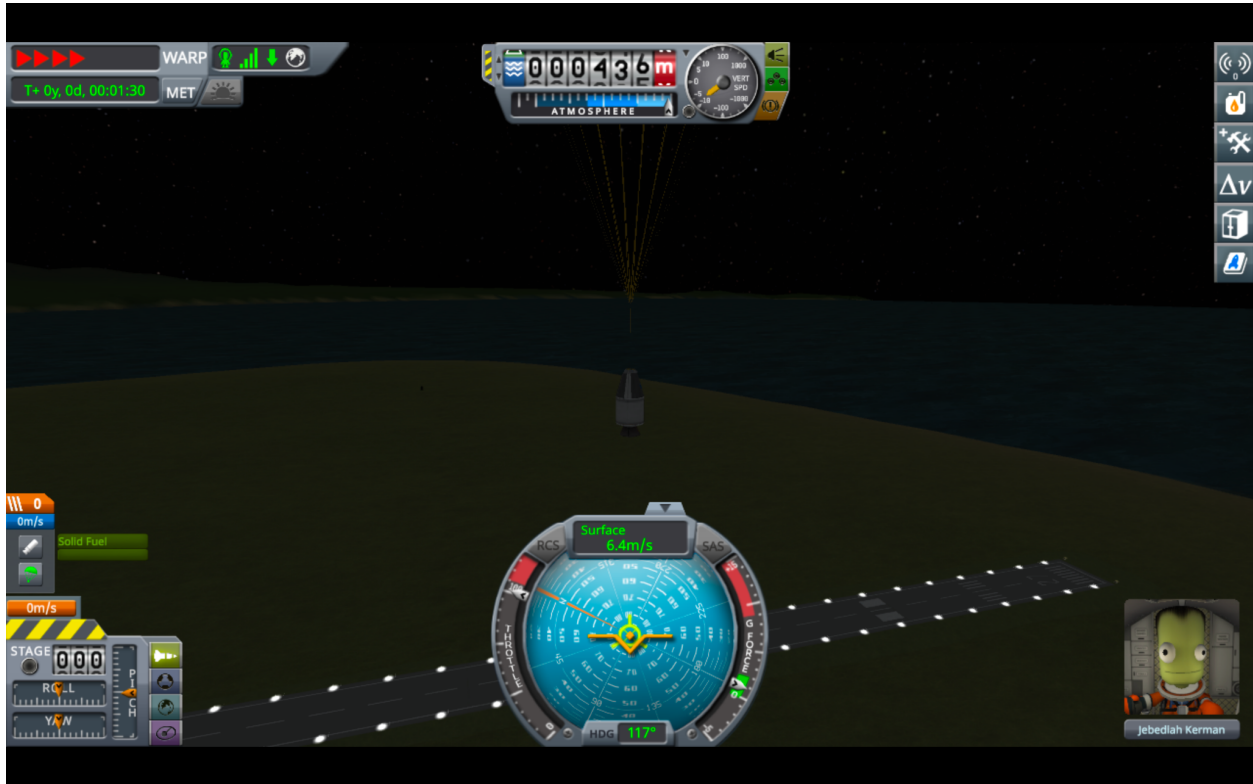


Mission Report: Launch and Land

By: Daniel Chuang



Objective Overview:

The objective of this mission was to launch a space shuttle and then land it afterwards, with all crew members in tact.

Flight Events:

[00:00] Liftoff
[01:07] Parachute Deployed
[01:54] Landing

Initial Difficulties and Analysis:

The difficulty of this mission was to first create a rocket, and then to find the correct time to deploy the parachute.

One of the biggest difficulties that was encountered was a result of too much fuel being included in the rocket. This meant that the rocket gained high speed, and on its return, it also had high speed, which led to a dilemma of when to deploy the parachute. Either the

parachute could be deployed high in the atmosphere, before speed was gained as the rocket returned to the ground, or the parachute could be deployed once the rocket had passed through Kerbin's atmosphere, when a lot of speed had already been gained. However, regardless of which option was chosen, the parachute was destroyed by the atmosphere or extreme velocity.

Design Solutions:

The initial design was based off of the design of the tutorial rocket, but no limit to fuel values was set. Afterwards, the fuel value was set to around half of it's maximum.

The components of the rocket were as such:

Mk16 Parachute

Mk1 Command Pod

RT-5 "Flea" Solid Fuel Booster (Solid Fuel: 70)

What I learned:

I learned that you always need to tune parameters, and that rocket flight (even really easy ones) require TONS of planning.

Going Forward:

Going forward, I would like to explore the possibility of having multiple parachutes being deployed, one in outer space and one while returning to the planet. This might allow me to have a straight flight with maximum fuel in the booster with a safe landing for the crew.