Nescorna 4TNC - Simulation results

Engine selection

[C6-3]

Comments

10 deg into wind

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: 2.00 m
- Relative humidity: 30.000 %
- Temperature: 25.000 Deg. C
- Pressure: 759.81 mm

Wind speed model: Slightly breezy (8-14 MPH)

  - Low wind speed: 8.0000 MPH
  - High wind speed: 14.9000 MPH

Wind turbulence: Some variablility (0.04)

  - Frequency: 0.040000 rad/second

- Wind starts at altitude: 0.00 m
- Launch guide angle: -10.000 Deg.
- Latitude: 37.500 Degrees

Launch guide data:

- Launch guide length: 100.000 cm
- Velocity at launch guide departure: 13.9106 m/s
- The launch guide was cleared at : 0.235 Seconds
- User specified minimum velocity for stable flight: 13.4110 m/s
- Minimum velocity for stable flight reached at: 92.949 cm

Max data values:

- Maximum acceleration:Vertical (y): 126.808 m/s/sHorizontal (x): 66.509 m/s/sMagnitude: 128.765 m/s/s
- Maximum velocity:Vertical (y): 50.5964 m/s, Horizontal (x): 4.8304 m/s, Magnitude: 57.4291 m/s
- Maximum range from launch site: 77.28 m
- Maximum altitude: 129.35 m

Engine ejection charge data:

- Using a delay time of : 3.000 Seconds
- Velocity: 15.4672 m/s
- Altitude: 128.90 m

Recovery system data

- P: Parachute Deployed at : 4.860 Seconds
- Velocity at deployment: 15.4672 m/s
- Altitude at deployment: 128.90 m
- Range at deployment: -74.68 m

Time data

- Time to burnout: 1.861 Sec.
- Time to apogee: 5.124 Sec.

- Optimal ejection delay: 3.263 Sec.

