

HR 2 BREAKDOWN

TEAM: 20F15 Northrop Grumman

Due Date: Friday, March 26, 2020

Images of the current state of the team's completed system:



Image 1: Final shaft design.

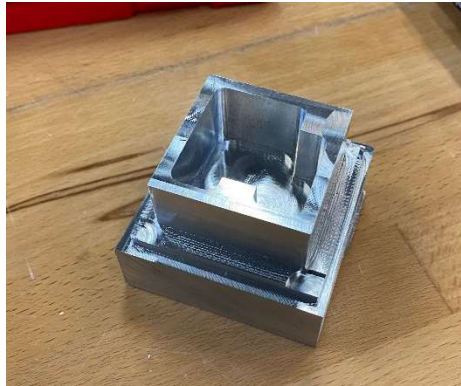



Image 2: Housing


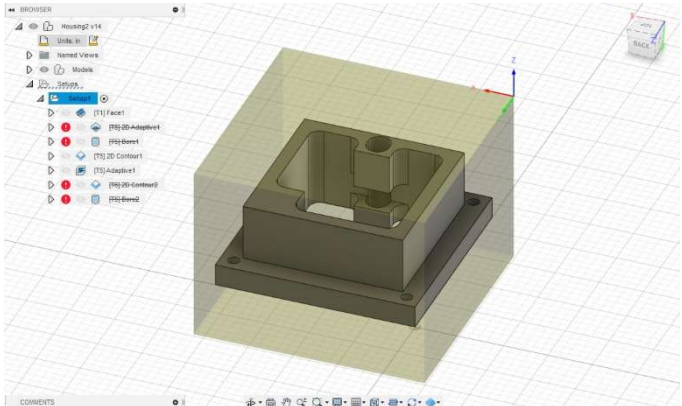
The following are the Action Items each person completed between Hardware Review 1 and Hardware Review 2:

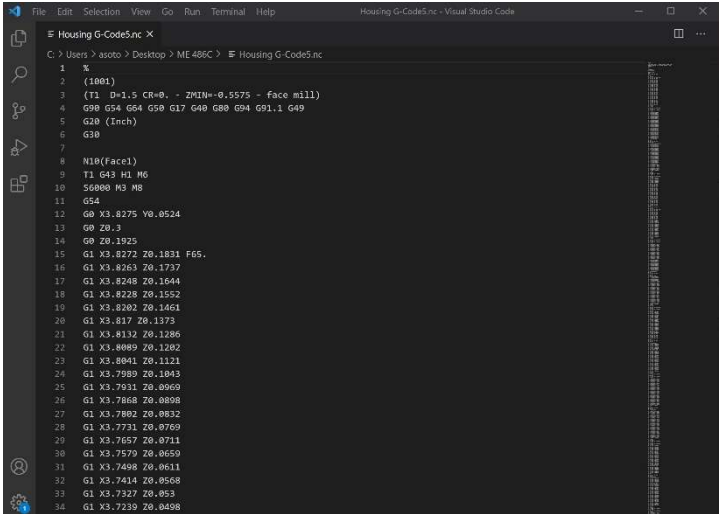
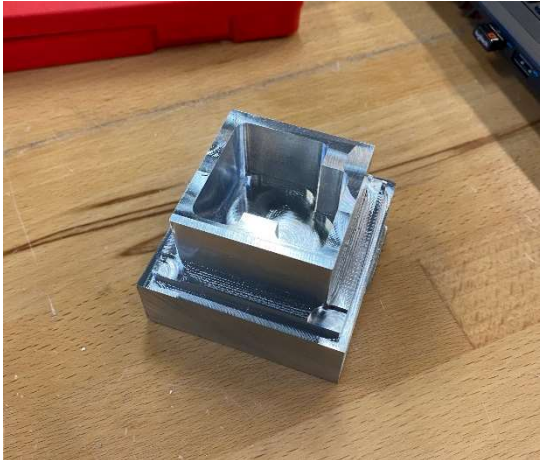
Team Member: Timothy Anderson

Action Item	Date Completed	Result/Proof of Completion
Update CAD and submit work order through NAU machine shop for housing and shaft	02/15/21	

Purchased and constructed testing jig with team members	03/05/21	 <p>-Included drilling holes/screws and cutting wood.</p>
Submitted all purchase requests	2/8/21-3/26/21	Ordered/purchased testing jig materials, stock, aluminum plates and 3D printing materials.



