

Jenna Yan

Report Date: 19 October 2024

Launch Date: 12 October 2024

NAR Certification Level (After Launch) : L1

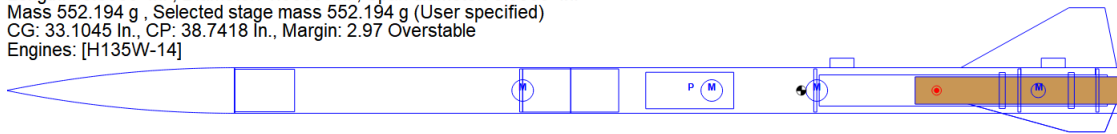
1.Launch Mission Brief Description.

- High Power Launch Time Period: 08:00 - 13:00
- The real launch time: 10:40 PDT
- Wind Speed: 2.24m/s (5mph) 202°
- Ground temperature (Celsius): 12.2° - 22.7°
- Humidity: 73%
- Probability of precipitation: 24%
- UV index: 4
- Location: 34° 29' 47.92" North Latitude 117° 2' 30.07"
- Rocket kit: AeroTech production
- Motor: H135W-14A
- Launch connector: Rail Launch Pad
- Launch pad: E4, RocStock Site

2.Rocket Flight Status.

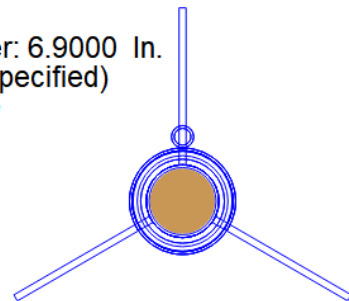
- The flight simulation before the launch. (Graph 1 & 2 shows the basic information of the rocket; Graph 3 shows the flight simulation curve of the rocket; Graph 4-7 shows the flight simulation physical model of the rocket)

Arreaux by Aerotech
Length: 46.3000 In. , Diameter: 1.9000 In. , Span diameter: 6.9000 In.
Mass 552.194 g , Selected stage mass 552.194 g (User specified)
CG: 33.1045 In., CP: 38.7418 In., Margin: 2.97 Overstable
Engines: [H135W-14]

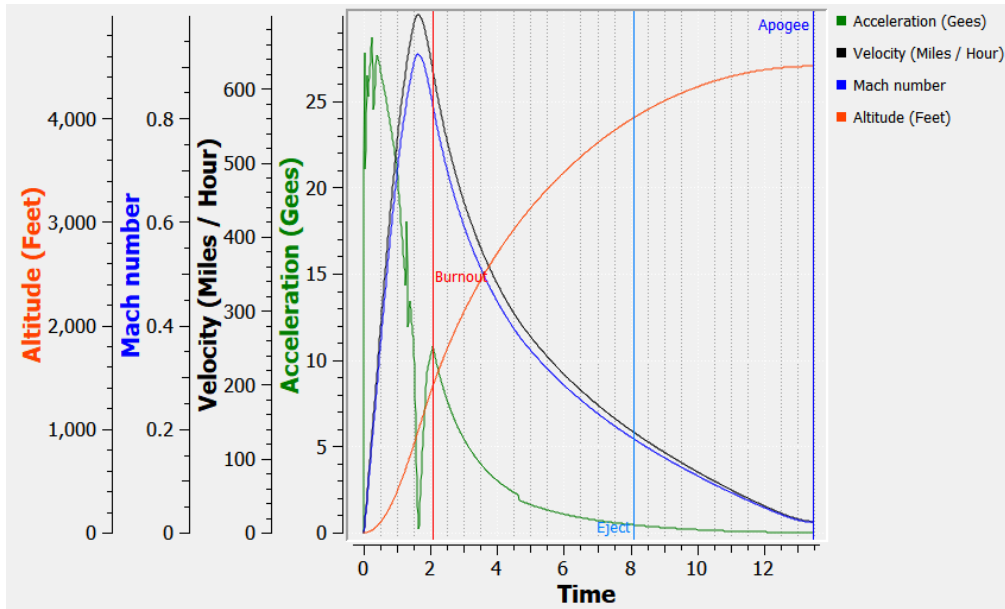


[Graph 1]

