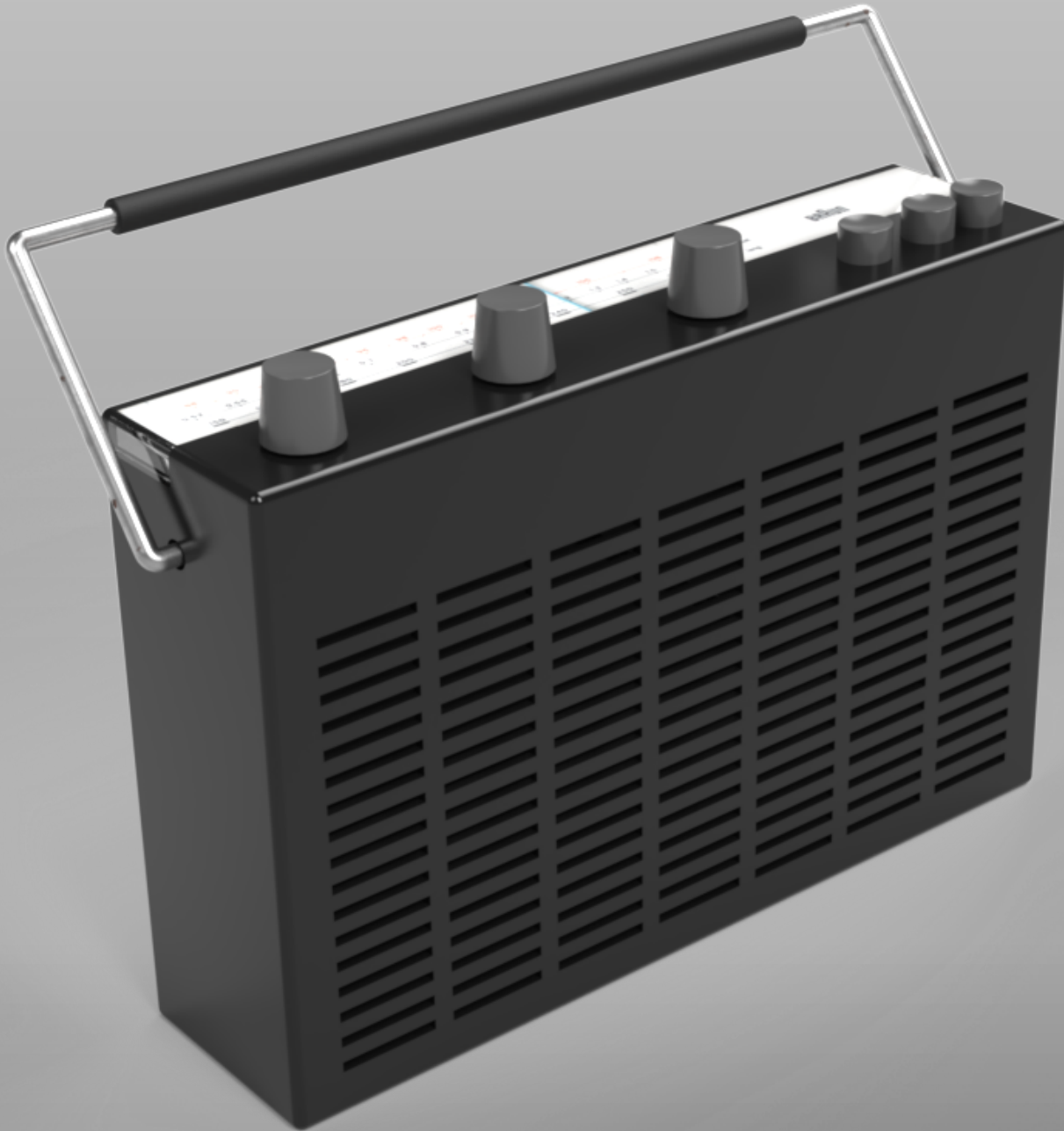




CAD Portfolio

Miles J. Reidhead

milesrei@byu.edu

Jetboil Camp Stove

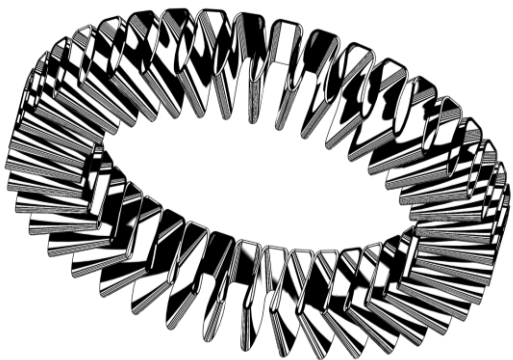
30 Hours

Project Objective:

Create a next generation design based on the Jetboil Zip camp stove. Include both functional and aesthetic updates while upholding brand identity.

