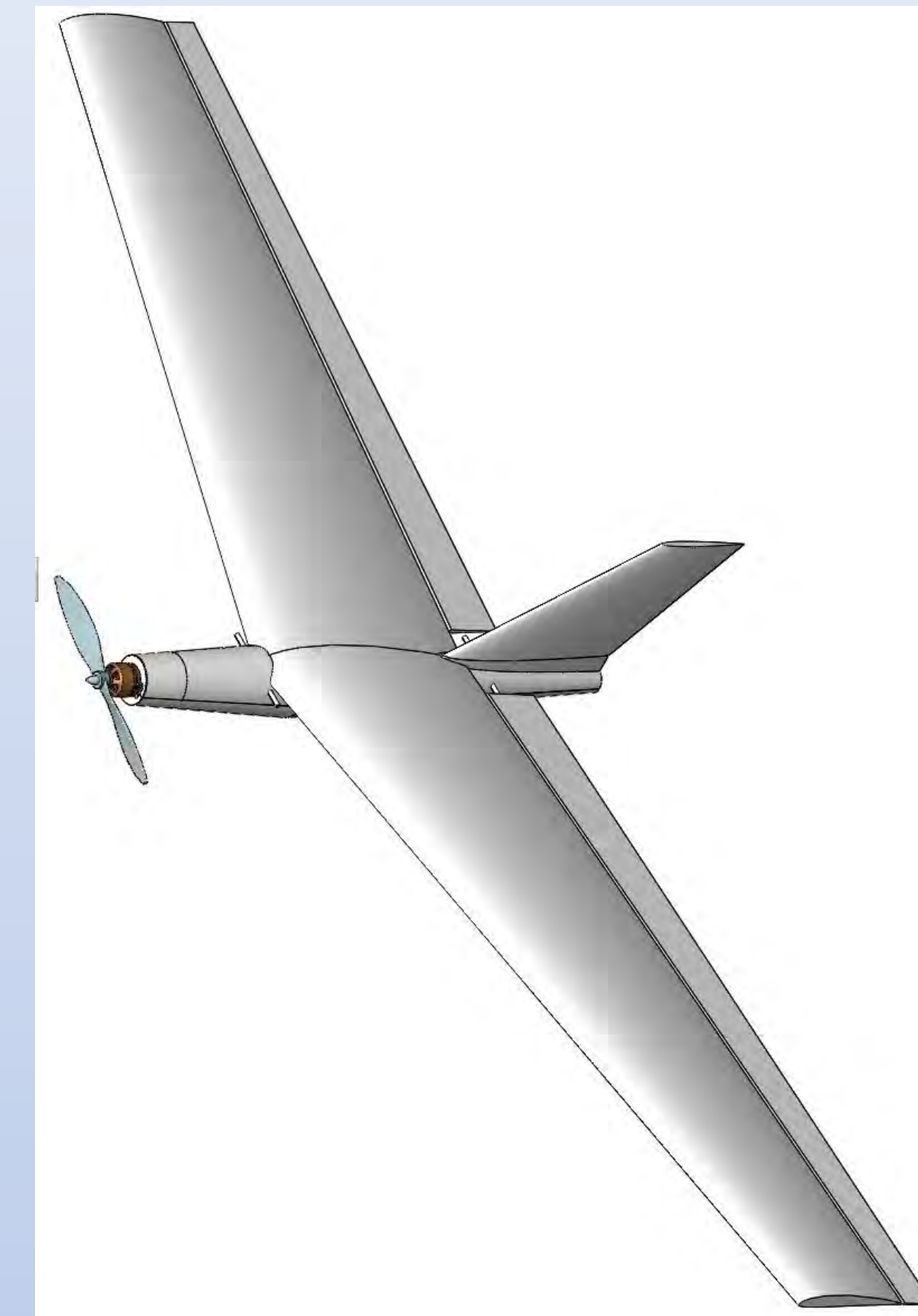
- Troubleshooting settings
- Tolerances can vary depending
- Adapting settings per material
- 45° max without supports
- Designing for 3D printing
- Complex designs possible

