Madcow Rocketry 4" Patriot - Simulation results

Engine selection

[H123W-6]

Simulation control parameters

- Flight resolution: 800.000000 samples/second
- Descent resolution: 1.000000 samples/second
- Method: Explicit Euler
- End the simulation when the rocket reaches the ground.

Launch conditions

- Altitude: 0.00000 Ft.
- Relative humidity: 50.000 %
- Temperature: 59.000 Deg. F
- Pressure: 29.9139 In.

  Wind speed model: Calm (0-2 MPH)
    - Low wind speed: 0.0000 MPH
    - High wind speed: 2.0000 MPH

  Wind turbulence: Fairly constant speed (0.01)
    - Frequency: 0.010000 rad/second
- Wind starts at altitude: 0.00000 Ft.
- Launch guide angle: 0.000 Deg.
- Latitude: 0.000 Degrees

Launch guide data:

- Launch guide length: 72.0000 In.
- Velocity at launch guide departure: 48.3821 ft/s
- The launch guide was cleared at : 0.240 Seconds
- User specified minimum velocity for stable flight: 43.9993 ft/s
- Minimum velocity for stable flight reached at: 60.0673 In.

Max data values:

- Maximum acceleration:Vertical (y): 224.608 Ft./s/sHorizontal (x): 0.366 Ft./s/sMagnitude: 224.608 Ft./s/s
- Maximum velocity:Vertical (y): 266.7121 ft/s, Horizontal (x): 2.2490 ft/s, Magnitude: 266.7204 ft/s
- Maximum range from launch site: 98.30606 Ft.
- Maximum altitude: 1109.04440 Ft.

Engine ejection charge data:

- Using a delay time of : 6.000 Seconds
- Velocity: 5.9200 ft/s
- Altitude: 1108.52486 Ft.

Recovery system data

- P: Parachute Deployed at : 8.601 Seconds
- Velocity at deployment: 5.9200 ft/s
- Altitude at deployment: 1108.52486 Ft.
- Range at deployment: -11.31792 Ft.

Time data

- Time to burnout: 2.600 Sec.
- Time to apogee: 8.422 Sec.
- Optimal ejection delay: 5.822 Sec.

Landing data

- Successful landing
- Time to landing: 67.979 Sec.
- Range at landing: 98.30606
- Velocity at landing: Vertical: -18.5985 ft/s , Horizontal: 2.2490 ft/s , Magnitude: 18.7339 ft/s

Competition settings

Competition conditions are not in use for this simulation.