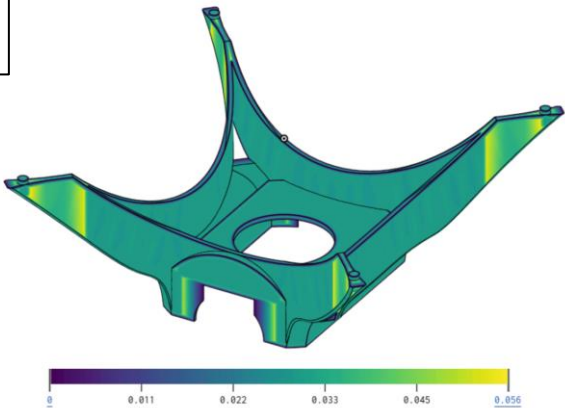
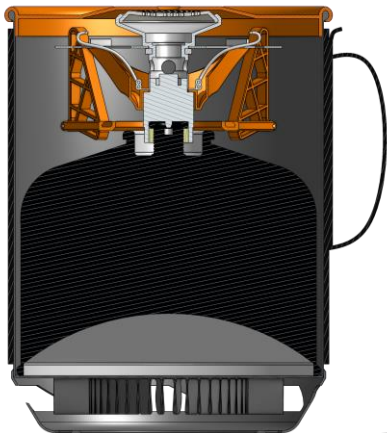


Analysis and Iteration



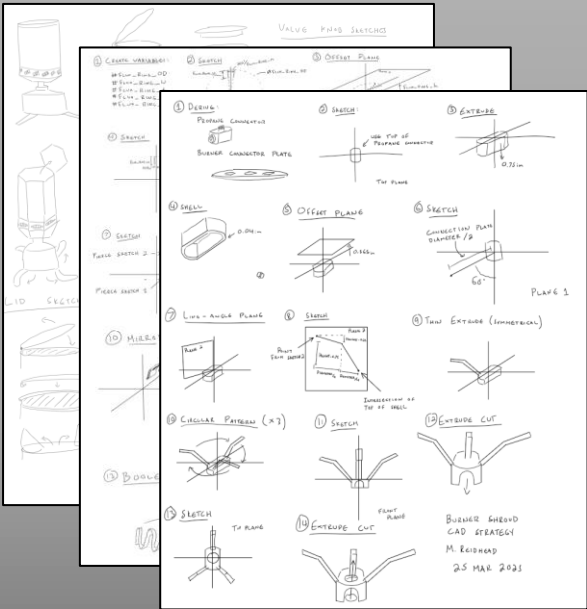
Curvature analysis of flux ring to evaluate continuity and smoothness.

Packed assembly cross section to analyze compactness and fit of stowed Jetboil.

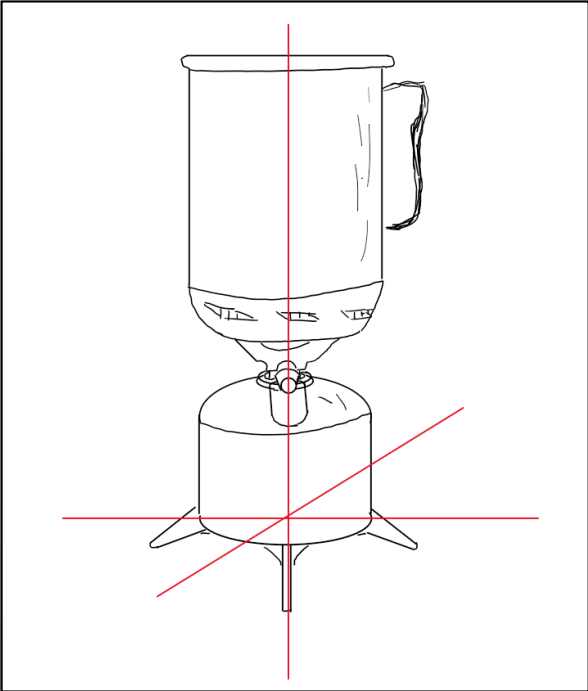


Thickness evaluation of the burner shroud to gauge manufacturability.