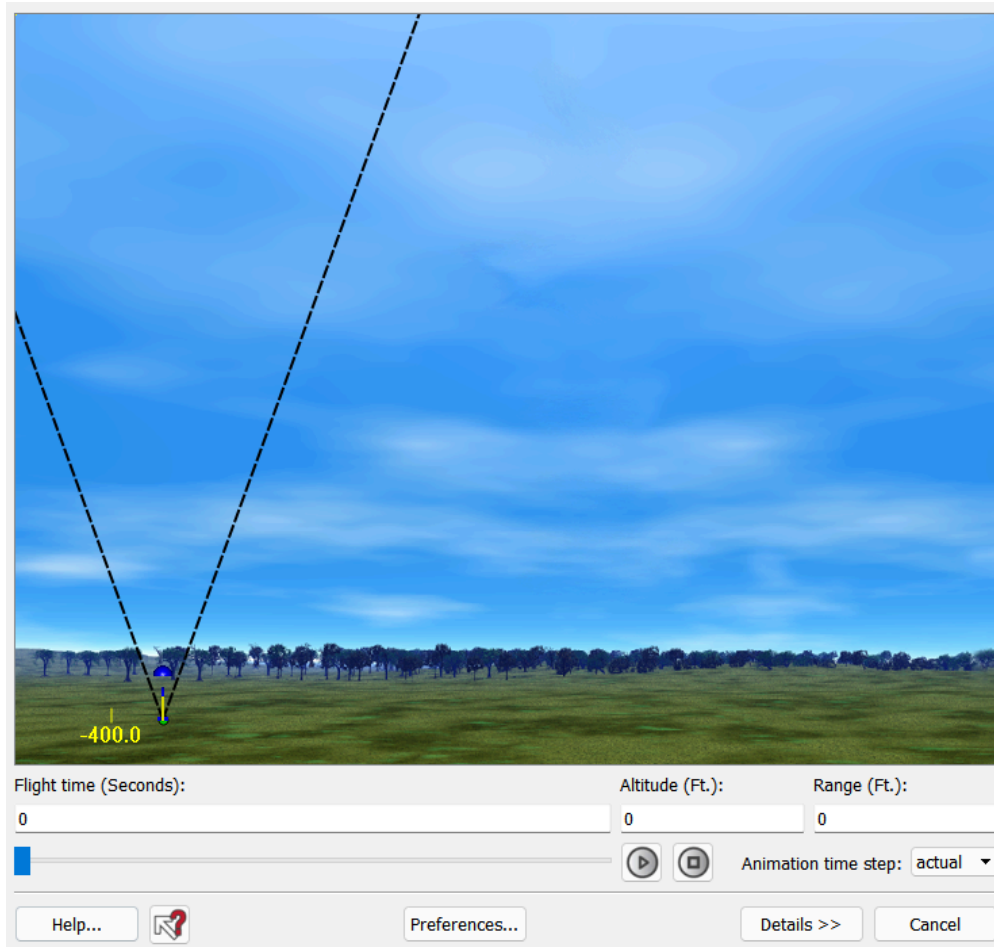
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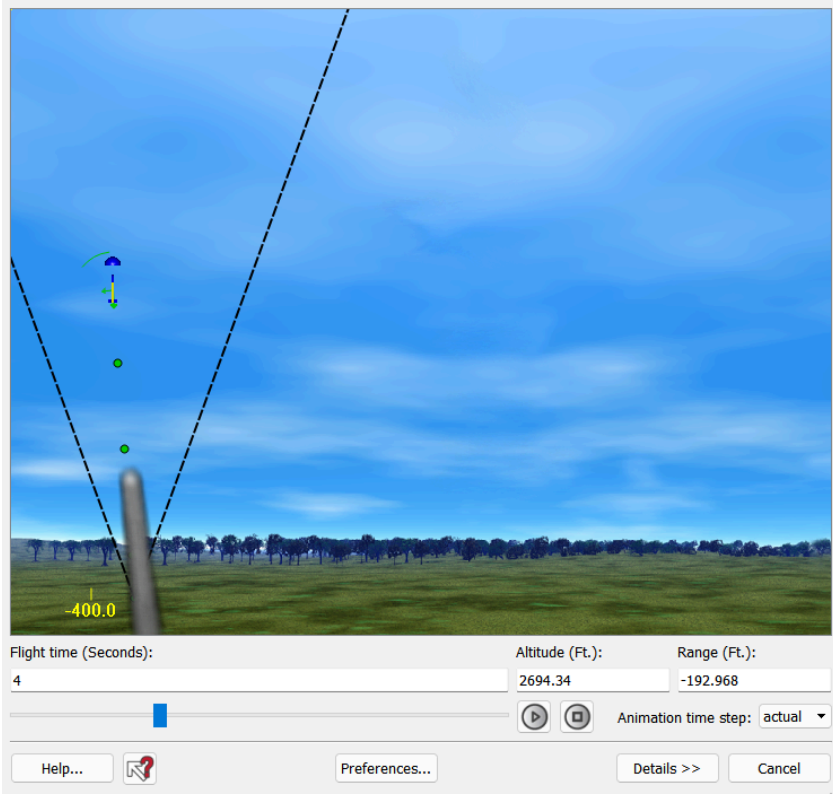
[Graph 2]