### Aircraft Progression



### Final Design

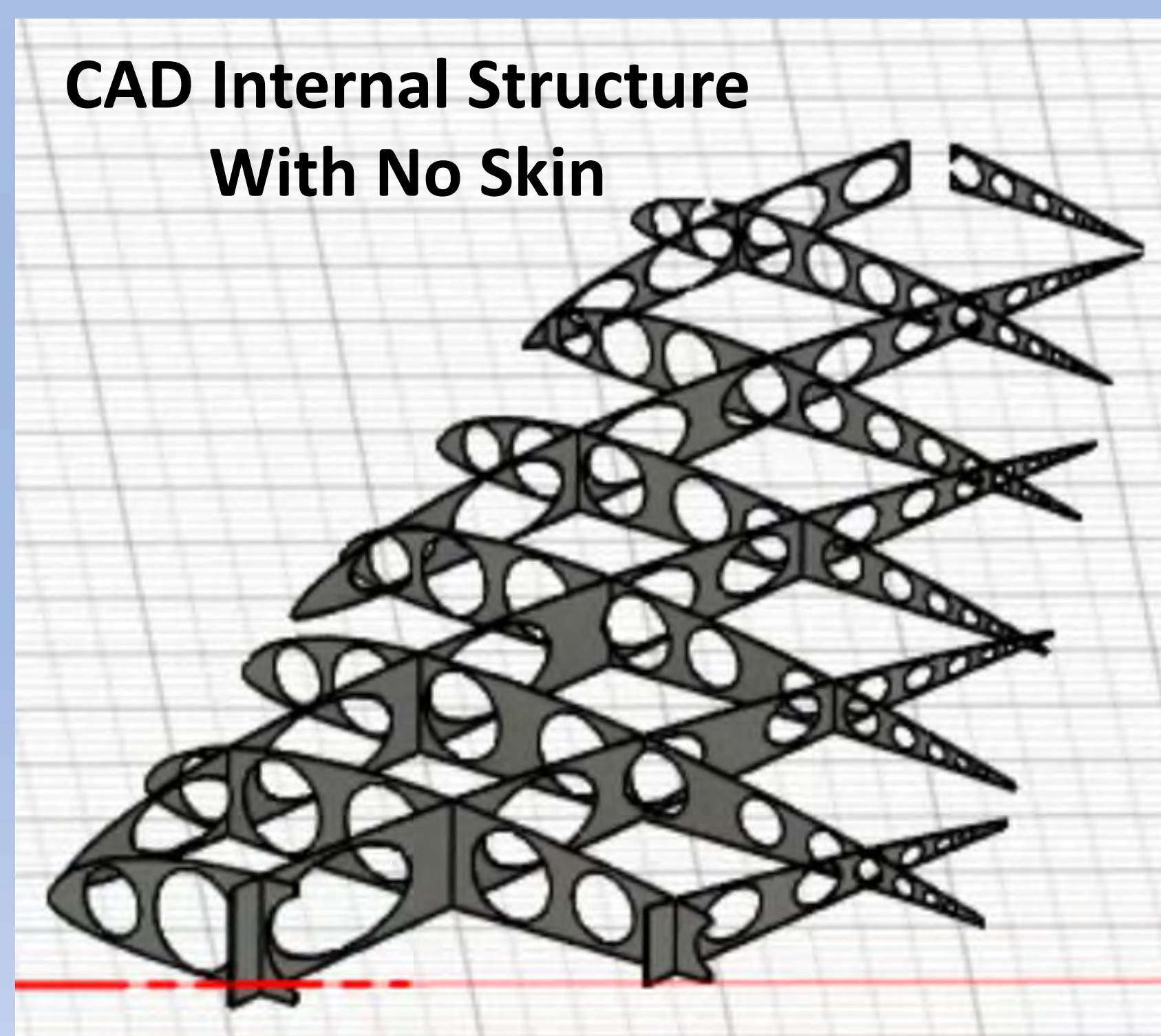
Aspect Ratio – 9.6  
Wingspan – 1.44 m  
Average Chord Length – 15 cm  
Root Chord Length – 20 cm  
Tip Chord Length – 10 cm  
Sweep Angle – 13°  
Airfoil – SD7037



### Acknowledgements

We would like to thank the Department of Mechanical Engineering, Dr. Shaffar, Michael Morgan, and Charles Norris for their commitment to our team and continuously providing support and guidance throughout this project.

#### CAD Internal Structure With No Skin



Printed Wing Section

