

Ballistic Bison Rocket Team

NDSU Chapter AIAA

Overview

- Intro
- How We Got Here
- Technical Information
- Looking Forward



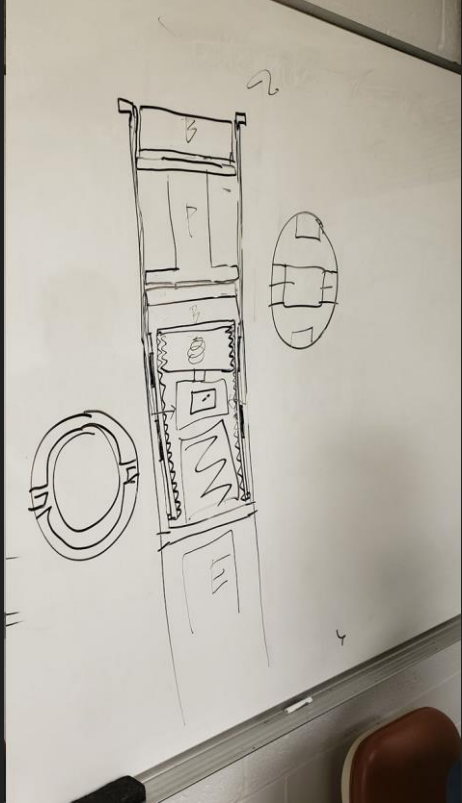
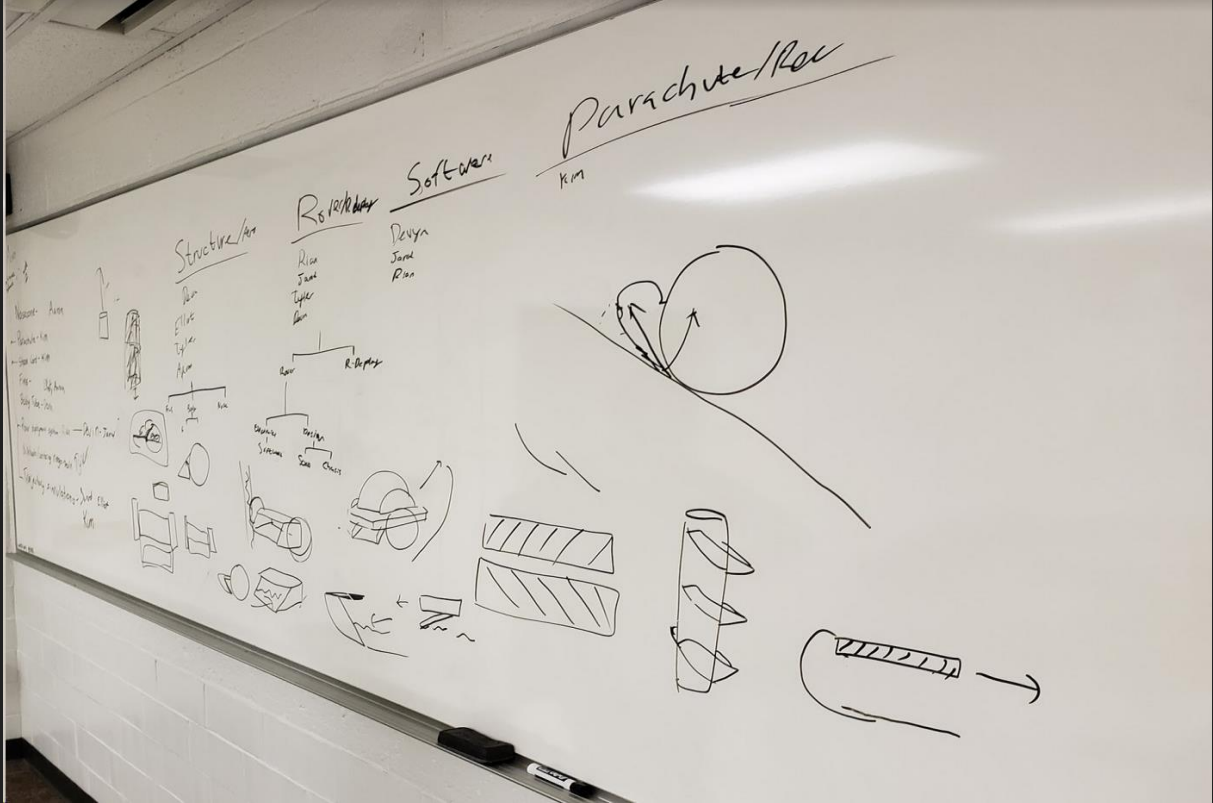
Introduction

