

High Power Rocket Checklist -Updated Jan 2005



Use Construction check after prepping recovery, avionics, and reloads. Use Flight Check at the Safety

Construction Check

Special Instructions.....Checked

- In all cases, insure safety of any non-standard components and procedures. Check Manufacturers instructions when needed.

Flight Planning

- Use computer simulations, tables on reverse
- Plan desired altitude and drift distance
- Analyze both normal and ballistic scenarios.

Fins and Lugs.....Secure and Aligned

- Insure proper positioning of launch guides.

Body tubeGood condition

Motor Mount..... Secure

- Motor retention deviceCheck general condition,
- will not deflect motor thrust.

Reloadable motors.....Check

- Check reload motor for proper build up (O-rings!).

-Eject. Charge...Installed

- Cessaroni.....case installed

Recovery System.....Checked

- Shock cord, recovery systems Securely attached.
- Shock Cord..... Not cracked, burned, or frayed.
- Shroud linesNot burned or tangled.
- Hardware (snap swivels, screw eyes, etc.)...Check.
- Sufficiently strong to withstand recovery loads.
- Shear pins.....Installed for Main 'chute compartment
- Insure drogue ejection will not cause main to deploy
(Long, 'metered' shock cord, proper ejection charge)

Parachute Protection..... Installed

- Baffle system, piston, or fireproof material installed.

Electronics Bay (as installed).....Checked

- Avionics.....Initially disarmed
(use "Arm Before Flight" reminder flag)
- Bay area properly vented, wires don't cover any ports.
- Drogue and main wiringChecked
- Hardware and electrical connections..... Secured
against acceleration forces.
- Mach lock-outCheck settings if appropriate.
- Batteries..... Charged
- Ejection charges.....Loaded – See chart on back.

Nose Cone, Couplers.....Proper fit

- Nose cone, stage, or payload couplersCheck

Flight Check (Safety Check Officer)

Construction Check.....Insure Complete

- SCO may wish to question any part of the Construction Check

CertificationCheck flier's certification

Flight PlanChecked

- Check proper motor impulse for safe flight (see charts).
- Insure flight will not bust waiver, discuss recovery issues.
- Cloud ceilings.....Adequate for proposed flight
- Winds.....Consider drift distance

CG/CP.....Checked

- Check for rocket stability

Motor InstallationSecure

- The motor must not be able to move for or aft in mount
- Igniterscheck for cracks and flaws in pyrogen.
- If Clustering:
 - Insure that adequate electrical current will reach igniters
 - All igniters must touch the propellant, and have no shorts
 - Insure thrust symmetry
- Staging or Airstarts:
 - Check staging delay - less than one second recommended.

AvionicsCheck

- Arm on pad - Check continuity

Pad Check (RSO or Pad Manager).....Complete

- ControllerCheck Disarmed
- Launch PadStable and adequate size for rocket flow
-Insure proper clearance from launch controller/spectators
- Launch Guide.....Rocket moves smoothly - clean as necessary
- Igniter clipsCheck clean and Leads secure to pad.

Pre Launch Check (RSO).....Complete

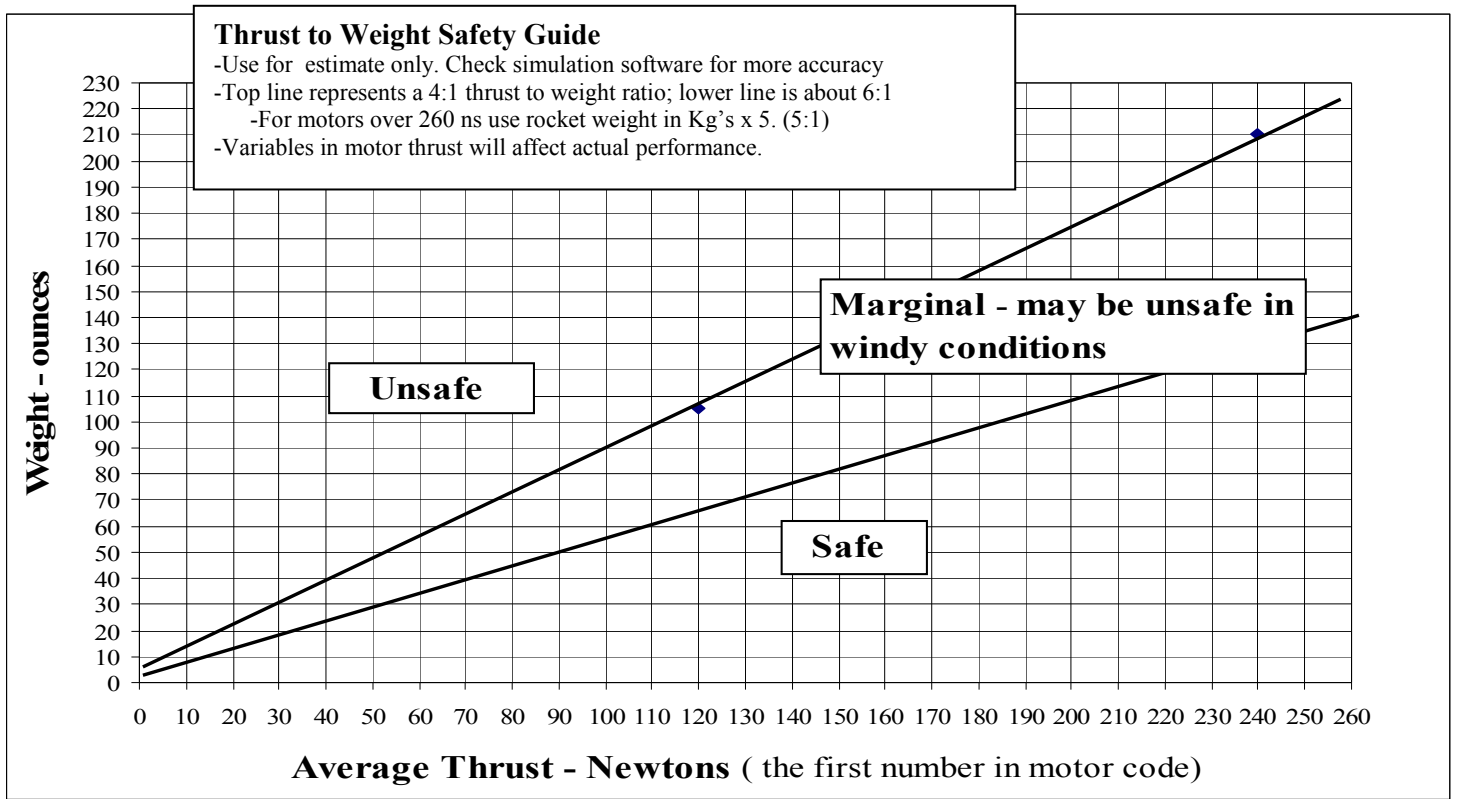
- Avionics.....Armed.
- Look and ListenCheck for aircraft.
- Flight Witnesses / SpottersPresent.