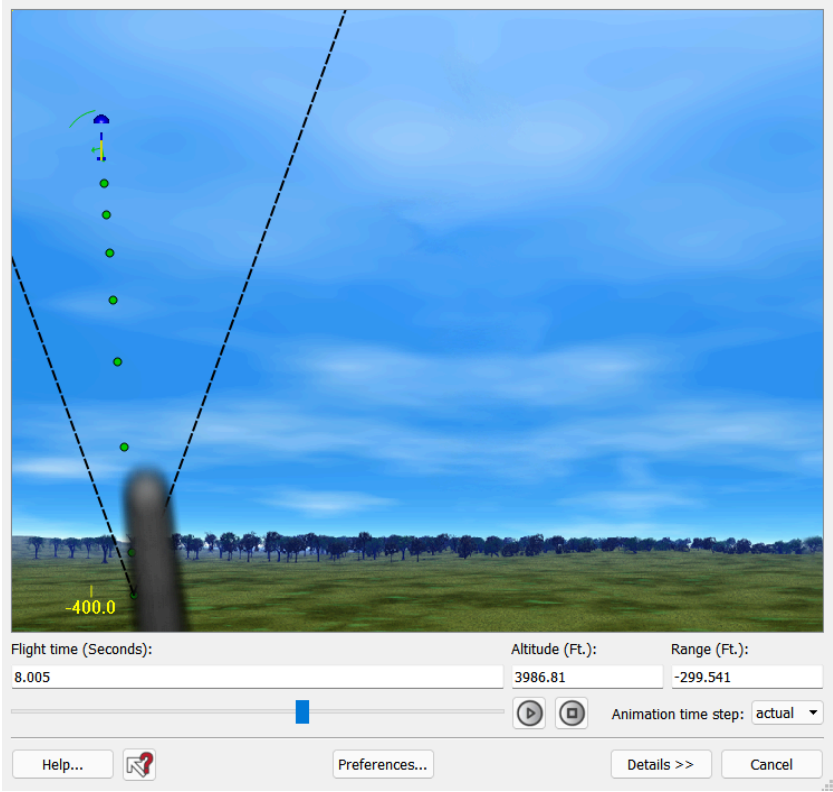
[Graph 3]



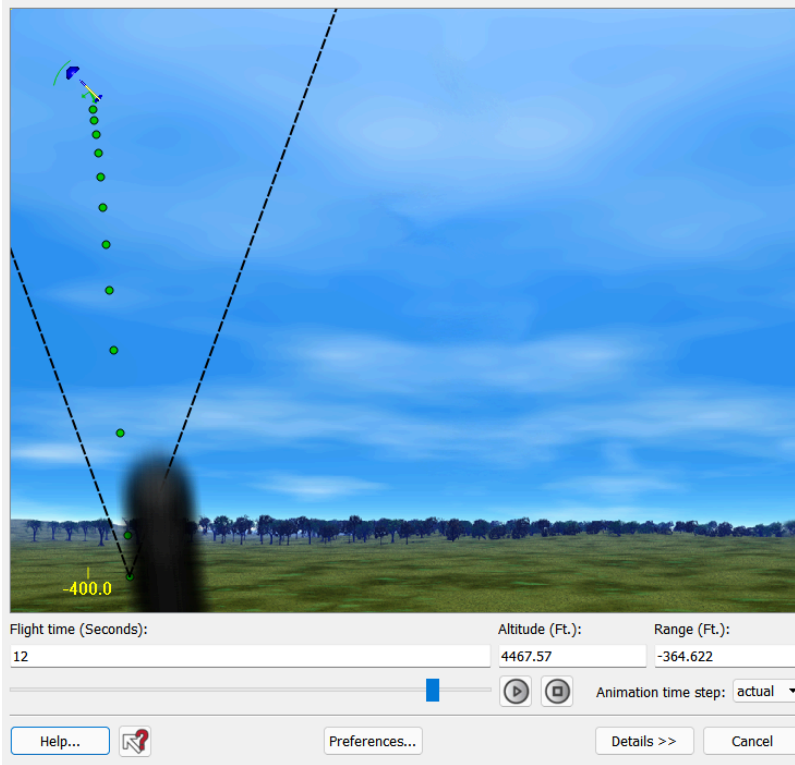
[Graph 4]



[Graph 5]



[Graph 6]



[Graph 7]

- Rocket recovery status:



[Graph 8 (Photos taken during rocket recovery)]

- Unplanned launch conditions: changing launch pad type due to wind conditions.

3.The Recovery.

- The rocket's parachute opening and landing:

As the rocket rose to a certain attitude, its parachute would suddenly open. The yellow parachute caught the wind, creating significant drag to slow the craft's fall. The rocket drifted downward until it softly attached to the ground.

- The recovery status:

The rocket was lying in complete construction and the structure in the range that conforms to the simulation. When recovered, the nose cone, the two body tubes and the fins were complete and undamaged. The two body tubes were separate as planned, with the yellow parachute linked in the middle. According to the rocket, upon recovery, the parachute was deployed successfully during the flight, though the cords were slightly tangled. The surface shows no obvious burn marks or structural damage. As the result, the rocket did not need repair and reconstruction. In conclusion, the rocket was in a good condition and good to use again, which fits the judgment of the launch safety officer.