**[HW2 CODE OUTPUT]**

--- Numerical Simulation of a Sounding Rocket Flight ---

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rocketType: HW2

Importing Data: This may take a moment...

NOTICE: Holding some values constant on plots after t: 355.2

Plots Displayed **[NEXT PAGE]**

f.

Burnout Time (Real): 60.0 [sec]

Burnout Alt (Real): 35273.8 [m] 115727.5 [ft]

Burnout Vel (Real): 1565.3 [m/s]

g.

Time @ Apogee (Real): 218.1 [sec]

Apogee Alt (Real): 153031.6 [m] 502072.3 [ft]

h.

Time @ Impact (Real): 394.7 [sec]

Max Horiz (Real): 139651.9 [m] 458175.4 [ft]

l.

MATLAB's ode45 numerical integrator chooses its own time step.

https://www.mathworks.com/help/matlab/ref/ode45.html#bu00\_4l\_sep\_shared-tspan

--- Other Interesting Information ---

Total Weight: 1653 pounds

Thrust: 4496 pounds

T/W: 2.718

Isp: 244.6 [sec]

u\_eqivalent: 2400.0 [m/s]

Mass Ratio: 3

Delta V: 2636.7 [m/s]

Max Alt (Real): 153031.6 [m] 502072.3 [ft]

Max Alt (Eq): 261033.4 [m] 856408.7 [ft]

Max Alt (Ideal): 283222.9 [m] 929209.0 [ft]

Max Vert Vel (Real): 1514.4 [m/s]

Max Horz Vel (Real): 402.0 [m/s]

Max Velocity (Real): 1566.8 [m/s]