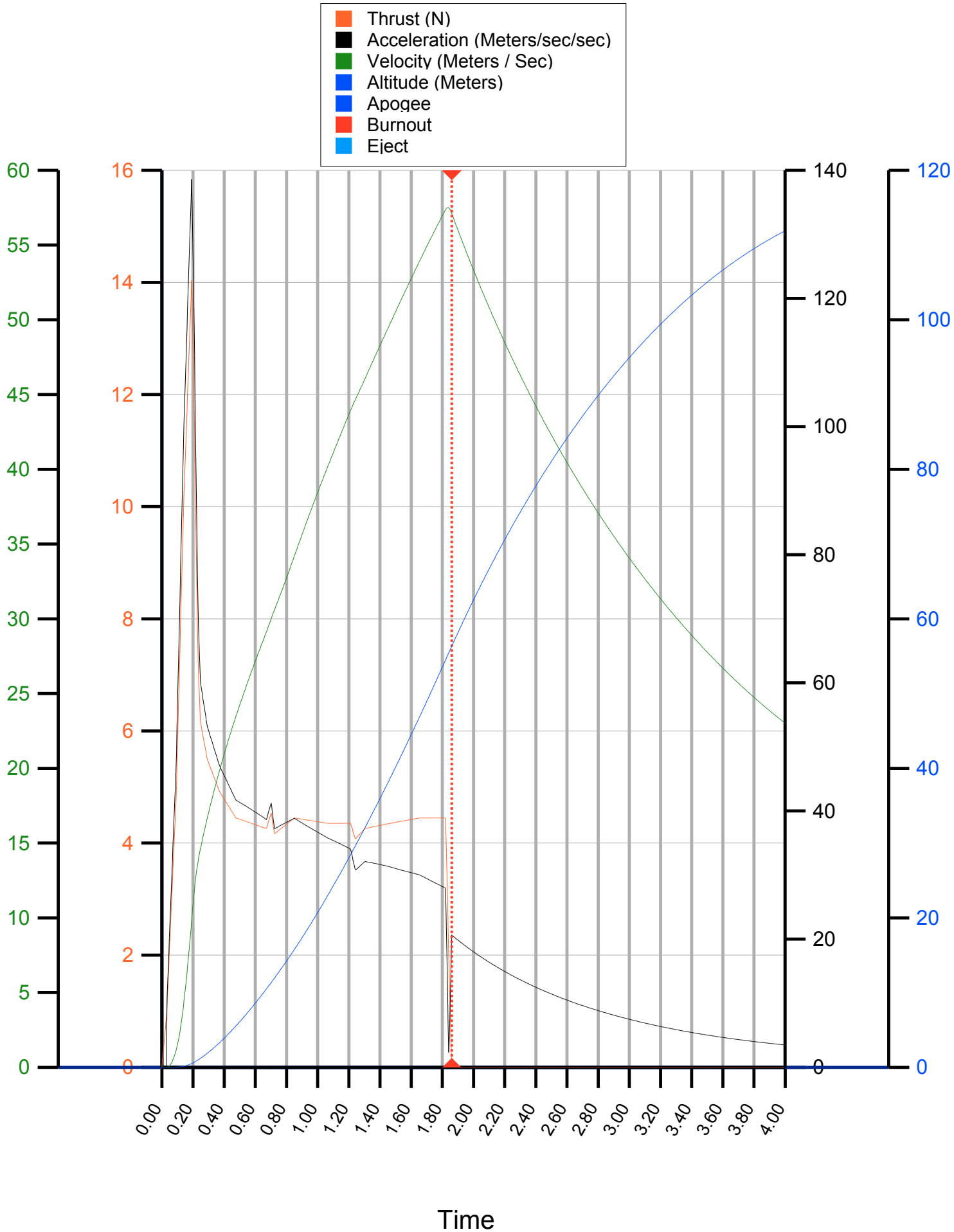
Landing data

- Successful landing
- Time to landing: 26.557 Sec.
- Range at landing: 13.89
- Velocity at landing: Vertical: -6.9383 m/s , Horizontal: 4.8305 m/s , Magnitude: 8.4542 m/s

Competition settings

Competition conditions are not in use for this simulation.

Nescorna 4TNC



Nescorna 4TNC - Simulation results

Engine selection

[B4-2]

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: 2.00 m
- Relative humidity: 30.000 %
- Temperature: 25.000 Deg. C
- Pressure: 759.81 mm

Wind speed model: Calm (0-2 MPH)

- Low wind speed: 0.0000 MPH
- High wind speed: 2.9000 MPH

Wind turbulence: Some variablility (0.04)

- Frequency: 0.040000 rad/second

- Wind starts at altitude: 0.00 m
- Launch guide angle: 0.000 Deg.
- Latitude: 37.500 Degrees

Launch guide data:

- Launch guide length: 100.000 cm
- Velocity at launch guide departure: 13.2205 m/s
- The launch guide was cleared at : 0.213 Seconds
- User specified minimum velocity for stable flight: 13.4110 m/s
- Minimum velocity for stable flight reached at: 106.730 cm

Max data values:

- Maximum acceleration:Vertical (y): 121.190 m/s/sHorizontal (x): 3.321 m/s/sMagnitude: 121.190 m/s/s
- Maximum velocity:Vertical (y): 32.1190 m/s, Horizontal (x): 1.1984 m/s, Magnitude: 32.1822 m/s
- Maximum range from launch site: 7.56 m
- Maximum altitude: 59.03 m

Engine ejection charge data:

- Using a delay time of : 2.000 Seconds
- Velocity: 7.2837 m/s
- Altitude: 57.48 m

Recovery system data

- P: Parachute Deployed at : 3.030 Seconds
- Velocity at deployment: 7.2837 m/s
- Altitude at deployment: 57.48 m
- Range at deployment: -3.56 m

Time data

- Time to burnout: 1.031 Sec.
- Time to apogee: 3.549 Sec.
- Optimal ejection delay: 2.518 Sec.