How We Got Here

2017-2018 NDSU Rocket Propulsion Design Team



NASA Student Launch Competition



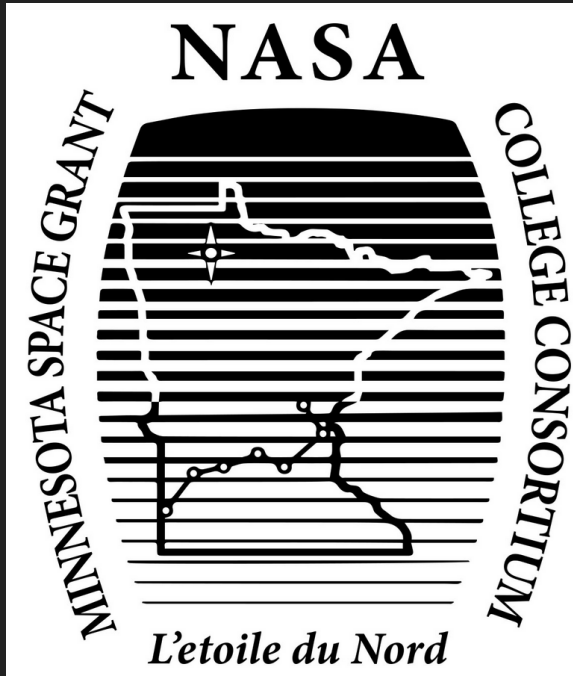
Failing Forward

Dear North Dakota State University,

This year's NASA Student Launch (SL) proposals were scored by a team of NASA scientists, engineers, and education specialists. The Proposal Review Panel utilized a rubric, based on the proposal requirements included in the SL handbook, to score all of the proposals received. **Unfortunately, your proposal did not meet the qualifying score necessary to participate in the 2018-2019 NASA Student Launch.**

MNSGC Efficient Supersonic Challenge

- Fly supersonic on the lowest impulse engine



Taking Time To Learn

- Team now had time to slow down and learn rocketry
- Team of 20 leaned to about 6
- Mentor was critical in teaching fundamentals of rocketry



Model Rocket Launch

- Launching a high power rocket kit is required for the competition



Model Rocket Launch

- After debating what we would paint the rocket we actually built it
- Motor Class: G
- Learned way more than expected





It worked but...