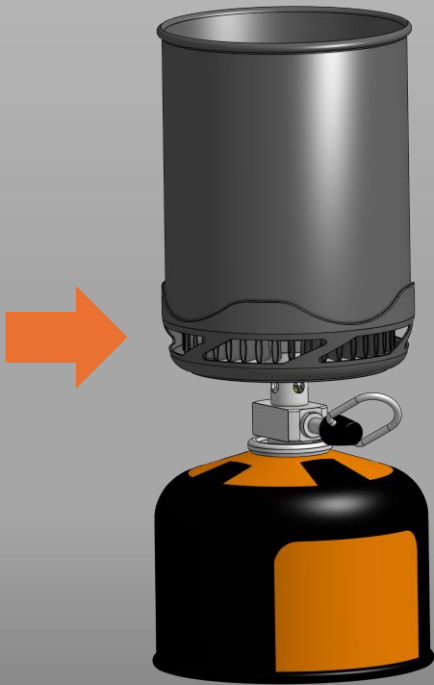
Ideation and Strategy



Final Concept Sketch



Initial Assembly



Finished Product





Surface modeling used to capture complex curvature of flux ring.



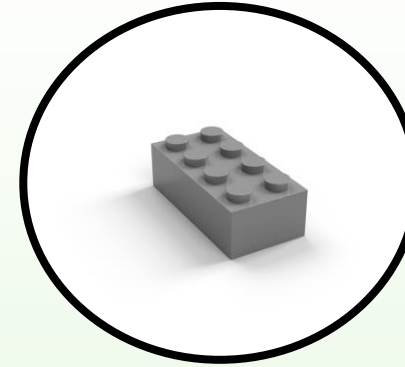
Offset surfaces from derived body ensure compatibility with standard Jetboil propane canisters.



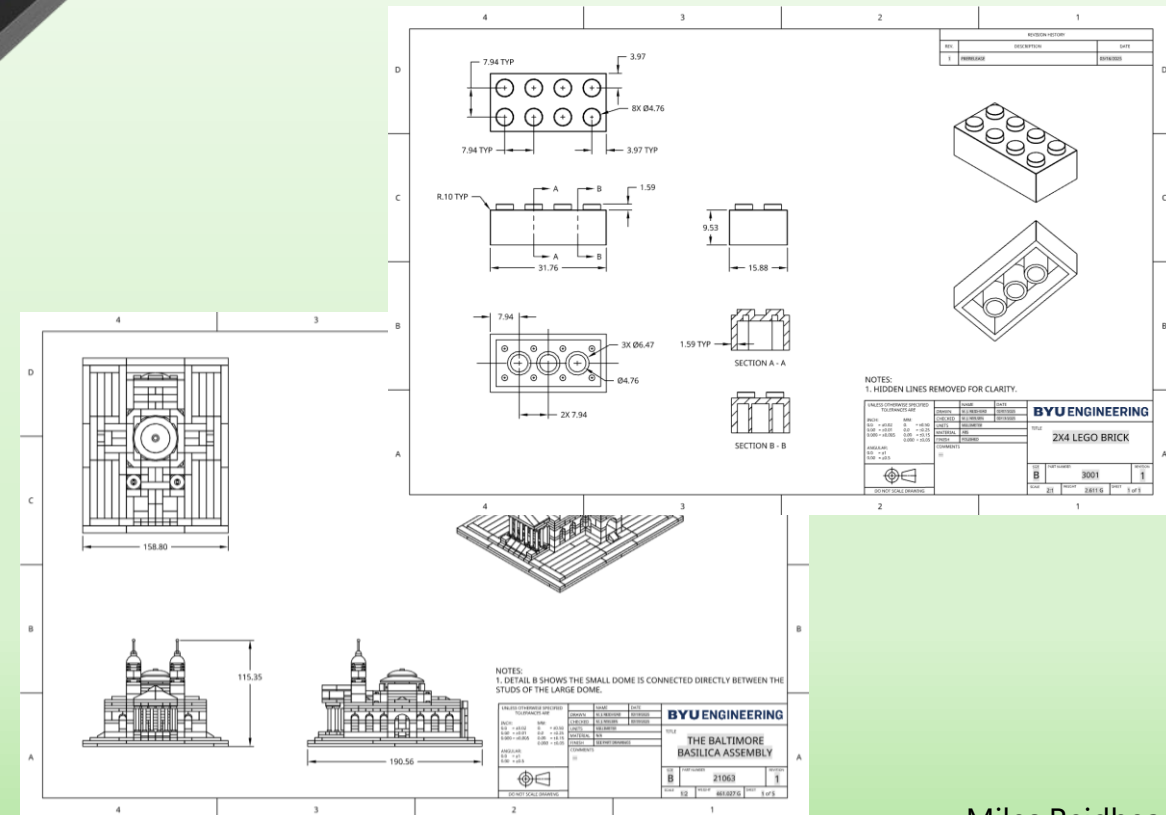
Autolocking spring system modeled with 3D splines and profile sweeps.



