

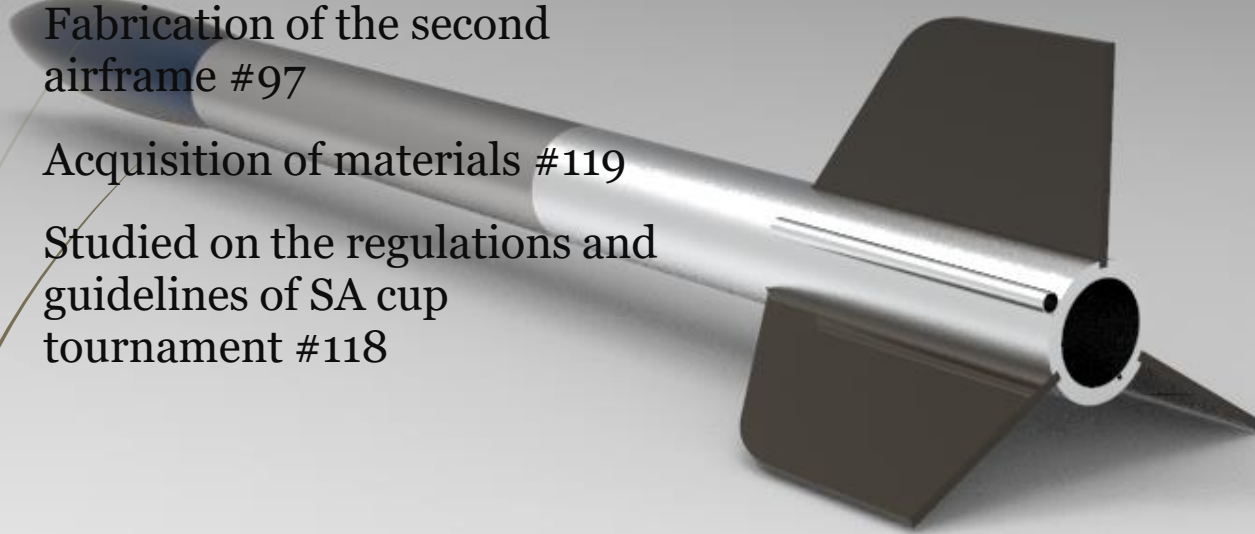


# WEEK 7 PROGRESS REPORT

AIRFRAME TEAM

# Objectives

- Fabrication of the second airframe #97
- Acquisition of materials #119
- Studied on the regulations and guidelines of SA cup tournament #118



# Fabrication of the Second Airframe

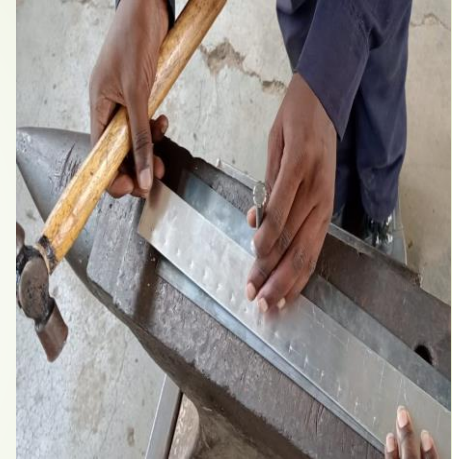
## Procedure



- Marking desired length equal to the circumference



- Cutting using shearing machine



- Marking the positions of the rivets
- Reinforce the points using a centerpunch and a mullet.

# Fabrication of the Second Airframe



- Drilling using a drilling machine



- Rolling using plate rolling machine until the two ends meet



- Riveting using the rivet gun

# Acquisition of Materials

Materials obtained from industrial area



- Plastic shaft
- Blind Rivets
- Drill bits
- Screws



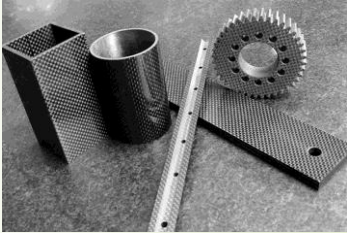






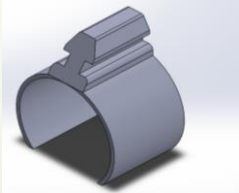


# Acquisition of Materials

## Materials obtained from JUJA


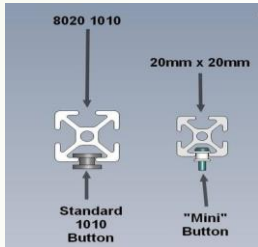





- Bolts
- Hose clips
- Shroud lines
- Shock chords
- Epoxy
- Parachute material

SA REGULATIONS	N3.5 DESIGN	RECOMMENDATION
<ul style="list-style-type: none"> <li>Rockets must be constructed from lightweight materials e.g. <b>fiberglass, carbon fiber, or aluminum</b></li> </ul> 	<ul style="list-style-type: none"> <li>The desired material i.e. aluminum is already being used.</li> </ul> 	<ul style="list-style-type: none"> <li>Conduct further research on Carbon Fiber Reinforced Material.</li> </ul> 
<ul style="list-style-type: none"> <li>PVC , Quantum Tube, and steel shall not be used in any rocket airframe structure i.e. fins, body tubes, and nosecones</li> </ul>	<ul style="list-style-type: none"> <li>PLA material is employed for fabricating nosecones, while plastic shafts serve as couplers.</li> </ul>	<ul style="list-style-type: none"> <li>Employing different material in the fabrication of both the nosecone and the coupler e.g. wood.</li> </ul> 

SA REGULATIONS	N3.5 DESIGN	RECOMMENDATION
<ul style="list-style-type: none"> <li>All load bearing eye bolts shall be of the closed-eye, forged type.</li> <li>All bolts must be made of steel.</li> </ul>	<ul style="list-style-type: none"> <li>At present, regular bolts are in use.</li> <li>Bolts are made of mild steel</li> </ul> 	<ul style="list-style-type: none"> <li>Replace regular bolts with closed eye bolts is needed. (They are stronger and ensures the load is evenly distributed across the load hence no breaking)</li> </ul>  
<ul style="list-style-type: none"> <li>Use of rail button is recommended</li> <li>A minimum of two rail buttons shall be used</li> <li>3D printed rail button is not permitted</li> </ul>	<ul style="list-style-type: none"> <li>Use of launch lug as a guide for the rocket during launch</li> </ul> 	<ul style="list-style-type: none"> <li>Incorporate rail buttons that are not 3D printed.</li> </ul>  



SA REGULATIONS	N3.5 DESIGN	RECOMMENDATION
<ul style="list-style-type: none"> <li>A 1515 launch rail is recommended</li> </ul> 	<ul style="list-style-type: none"> <li>A 1010 is currently being used</li> </ul> 	<ul style="list-style-type: none"> <li>We will need to transition to a 1515 rail rod.</li> </ul> 
<ul style="list-style-type: none"> <li>Recommended colors; white or light tinted colors (i.e. orange, red, yellow) to mitigate solar heating in launch environment.</li> </ul>	<ul style="list-style-type: none"> <li>The required colors are already implemented.</li> </ul> 	<ul style="list-style-type: none"> <li>The colors will be maintained.</li> </ul> 

# Remaining Tasks

- Proceed with the fabrication of the next airframe #97
- Perform static test with the solid Propulsion team #114
- Continue studying the regulations of the SA Cup tournament. #118



THANK  
YOU

