

Journey to Spaceport

Year 2 – 2018/2019

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Year 1 – 2017/2018

Rocket Building

Simulating
Launching
Optimizing

Nose Cone

A nose cone that houses the drogue parachute and connects directly to the electronics bay

Drogue Parachute

A small parachute deployed at sustainer apogee

Electronics Bay

Houses the TeleMega GPS and controls both parachute deployment and sustainer ignition

Sustainer Parachute

A larger main parachute that slows the sustainer to a safe landing speed

Sustainer Engine

Propels the rocket to max altitude after booster burnout; 1.7 second burn time

Forward Fins

Provides stability to the sustainer after stage separation

Staging Coupler

Supports stage separation at sustainer ignition

Booster Parachute

A large parachute to slow the booster to a safe landing speed

Aft Fins

Provides stability to the rocket before stage separation

Booster Engine

Initiates flight with a 0.7 second burn time

Hybrid Engine

Engine Design
Manufacture
Test

Oxidizer Tank

A highly pressurized vessel that contains liquid Nitrous Oxide

Flow Regulator

A motorized valve that monitors flow regulation of the oxidizer

Injection Plate

Responsible for providing desired oxidizer flow into the combustion chamber

Impinging Plate

An interchangeable cylindrical plate responsible for the impingement of the oxidizer

Chamber

An enclosed volume where the solid reducer and liquid oxidizer react

Nozzle

A de Laval curve responsible for directing the flow of hot gases outside of the combustion chamber

Year 3 – 2019/2020

Hybrid Rocket

Spaceport America Cup

Rocket Vehicle
Engine Optimization

Avionics

An electronics module responsible for GPS tracking, engine ignition and flow control

Research Payload

A payload built in-house to collect data

Recovery System

A recovery module that is deployed at apogee

Oxidizer Storage

A pressurized vessel holding the liquid oxidizer

Throttle Control

A flow regulation system to insert oxidizer flow into the chamber

Runaway

New Hampshire's first hybrid rocket engine that utilizes a liquid oxidizer and solid fuel

