

Revised 6/4/06	PLEASE READ THIS VERY IMPORTANT INFORMATION!		
— Data was produced from RockSim simulation software with 500' elevation launch site, 70% humidity, 75 deg. F, 0 mph wind, 0 deg launch rod angle.			
— Aerotech motor propellants are as follows re: their suffix: J is Black Jack, W is White Lightning, T is Blue Thunder, R is Redline.			
— Altitude and Optimal Delay information displayed as "feet,seconds".			
EXAMPLE: AMRAAM-2.1, G75J: "2712,10.48" means 2712 feet peak altitude, 10.48 second optimum delay time			
— No entry means the motor is not recommended, because it is not powerful enough, or will not physically fit the kit, etc.			
— User is responsible for checking CG/CP relationship, speed off launch rod/stability, adequacy of airframe for the motor used, etc.			
— All of these flights were done from a 96" launch rod and achieved 35-40fps minimum by the end of the 96" rod; if you use a shorter rod you must recheck!!!			
— These are estimates/simulations only, NOT GUARANTEES OF SUITABILITY OR PERFORMANCE . This information is to be used at the flyer's risk and as a guideline only. It is up to the flyer to decide if the motor and kit combination is appropriate for their situation. If there are any questions about the motor, contact the motor manufacturer for assistance.			
— It is our recommendation that, in most cases, a delay shown for the motor in question should be "delayed down". A shorter delay should be chosen. This is primarily due to the fact that these simulations are run under "perfect" conditions, and with a rocket weight as PML builds the kit. For example, if the chart shows a 7.1 second delay as optimum and the motor offers a 5 and 7 second delay, you might wish to choose the 5-second delay. In our experience, simulations tend to overestimate the "real-world" delay by about 10-15%. Your rocket may weigh more than the one used in the simulation, as build techniques vary and we tend to "build light". Also, actual flight conditions such as winds, temperature and humidity differences, and especially motor performance in the real world (as opposed to the "perfect" motor used by RockSim) can and WILL cause differences in your actual flight from these predictions. Remember, this information is a GUIDE, not a GOSPEL. The flyer must use their own judgement and experience, and/or the assistance of other local fliers known to have experience, whenever flying a rocket of any kind.			
— One thing that rocketeers seem to forget is that if a certain motor doesn't have a delay available that seems right, you can choose a different motor that has a delay available that's closer. There are many, many motors available, and if one combination doesn't work, don't fret over how to change the delay, pick another motor!			
1234, 56.78	Yellow means this motor/rocket combination requires modifications (strengthening). This motor is not recommended for the stock kit. Consult the <i>Kit Strengthening</i> section of our Airframes FAQ for details on what to do to strengthen the kit.		
1234, 56.78	Bold type means this kit requires modifications to fit the super-long motor (usually the use of an Extended Kwik Switch and/or additional airframe length)		
1234, 56.78	Yellow & bold type means this motor not only requires strengthening modifications but also requires special modifications to fit the super-long motor.		
1234, 56.78	Blue means this motor/rocket combination requires absolutely top-notch construction to fly successfully. The stock kit can fly on this motor, but the following items MUST be done, and done properly, to ensure a solid and strong rocket:		
	— Instructions must be followed to the letter		
	— The directions about sanding all parts to be bonded are critical. We cannot overemphasize how much this adds to strength.		
	— Good, thick, quality epoxy fillets, especially on the fin to motor mount joint and the fin to airframe ID joint.		
	— We STRONGLY recommend the use of our Two-Part Adhesive Foam in the fin section; see the Adhesives website page		
	— Pressure relief holes should be added to the kit as described in our FAQ.		
	— Payload sections and nosecones should be very snug fits. "Sloppy" fits are rocket-killers under high stresses.		
	— A rocket that has been repaired should NEVER be flown on this motor combination. Only "original-strength" rockets should be used.		
1234, 56.78	Blue & bold type means this motor not only requires the build techniques above but also requires special modifications to fit the super-long motor.		