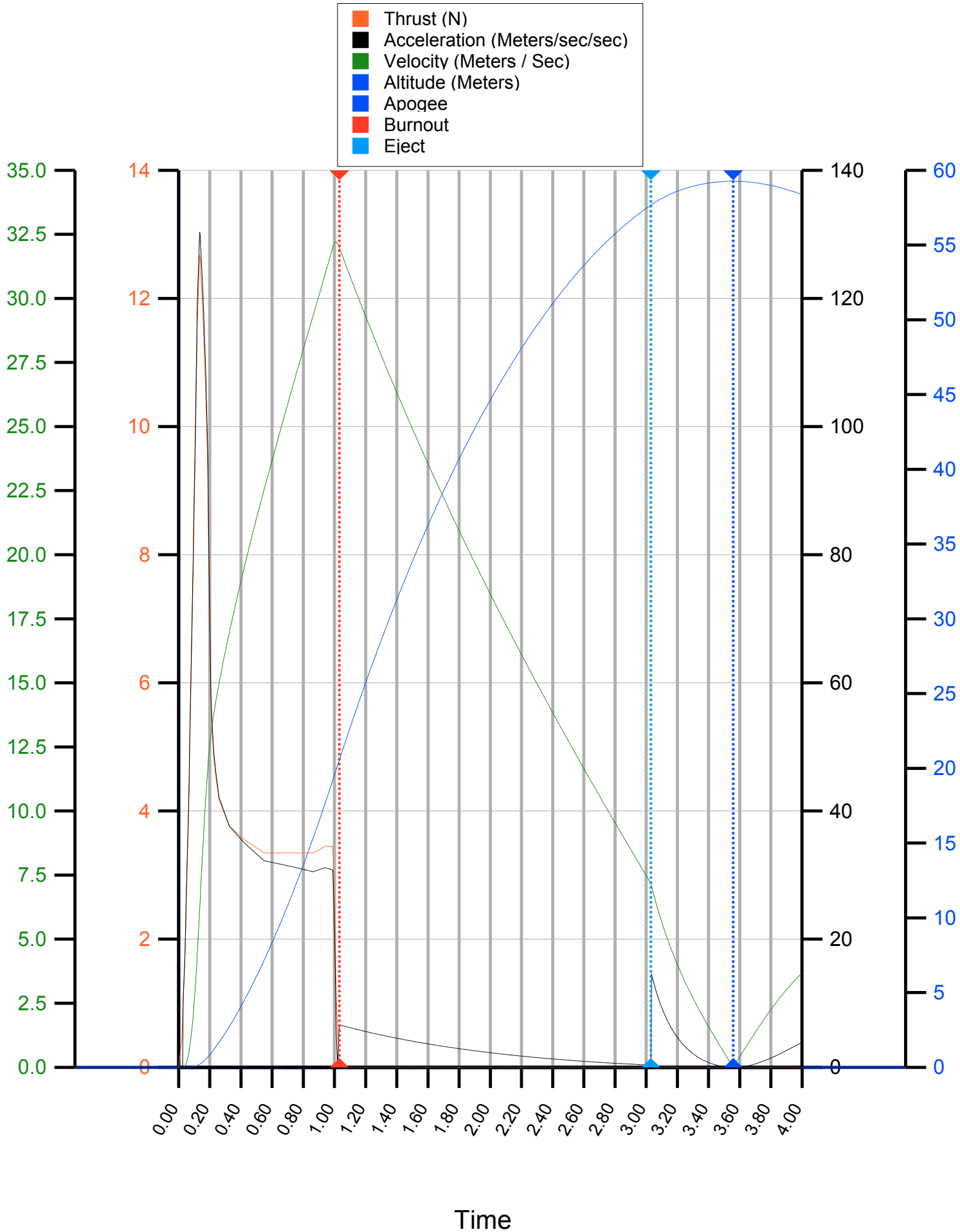
Landing data

- Successful landing
- Time to landing: 14.099 Sec.
- Range at landing: 7.56
- Velocity at landing: Vertical: -5.8154 m/s , Horizontal: 1.0097 m/s , Magnitude: 5.9024 m/s

Competition settings

Competition conditions are not in use for this simulation.

Nescorna 4TNC



Nescorna 4TNC
Length: 55.160 cm , Diameter: 4.166 cm , Span diameter: 7.904 cm
Mass 98.068 g , Selected stage mass 98.068 g
CG: 30.536 cm, CP: 38.063 cm, Margin: 1.81
Engines: [B4-2,]