Launch (LCO).....Announce

- Ensure all spectators are aware of launch
 - Give a LOUD countdown, 5..4..3..2..1..Launch!
 - Monitor flight path; call loud HEADS UP for any
rockets approaching prep area or spectators
- Disarm controller, place cap on launch rods

Misfire procedures (LCO).....Review

- Wait a minimum of one minute
- Disarm launch controller and avionics if present
- Remove failed igniter and motor if necessary



Descent Rate Guide - Assuming a parachute Cd of 1.5

Parachute Size (Domed chutes may have higher Cd)

Rocket weight	5"	10"	20"	30"	40"	50"	60"	70"
453g - 1lb.....	64	32	16	10fps				
906g - 2lbs.....	90	46	13	15	10fps			
2.2kg - 5lbs.....	72	36	24	18	15fps			
4.5kg - 10lbs.....	99	50	34	25	20	17fps		
7.7kg - 15lbs.....	62	42	31	25	21	18fps		

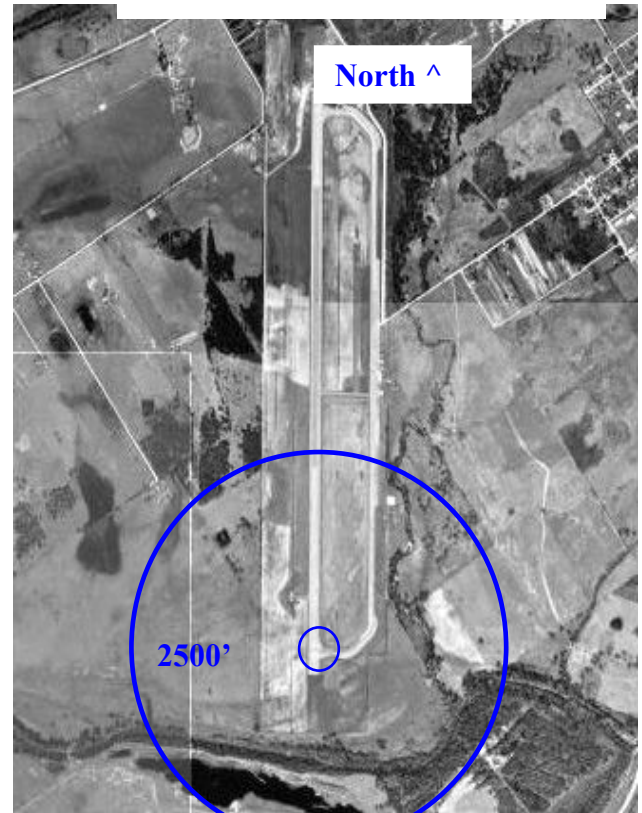
Wind drift distance per 1000' altitude

-Be sure to account for higher winds aloft!

Descent Rate

Wind	15fps	20fps	25fps	70fps
7 mph	685'	510'	410'	145'
11 mph	1075'	800'	645'	230'
15 mph	1460'	1100'	880'	315'
20mph	1935'	1465'	1170'	420'

Hearne Airport launch site



Ejection Charge Sizing Chart - 8PSI

(Grams 4f powder)

- Use 8 PSI for drogue ejection
 Suggested use - twice this amount for main ejection

Tube diameter	Compartment length			
	12"	18"	24"	48"
3"	.35g	.53g	.7g	1.4g
4"	.62g	.93g	1.2g	2.5g
6"	1.4g	2.1g	2.8g	5.6g
7.5"	2.2g	3.3g	4.4g	8.8g