Ellis Mtn 38mm I-J Casing & Length	38-390 9.0"	38-520 11.0"	38-650 13"	38-780 15"	38-910 17"									
Motor Burn Time>	2.67 sec.	3.25 sec.	2.83 sec.	2.90 sec.	2.75 sec.									
Re-load kit	I150EM	I160EM	I230EM	J270EM	J330EM									
1/4-Scale Patriot, 38	3085,10.48	3916,11.18	4748,12.29	5306,12.77	5784,13.23									
AGM256 Pit Bull, 38	<i>RockSim does not have EM38's listed as of 6/4/06</i>													
AMRAAM-3, 38KS	3175,10.97	4103,11.87	5069,13.18	5714,13.76	6295,14.33									
AMRAAM-4, 38KS	1939,8.57	2632,9.52	3382,10.88	3883,11.45	4440,12.14									
AMRAAM-4 w/CPR3k,38KS	1283,7.05	1915,8.36	2722,10.26	3256,11.08	3885,12.06									
Andromeda, ADPTR-54/38														
Ariel, 38KS	3472,11.60	4516,12.63	5617,14.07	6327,14.70	6932,15.27									
Black Brant VB, 38	4871,13.07	5986,13.78	6745,14.61	7208,14.96	7597,15.31									
Black Brant X, 38KS	1308,7.09	1941,8.37	2740,10.22	3270,11.02	3892,11.98									
Bullpuppy, 38	4731,12.87	5806,13.55	6521,14.34	6953,14.66	7310,14.99									
Callisto, 38	5877,14.16	6867,14.62	7498,15.30	7962,15.67	8364,16.04									
Cirrus Dart *, 38	7749,16.41	8960,16.97	10273,18.22	11307,18.91	12373,19.68									
Cygnus, ADPTR-54/38	2601,10.47	3648,11.99	4901,14.03	5751,15.00	6747,16.14									
Delta, 38	3179,11.36	4265,12.62	5465,14.31	6268,15.11	7087,15.93									
D Tomahawk, 38	3073,10.75	3978,11.64	4919,12.94	5549,13.51	6142,14.09									
Eagle, ADPTR-54/38	2156,9.39	3047,10.78	4106,12.67	4821,13.54	5655,14.57									
Eclipse A, 38KS	1628,7.96	2347,9.22	3167,10.89	3725,11.63	4366,12.51									
Eclipse B, (2) 38	3815,12.05	4902,13.02	6026,14.40	6650,14.92	7185,15.40									
Endeavour, 38KS	2211,9.20	2960,10.16	3790,11.56	4344,12.16	4961,12.89									
Explorer, 38	4947,13.22	6080,13.96	6849,14.79	7320,15.14	7716,15.50									
Gamma, 38	4059,12.87	5355,14.19	6760,15.93	7554,16.62	8249,17.25									
Hydra, 38	2953,10.82	3892,11.87	4906,13.35	5582,14.01	6311,14.76									
Intruder, 38	3191,11.02	4132,11.94	5114,13.28	5770,13.87	6361,14.45									
Io, 38	6176,14.40	7136,14.80	7747,15.47	8226,15.86	8697,16.28									
Ion, 38	4332,13.04	5578,14.15	6821,15.60	7459,16.11	8017,16.60									
Little Lunar Express, 38	3398,11.73	4502,12.94	5704,14.58	6504,15.34	7228,16.04									
Lunar Express, 38KS			1884,8.66	2415,9.79	3043,11.08									
Matrix, 38	2895,10.31	3704,11.06	4528,12.22	5081,12.72	5632,13.27									
Miranda, 38KS	3360,11.37	4357,12.34	5402,13.73	6089,14.34	6678,14.90									
MR-1, 38	<i>RockSim does not have EM38's listed as of 6/4/06</i>													
Nimbus, ADPTR-54/38	3420,11.81	4570,13.10	5837,14.82	6680,15.63	7454,16.39									
Orion, 38	2797,10.58	3771,11.77	4855,13.41	5578,14.15	6396,15.02									
Phantom or X-Calibur, 38	5048,13.44	6236,14.23	7042,15.10	7528,15.47	7937,15.83									
Phobos, 38	5088,13.51	6269,14.29	7063,15.15	7545,15.51	7950,15.87									
Pterodactyl Jr., 38	3228,10.14	3966,10.58	4656,11.43	5058,11.73	5385,12.04									
Quantum Leap	(SEE TWO-STAGE DATA)													
Quasar, 38KS	4163,12.51	5292,13.44	6380,14.72	6945,15.16	7432,15.59									
Small Endeavour, 38	4834,13.02	5934,13.72	6682,14.54	7138,14.89	7521,15.23									
Stratus *, 38	7252,16.34	8408,16.91	9169,17.68	9782,18.16	10432,18.69									
Sudden Rush, 38KS	2952,10.98	3997,12.27	5172,14.01	5956,14.81	6832,15.73									
Tethys, 38KS	2984,10.57	3869,11.45	4792,12.74	5408,13.30	6020,13.91									
Thunder & Lightning, 38	(SEE TWO-STAGE DATA)													
X-Calibur (see Phantom)														

*The Cirrus and Stratus are specialized super-high performance kits and should only be used by experienced high-power fliers.