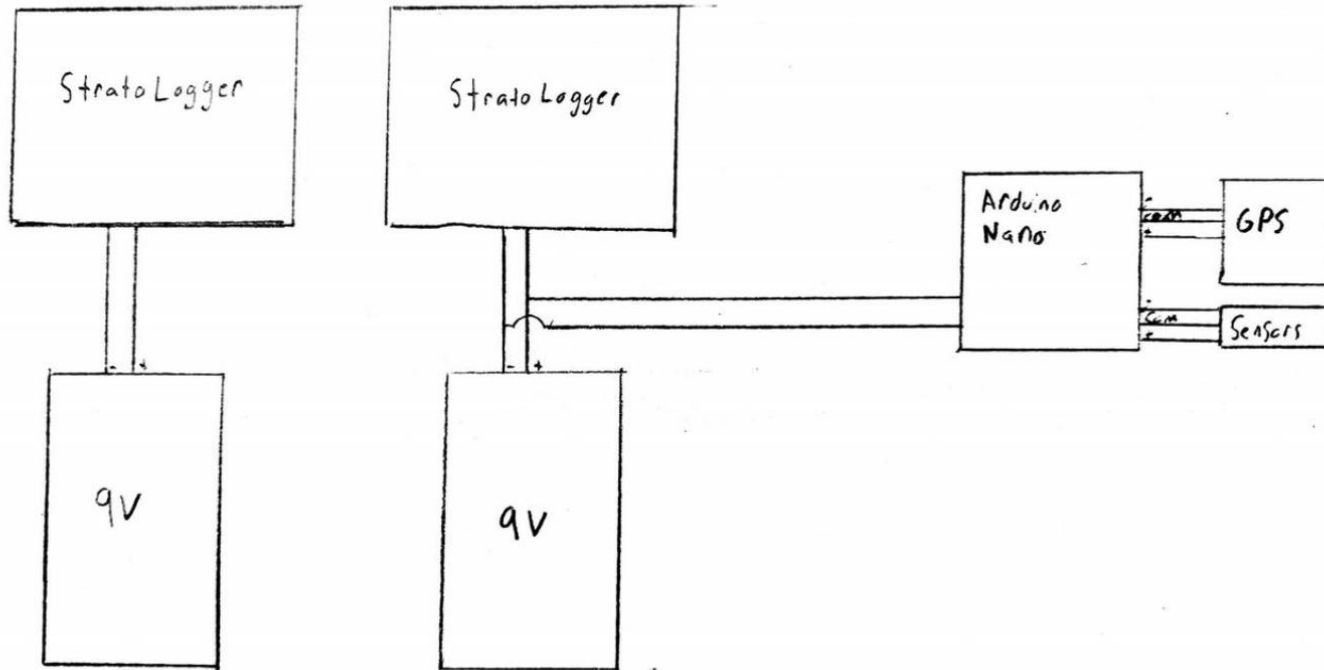
What we learned

- Before the launch we had no idea what it takes to make a rocket
- Lots of epoxy
- Sizing
- Pre-launch and post launch operations
 - Parachute insertion, Separation, Placing fuses, Arming, Launch!

