

End-of-Year Newsletter



After a year filled with numerous challenges, HPRC is closing out the 2020-2021 academic year strong with a mostly completed full-scale rocket and payload! We would like to thank all our sponsors, mentors, alumni, friends, and families for supporting HPRC over the past year. We truly couldn't have done this without you.

May at-a-Glance

Over the course of May, our team participated in a couple of exciting activities!

On May 14th, 10 team members went to **Test Devices**, one of our sponsors, to conduct ejection testing. Watch high-speed video footage of the testing on our Youtube channel <u>here</u>.

On May 22nd, 5 team members launched our subscale rocket at CMASS in Acton, MA!

Over the summer, the team will continue to collaborate virtually on educational workshops and design plans for the coming year. Our team is proud to announce that we will be applying to compete in the **Intercollegiate Rocket Engineering Competition (IREC)** held at the SpacePort America Cup in 2022. Click this <u>link</u> to learn more about IREC!



Team members Peter, Max, Nikita, Keelan, and Quentin attended the Acton subscale launch! They were joined by Dan Fairbank from our sponsor **Test Devices** and Scott Harris from the **WPI Tinkerbox Program** (and Scott's wonderful dog Pico)!



Sirius & Polaris Divisional Updates

Rocket Division Sirius



Aerostructures

Our aerostructures team cut the airframes to length, slotted, and drilled holes in them. They also painted the nosecone, airframes and fins and added vinyl sticker decorations before doing a test fit of everything.

Avionics

Since the beginning of May, the design for the avionics board was completed and purchased. Recently, the avionics team has put together the essential components for testing and has been working on debugging. Plans for a second version of the board are also in the works.





Mechanical

The airbrakes were assembled after receiving the waterjet parts and modifications to the airbrake fins were made to reduce binding at full extension. The avionics bay was completed and the coupler and airframe were prepped for integration with the airbrakes by creating slots. Testing was completed to ensure the airbrakes deployed correctly with the modifications.

Recovery

The recovery team finished assembling the recovery bay and attached the shock cord and parachutes to it as well. All necessary components were mounted inside the rocket in order to conduct ejection testing at the Test Devices facility.



Payload Division Polaris

For the payload, the bases of our self-righting system have been reprinted in PLA instead of NylonX. For stabilization, some of the shafts were remade with tighter tolerances to try to reduce slack in the system. Part of the payload recovery assembly is in the process of being fixed as resin-printed parts didn't hold up to the pressures needed. The mounting of the PCB is completed for electrical and programming team, and cable management and software are in progress.







As we wrap up this academic year, we would like to extend our appreciation for your support along our rocketry journey. We look forward to our continued partnership and collaboration as we aim to achieve even greater heights in 2021-2022!

THANK YOU!