Spline-guided lofts of derived features used to design aesthetic appearance with proper fit.



Standard rectangular pieces modeled using configuration tables to produce desired number of studs and brick type.



Baltimore Basilica LEGO Set

25 Hours

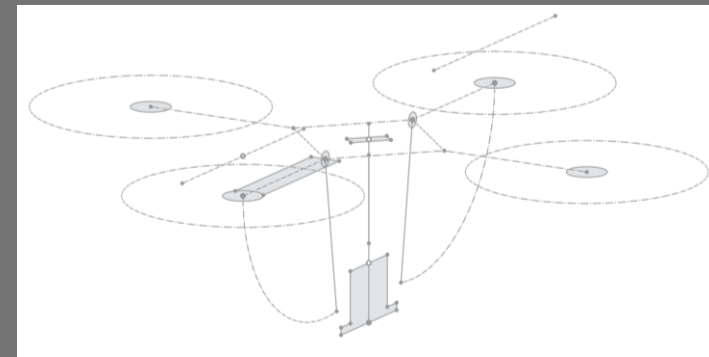
454 individual parts

Foldable Drone Body

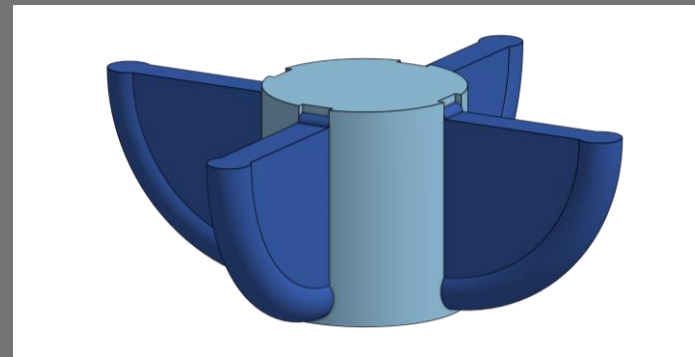
30 Hours



Project Objective: Collaborate with a team to produce a conceptual drone marketed towards a selected user persona. Produce a drone that would be competitive with the industry leader in foldable drones, the DJI Mavic.



Master Sketch Geometry

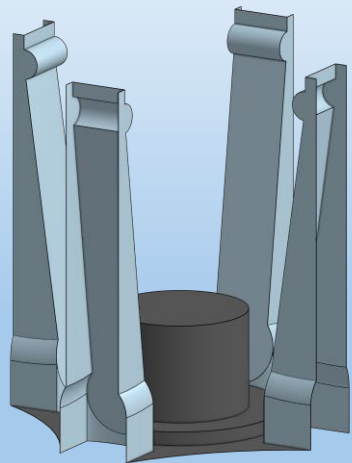


Master Space Allocations

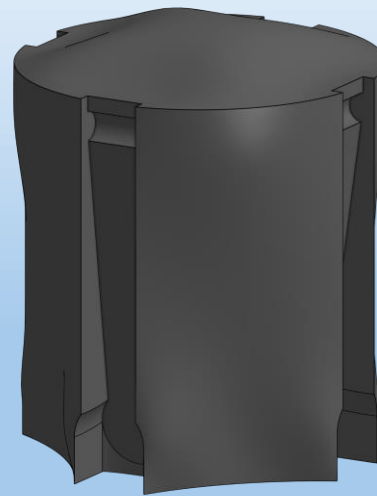
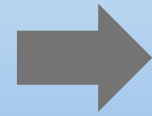


Functional Assembly

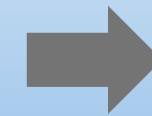
Assembly Modeling Approach



Offset surfaces for body design derived from the master space allocations.

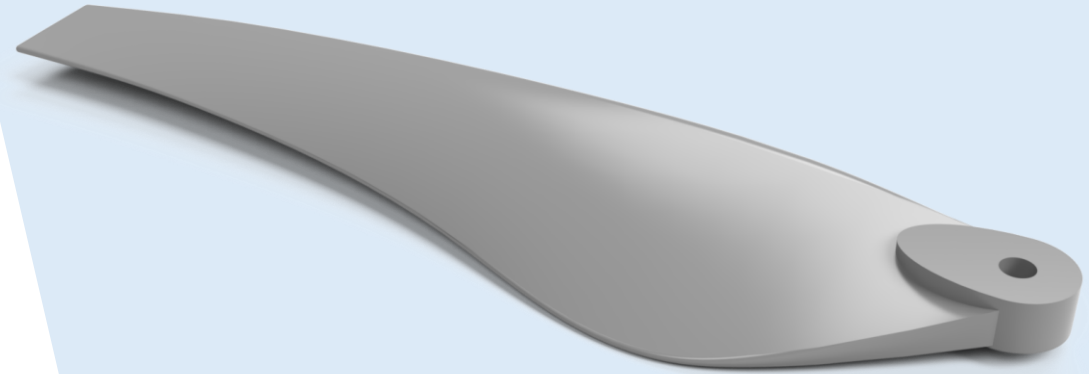


3D splines used to bridge derived surfaces and produce desired curvature.