Team Member: Alex Soto

Action Item	Date Completed	Result/Proof of Completion
Constructed testing jig.	3/05/21	
Created G-Code on Fusion 360 to use for CNC Machining in Machine Shop.	3/2/21-3/24/21	


		
Ran G-Code on Tormac in Machine to start housing part	3/25/21	


Team Member: Jake West

Action Item	Date Completed	Result/Proof of Completion
Designing Mounting Solution and Mounting Torsion Spring	3/24/21	

Manufacturing Sandwich Plates	3/19/21	
Completing 3D Printed Proof of Concept device	3/19/21	


Team Member: Andrea Hernandez

Action Item	Date Completed	Result/Proof of Completion
Create mock prototype of shaft.	2/17/2021	


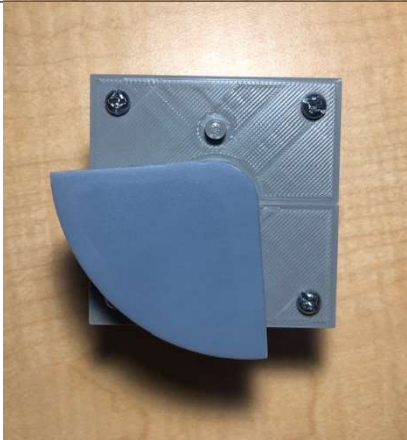
Had plates cut out with plasma cutter then sanded/files as needed to assemble.	3/18/2021		
Adjusted hole on shaft to be able to use the piece in assembly after sheared drill bit. Had new set of plates manufactured.	3/25/2021	Was successful in getting the piece out and torsion spring was able to be attached.	


Team Member: Sam Mangialardi

Action Item	Date Completed	Result/Proof of Completion	
Construction of testing Jig	3/5/2021		
Assembled and tested 3D printed concept	3/19/2021		

Mounting torsion spring on shaft	3/24/2021	
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Team Member: Michael Wilson

Action Item	Date Completed	Result/Proof of Completion
Redesigned pin system to be self-containing within housing and properly line up with compression spring	2/23/21	
Manufactured/assembled parts for 3D printed proof of concept	2/25/21	

Helped filing/fitting plates after they were cut out on plasma table	3/18/21		
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The following are the Action Items for each team member between HR 2 and the Final Product presentation:

Team Member	Action Items	Date Due
Timothy Anderson	<ol style="list-style-type: none"> 1. Finish Final CAD package including parts, assembly and drawings. 2. Finish Manufacturing and Assembly. 	<ol style="list-style-type: none"> 1. 4/26/21 2. 4/1/21
Alex Soto	<ol style="list-style-type: none"> 1. Finish code for housing and shaft part and run on tormac. 2. Manufacture pin if possible after consulting with Machine Shop Managers. 	<ol style="list-style-type: none"> 1. 3/31/21 2. 4/2/21
Jake West	<ol style="list-style-type: none"> 1. Finish fully manufactured device assembly. 2. Complete door for testing Jig. 	<ol style="list-style-type: none"> 1. 4/1/21 2. 4/6/21
Andrea Hernandez	<ol style="list-style-type: none"> 1. Ensure registration 2. Final website check 3. Complete manufacturing of final design. 4. Complete all testing of final design. 5. Endure all final files are uploaded for UGRADS. 	<ol style="list-style-type: none"> 1. 3/28/21 2. 4/27/21 3. 4/1/21 4. 4/6/21 5. 4/8/21
Sam Mangialardi	<ol style="list-style-type: none"> 1. Fabricate the new door for the testing jig. 2. Attach sheet metal sheet to testing jig. 3. Rough draft of poster 	<ol style="list-style-type: none"> 1. 4/6/21 2. 4/6/21 3. 4/2/21
Michael Wilson	<ol style="list-style-type: none"> 1. Manufacture clear 3D printed model to demonstrate internal function of design. 2. Manufacture pin for testing. 	<ol style="list-style-type: none"> 1. 4/8/21 2. 3/31/21