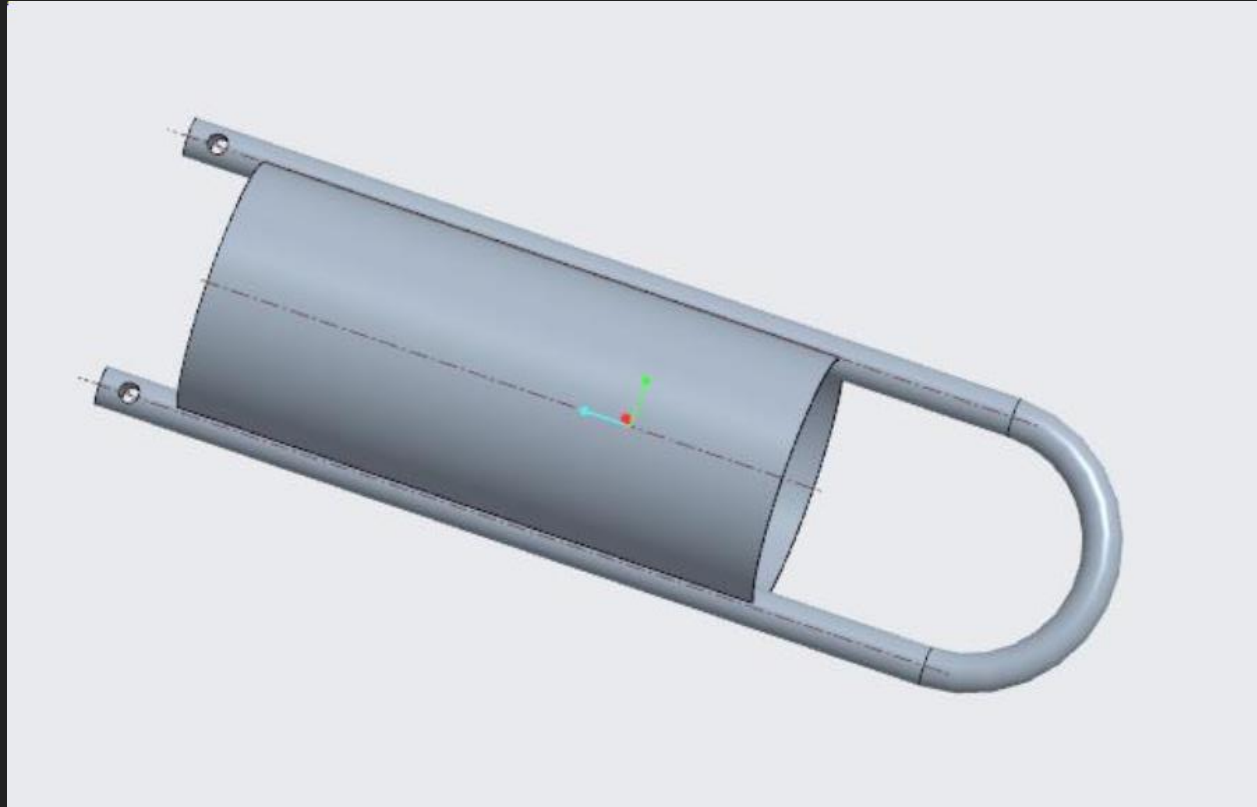


Avionics Bay

Avionics/Electronics Bay

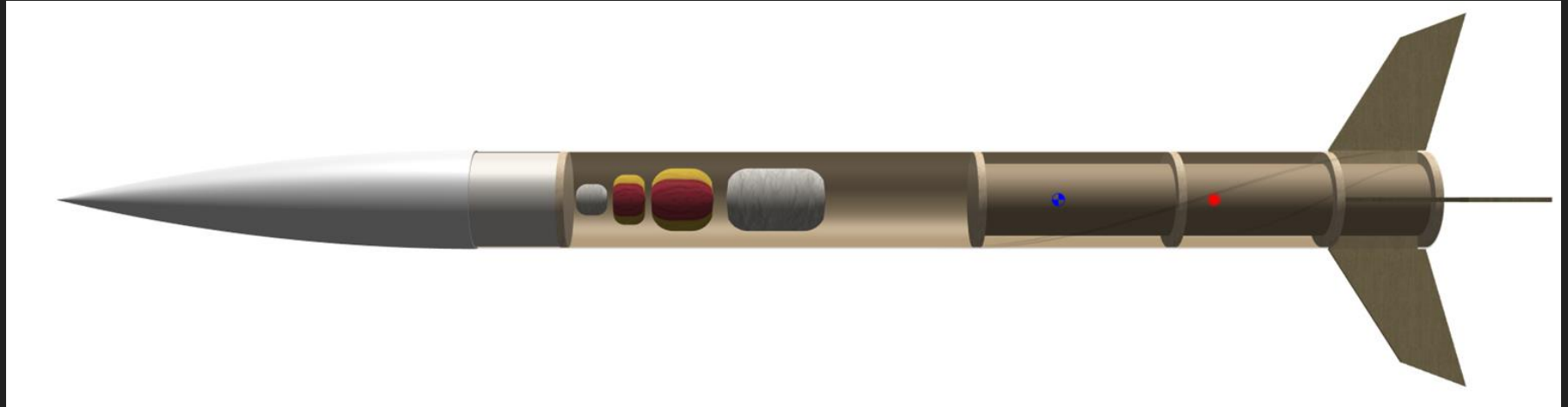


Avionics/Electronics Bay

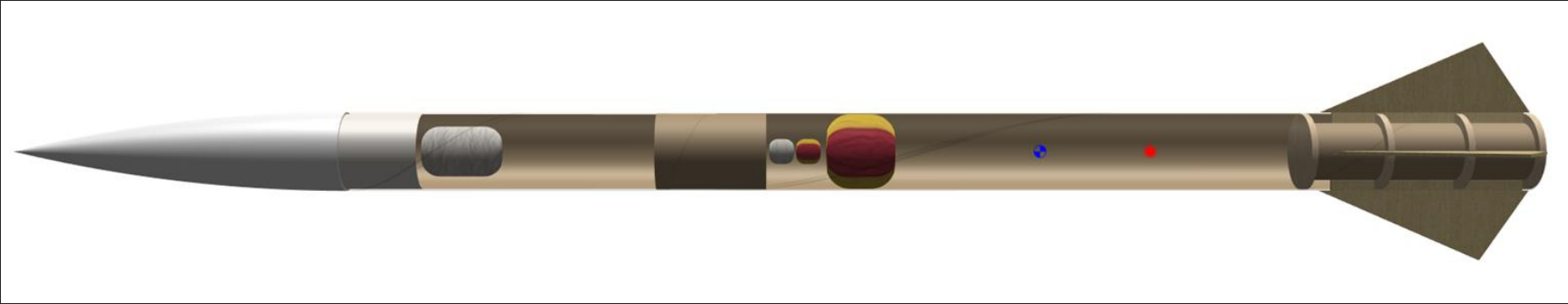


Evolution of the Rocket Design

