

Polecat Aerospace Saturn V - Simulation results

Engine selection

[M1297W-None]

Simulation control parameters

- Flight resolution: 800.000000 samples/second
- Descent resolution: 1.000000 samples/second
- Method: Explicit Euler

Launch conditions

- Altitude: 0.00000 Ft.
- Relative humidity: 50.000 %
- Temperature: 85.000 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 Degrees from vertical
- Latitude: 38.000 Degrees

Launch guide data:

- Launch guide length: 80.0000 In.
- Velocity at launch guide departure: 56.2913 ft/s
- The launch guide was cleared at : 0.249 Seconds
- User specified minimum velocity for stable flight: 45.0000 ft/s
- Minimum velocity for stable flight reached at: 51.5433 In.

Max data values:

- Maximum acceleration: Vertical (y): 784.293 gee Horizontal (x): 0.030 gee Magnitude: 784.293 gee
- Maximum velocity: Vertical (y): 633.3104 ft/s Horizontal (x): 2.8612 ft/s Magnitude: 633.5007 ft/s
- Maximum range from launch site: 208.54495 Ft.
- Maximum altitude: 5605.77429 Ft.

Recovery system data

- P: Parachute Deployed at : 35.856 Seconds
- Velocity at deployment: 538.6319 ft/s
- Altitude at deployment: 999.59974 Ft.
- Range at deployment: -168.32579 Ft.
- S: Shock cord Deployed at : 18.871 Seconds
- Velocity at deployment: 10.6048 ft/s
- Altitude at deployment: 5605.77429 Ft.
- Range at deployment: -208.54495 Ft.

Time data

- Time to burnout: 4.170 Sec.
- Time to apogee: 18.871 Sec.
- Optimal ejection delay: 14.701 Sec.

Landing data

- Successful landing
- Time to landing: 86.689 Sec.
- Range at landing: -31.63927
- Velocity at landing: Vertical: -18.9518 ft/s , Horizontal: 2.8612 ft/s , Magnitude: 19.1666 ft/s