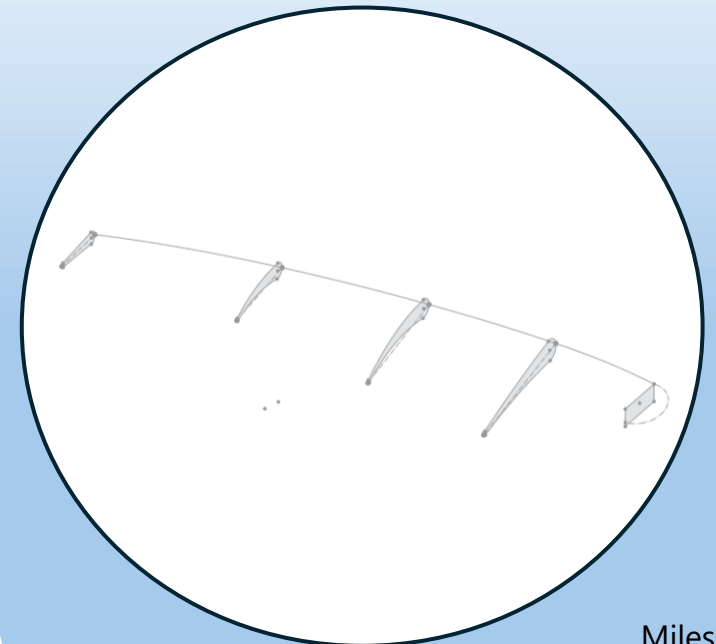


Fillets and chamfers used to remove rough edges and create final aesthetic.

Additional Modeling for Collapsible Drone Project:

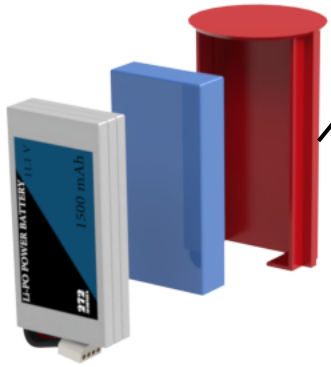


Complex propeller curvature modeled with a multi-profile loft along a guide curve

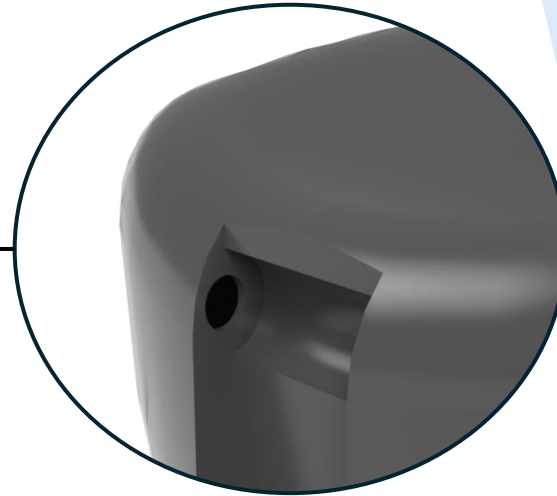


Miles Reidhead

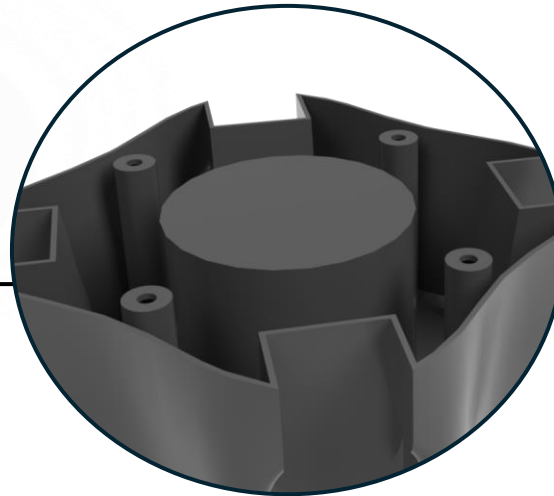
Removable LiPo battery compartment and wrapper



Pin slots compatible with folding arm design



Thin walls designed for injection molding



Two piece body attached with four M3 screws

