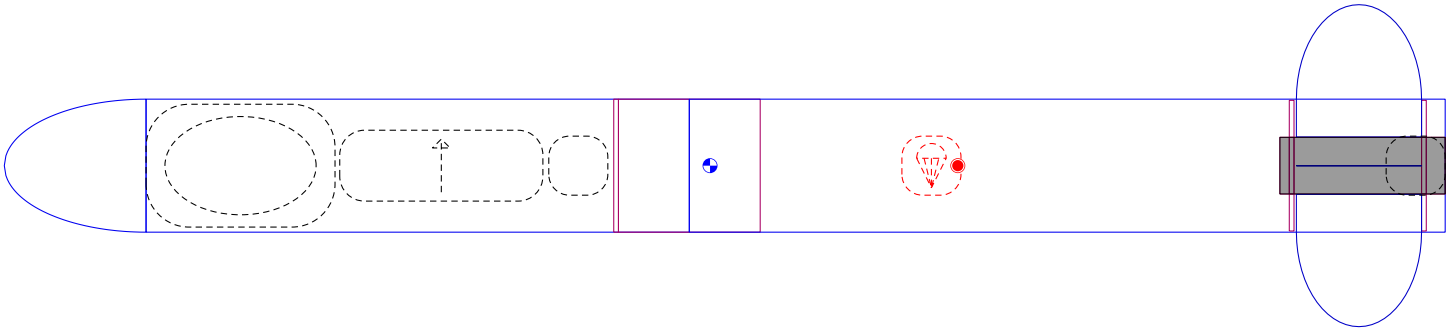


Rocket Design



Rocket
Stages: 1
Mass (with motor): 367 g
Stability: 1.86 cal
CG: 299 mm
CP: 404 mm

E30-7

Altitude	799 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	42.4 s	E30	34.9 N	0.962 s	49 N	33.6 Ns	9.69:1	17.8 g	24/70 mm
Time to Apogee	6.91 s								
Optimum Delay	5.99 s								
Velocity off Pad	68.2 ft/s								
Max Velocity	258 ft/s								
Velocity at Deployment	34.5 ft/s								
Landing Velocity	22.8 ft/s								

E20-7

Altitude	812 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	42.2 s	E20	22.1 N	1.56 s	34.7 N	34.7 Ns	6.12:1	16.2 g	24/65 mm
Time to Apogee	7.21 s								
Optimum Delay	5.47 s								
Velocity off Pad	58.9 ft/s								
Max Velocity	238 ft/s								
Velocity at Deployment	52.2 ft/s								
Landing Velocity	22.9 ft/s								

E15W-7

Altitude	940 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	49 s	E15W	15.9 N	2.51 s	28.8 N	39.9 Ns	4.37:1	20.1 g	24/70 mm
Time to Apogee	7.96 s								
Optimum Delay	5.43 s								
Velocity off Pad	48.4 ft/s								
Max Velocity	238 ft/s								
Velocity at Deployment	59.1 ft/s								
Landing Velocity	22.8 ft/s								

E28-7

Altitude	974 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	50.3 s	E28	34.3 N	1.16 s	50.5 N	39.7 Ns	9.34:1	18.4 g	24/70 mm
Time to Apogee	7.51 s								
Optimum Delay	6.39 s								
Velocity off Pad	70.7 ft/s								
Max Velocity	290 ft/s								
Velocity at Deployment	21.6 ft/s								
Landing Velocity	23 ft/s								

Parts Detail

Sustainer

	Nose	PVC (1.39 g/cm ³)	Ellipsoid	Len: 60 mm	Mass: 40 g
	Body tube	Cardboard (0.68 g/cm ³)	Dia _{in} 56.3 mm Dia _{out} 56.3 mm	Len: 230 mm	Mass: 0 g
	Egg		Dia _{out} 52 mm		Mass: 70 g
	Altimeter		Dia _{out} 30 mm		Mass: 22 g
	Weight		Dia _{out} 25 mm		Mass: 70 g
	Bulkhead	Cardboard (0.68 g/cm ³)	Dia _{out} 56.3 mm	Len: 2 mm	Mass: 3.39 g
	Tube coupler	Cardboard (0.68 g/cm ³)	Dia _{in} 56.3 mm Dia _{out} 56.3 mm	Len: 60 mm	Mass: 4 g
	Parachute	Ripstop nylon (67 g/m ²)	Dia _{out} 432 mm	Len: 25 mm	Mass: 18 g
	Shroud Lines	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)	Lines: 6	Len: 457 mm	
	Body tube	Cardboard (0.68 g/cm ³)	Dia _{in} 52.3 mm Dia _{out} 56.3 mm	Len: 320 mm	Mass: 74.3 g
	Inner Tube	Cardboard (0.68 g/cm ³)	Dia _{in} 23 mm Dia _{out} 24 mm	Len: 70 mm	Mass: 1.76 g
	Centering ring	Cardboard (0.68 g/cm ³)	Dia _{in} 24 mm Dia _{out} 55.3 mm	Len: 2 mm	Mass: 2.65 g
	Centering ring	Cardboard (0.68 g/cm ³)	Dia _{in} 24 mm Dia _{out} 55.3 mm	Len: 2 mm	Mass: 2.65 g
	Elliptical fin set (4)	Balsa (0.17 g/cm ³)	Thick: 3 mm		Mass: 5.12 g
	Motor Ring		Dia _{out} 25 mm		Mass: 6 g