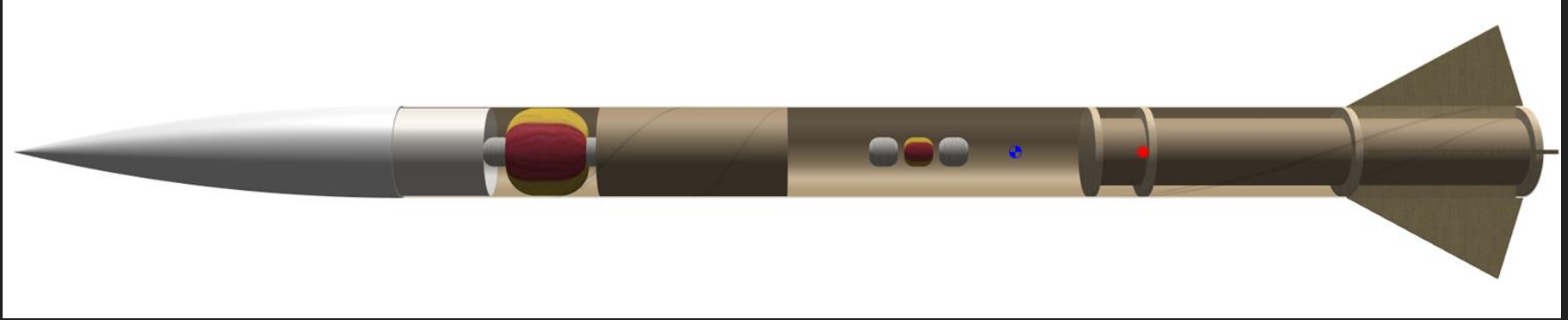
Initial Design



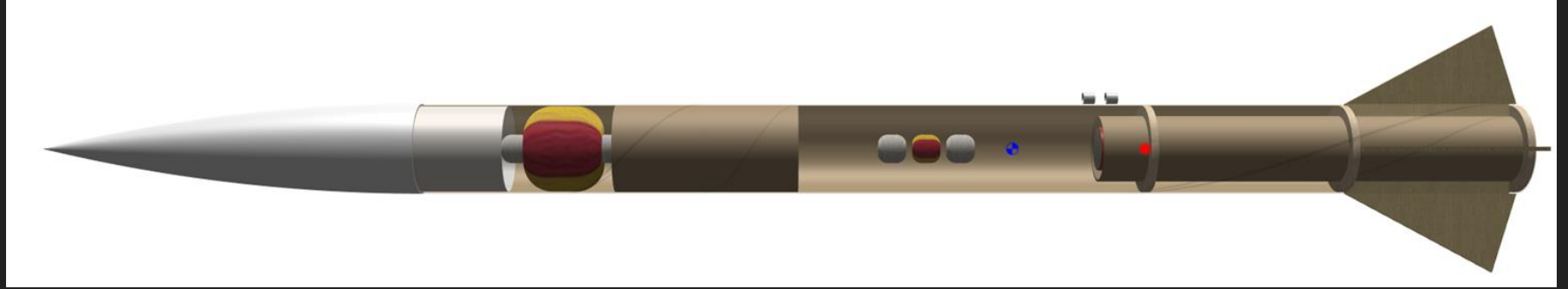
Second Design



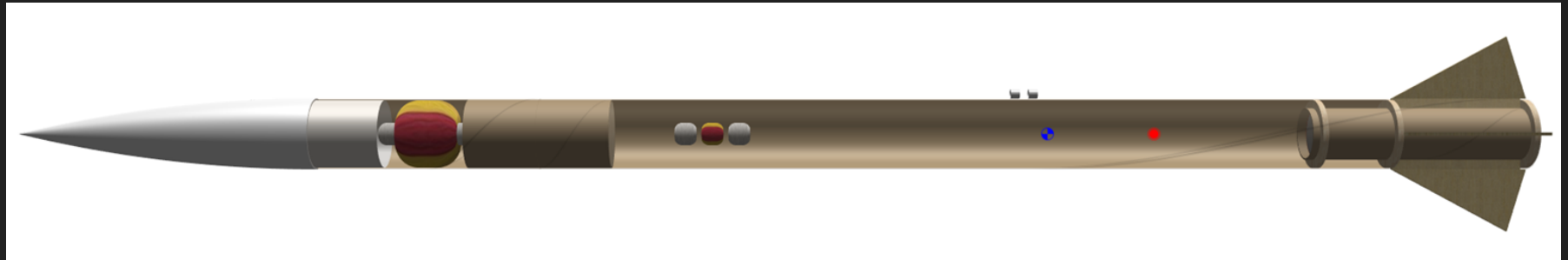
Third Design



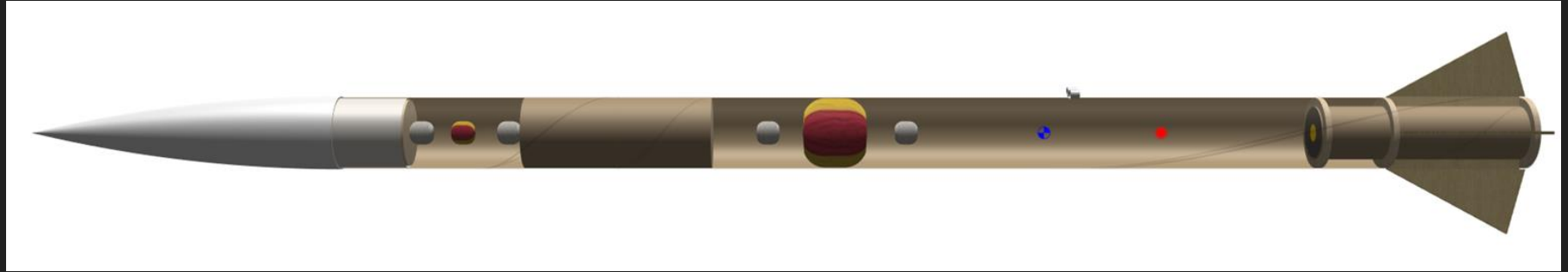
Fourth Design



Fifth Design



Final Design

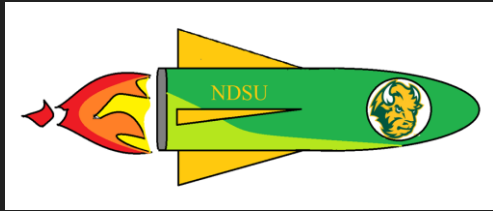


The Future of The Ballistic Bison

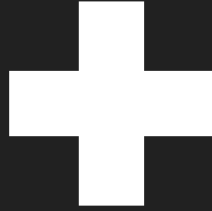
Continue Rocketry and Aerospace At NDSU



Combine RPDT and Ballistic Bison



RPDT



Questions?