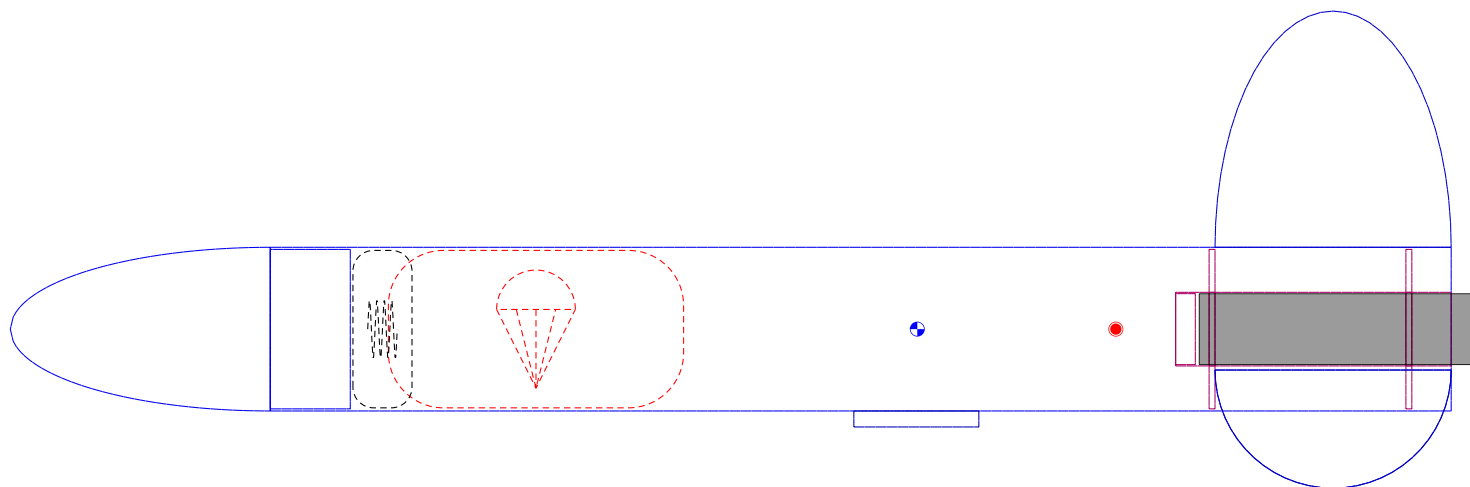


Rocket Design



R3 HoneyBee---BT60 Upscale

Stages: 1

Mass (with motor): 46.8 g

Stability: 1.21 cal

CG: 230 mm

CP: 281 mm

A8-3

Altitude	142 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Flight Time	3 s	A8	5.22 N	0.357 s	11.1 N	1.87 Ns	11.38:1	6.3 g	18/70 mm
Time to Apogee	2.9 s								
Optimum Delay	2.62 s								
Velocity off Pad	15.8 mph								
Max Velocity	82.2 mph								
Velocity at Deployment	N/A								
Landing Velocity	N/A								

B6-4

Altitude	326 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Flight Time	4.12 s	B6	5.23 N	0.826 s	12.1 N	4.33 Ns	10.26:1	5.6 g	18/70 mm
Time to Apogee	4.07 s								
Optimum Delay	3.26 s								
Velocity off Pad	44.1 mph								
Max Velocity	136 mph								
Velocity at Deployment	N/A								
Landing Velocity	N/A								

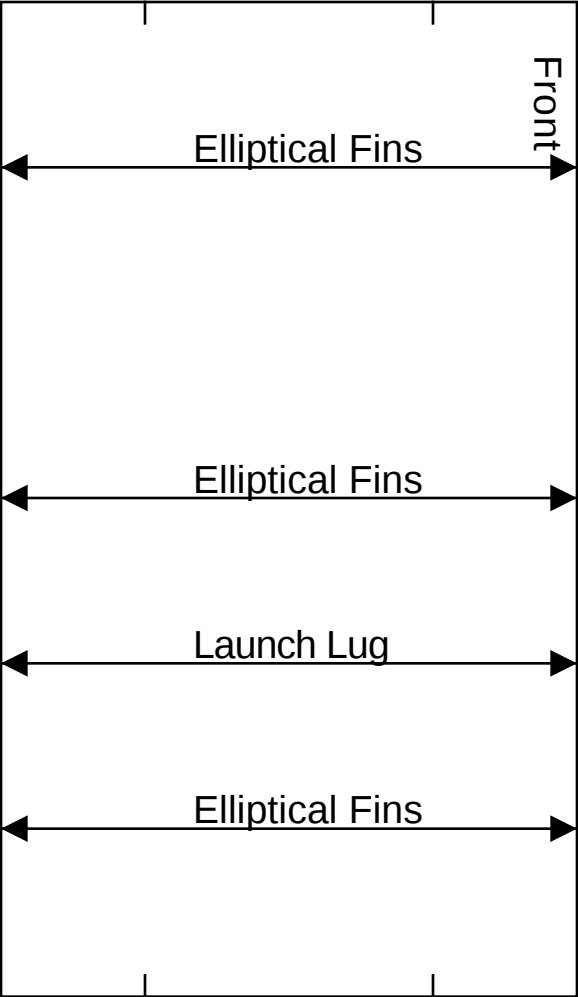
C6-3

Altitude	655 ft	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Flight Time	5.37 s	C6	4.98 N	2.01 s	11.6 N	10 Ns	9.01:1	12.5 g	18/70 mm
Time to Apogee	5.27 s								
Optimum Delay	3.42 s								
Velocity off Pad	39.4 mph								
Max Velocity	182 mph								
Velocity at Deployment	8.91 mph								
Landing Velocity	N/A								

Parts Detail

Main

	Nosecone SEMROC Astronautics BNC-60MS	Balsa (0.069 g/cm ³)	Ellipsoid	Len: 66 mm	Mass: 5.95 g
	Body Tube Estes EST 3089	Paper (0.609 g/cm ³)	Dia_{in} 40.5 mm Dia_{out} 41.6 mm	Len: 300 mm	Mass: 12.6 g
	Shock cord	Thread (heavy-duty) (0.3 g/m)		Len: 1219 mm	Mass: 0.366 g
	Parachute	Ripstop nylon (67 g/m ²)	Dia_{out} 305 mm	Len: 75 mm	Mass: 8.13 g
	Shroud Lines	Elastic cord (round 2 mm, 1/16 in) (1.8 g/m)	Lines: 6	Len: 300 mm	
	Launch Lug Estes ESTES 1/8	Paper (0.609 g/cm ³)	Dia_{in} 3.56 mm Dia_{out} 4.06 mm	Len: 31.8 mm	Mass: 0.059 g
	Centering ring	Basswood (0.5 g/cm ³)	Dia_{in} 18.7 mm Dia_{out} 40.5 mm	Len: 1.5 mm	Mass: 0.761 g
	Centering ring	Basswood (0.5 g/cm ³)	Dia_{in} 18.7 mm Dia_{out} 40.5 mm	Len: 1.5 mm	Mass: 0.761 g
	Inner Tube Estes EST 3085	Paper (0.609 g/cm ³)	Dia_{in} 18 mm Dia_{out} 18.7 mm	Len: 70 mm	Mass: 0.812 g
	Engine Block	Cardboard (0.68 g/cm ³)	Dia_{in} 18 mm Dia_{out} 18 mm	Len: 5 mm	Mass: 0 g
	Elliptical Fins (3)	Balsa (0.17 g/cm ³)	Thick: 3 mm		Mass: 4.32 g



in cm

