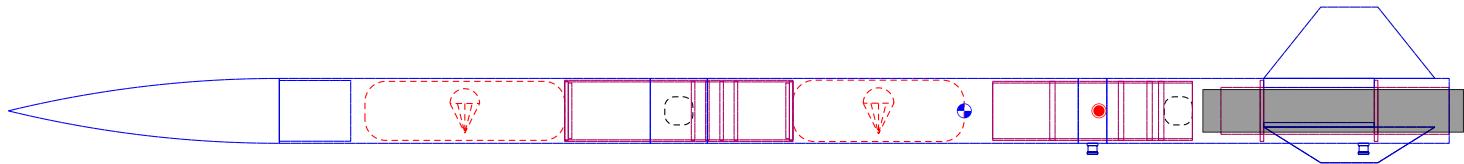


# Rocket Design



L1 Fun H without Ext

Stages: 1

Mass (with motor): 1628 g

Stability: 2.08 cal / 9.35 %

CG: 33.506 in

CP: 38.225 in

## G67R-6

		Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Altitude	892 ft								
Flight Time	30.7 s	G67R	15.9 lbf	1.6 s	20.5 lbf	113 Ns	5.41:1	57.6 g	1.5/4.17 in
Time to Apogee	8.07 s								
Optimum Delay	6.42 s								
Velocity off Pad	33.8 ft/s								
Max Velocity	227 ft/s								
Velocity at Deployment	49.2 ft/s								
Landing Velocity	23.2 ft/s								

## H123W-10

		Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Altitude	2790 ft								
Flight Time	72.6 s	H123W	23.4 lbf	2.25 s	34.3 lbf	235 Ns	7.49:1	126 g	1.5/5.98 in
Time to Apogee	13 s								
Optimum Delay	N/A								
Velocity off Pad	44.1 ft/s								
Max Velocity	457 ft/s								
Velocity at Deployment	49.5 ft/s								
Landing Velocity	23.3 ft/s								

## I59WN-12



## Parts Detail

Stage: Stage

	Nose cone	Polypropylene, bulk (0.547 oz/in <sup>3</sup> )	Ogive	Len: 9.5 in	Mass: 109 g
	Main Tube 13" Always Ready Rocketry BT_2.15_48	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.15 in Dia <sub>out</sub> 2.274 in	Len: 13 in	Mass: 106 g
	Parachute, 28 in., 1.9oz nylon, 10 lines, spill hole	Nylon fabric, ripstop, 1.9 oz actual (0.193 oz/ft <sup>2</sup> )	Dia <sub>out</sub> 28 in	Len: 7 in	Mass: 48.3 g
	Shroud Lines	Nylon Paracord, 275 lb, 2.38 mm dia. (0.038 oz/ft)	Lines: 10	Len: 28 in	
	Switchband 2" Always Ready Rocketry BT_2.15_48	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.15 in Dia <sub>out</sub> 2.274 in	Len: 2 in	Mass: 16.3 g
	AV Bay 2" x 8"	Blue tube (0.751 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.03 in Dia <sub>out</sub> 2.14 in	Len: 8 in	Mass: 61.4 g
	AV Lid Fwd Outer	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	AV Lid Fwd Inner	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 1.95 in	Len: 0.125 in	Mass: 4.44 g
	Mass Component		Dia <sub>out</sub> 0.984 in		Mass: 256 g
	AV Plate 1	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	AV Plate 2	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	AV Plate 3	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	AV Plate 4	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	AV Lid Aft Inner	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 1.95 in	Len: 0.125 in	Mass: 4.44 g
	AV Lid Aft Outer	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.125 in	Mass: 5 g
	Drogue tube 13" Always Ready Rocketry BT_2.15_48	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.15 in Dia <sub>out</sub> 2.274 in	Len: 13 in	Mass: 106 g



Parachute, 15 in., nylon, 6 lines	Nylon fabric, ripstop, 1.7 oz actual (0.173 oz/ft <sup>2</sup> )	Dia <sub>out</sub> 15 in	Len: 6 in	Mass: 9.67 g
Shroud Lines	Nylon	Lines: 6	Len: 15 in	
Top Flight Recovery PAR-15	Paracord, 110 lb, 1/16 in. dia. (0.017 oz/ft)			
Banded Baffle 1"	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.15 in Dia <sub>out</sub> 2.274 in	Len: 1 in	Mass: 8.14 g
Always Ready Rocketry BT_2.15_48				
Baffle 2" x 7"	Blue tube (0.751 oz/in <sup>3</sup> )	Dia <sub>in</sub> 1.949 in Dia <sub>out</sub> 2.07 in	Len: 7 in	Mass: 57 g
Bulkhead	Birch (0.394 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.187 in	Mass: 7.04 g
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Bulkhead	Birch (0.394 oz/in <sup>3</sup> )	Dia <sub>out</sub> 2.07 in	Len: 0.187 in	Mass: 7.04 g
kg	Mass Component	Dia <sub>out</sub> 0.984 in		Mass: 157 g
Fin can 12"	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 2.15 in Dia <sub>out</sub> 2.274 in	Len: 12 in	Mass: 97.7 g
Always Ready Rocketry BT_2.15_48				
Rail Button	Delrin (0.821 oz/in <sup>3</sup> )		Len: 0 in	Mass: 1.65 g
Blue Tube 7" MMT	Vulcanized Fiber (0.667 oz/in <sup>3</sup> )	Dia <sub>in</sub> 1.644 in Dia <sub>out</sub> 1.644 in	Len: 8 in	Mass: 0 g
Centering ring	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>in</sub> 1.64 in Dia <sub>out</sub> 2.14 in	Len: 0.125 in	Mass: 2.2 g
Centering ring	Aircraft plywood (LOC) (0.419 oz/in <sup>3</sup> )	Dia <sub>in</sub> 1.64 in Dia <sub>out</sub> 2.14 in	Len: 0.125 in	Mass: 2.2 g
Trapezoidal Fin Set (3)	Plywood (birch) (0.364 oz/in <sup>3</sup> )	Thick: 0.118 in		Mass: 35.6 g