

Pre-Launch Checklist

This is the pre-launch checklist as required as part of the Level 3 procedures. This checklist is to be used on launch day while preparing the Level 3 rocket for its certification flight.

Electronics

Note: All electronics devices must remain in an unarmed mode until rocket is on pad ready to launch.

Pyrotechnics, drogue

- Prepare aft deployment pyrotechnic device and ready for installation into rocket.
- Load aft charge into rocket, insure at all times the devices are safe until final launch readiness.
- Connect aft pyrotechnic leads to electronic deployment devices drogue chute connections.
- Utilizing external disarming mechanisms to insure all electronically discharged pyrotechnics are disabled until final launch readiness.

Pyrotechnics, main

- Prepare forward deployment pyrotechnic device and ready for installation into rocket.
- Load forward charge into rocket, insure at all times the devices are safe until final launch readiness.
- Connect forward pyrotechnic leads to electronic deployment devices main chute connections.
- Utilizing external disarming mechanisms to insure all electronically discharged pyrotechnics are disabled until final launch readiness.

Prepare avionics #1

- Be sure all arming switches are off.
- Ohmmeter test of *NEW* battery under load
- Install battery in altimeter.
- Secure battery in place with Missile Works built in positive battery retention system.
- Altimeter properly programmed and verified.
- Ready avionics bay for altimeter.
- Install altimeter on avionics sub panel.

Prepare avionics #2

- Be sure all arming switches are off.
- Ohmmeter test of *NEW* battery under load
- Install battery in battery retainer.
- Secure battery in place with (2) wire ties minimum.
- Mini ALT altimeter properly programmed and verified.
- Ready avionics bay for altimeter.
- Install altimeter on avionics sub panel.

Note: All electronics devices must remain in an unarmed mode until rocket is on pad ready to launch.

Recovery System Preparation

Drogue Chute:

- Check shock cords for cuts, burns, and tangles.
- Check all shroud lines -- no tangles.
- Check drogue chute for tears and burns.
- *Check all connections. Insure all devices are in good condition and properly secured:*
 - Avionics bay shock cord to drogue
 - Booster shock cord to drogue
- *Pack drogue chute, keep lines even and straight.*
 - Fold drogue chute.
 - Insure shroud lines are free from tangles.
 - Insure all quick links are secure.
 - Insert ejection charge protection.
 - Insert drogue chute into aft recovery compartment.

Main Chute:

- Check shock cords for cuts, burns, and tangles.
- Check all shroud lines -- no tangles.
- Check main chute for tears and burns.
- *Check all connections. Insure all devices are in good condition and properly secured:*
 - Nose Cone shock cord to main
 - Closed loop eyebolt Loctite ® secure to nose cone.
 - Avionics bay shock cord to main
- *Pack main chute, keep lines even and straight.*
 - Fold main chute.
 - Insure shroud lines are free from tangles.
 - Insure all quick links are secure.
 - Insert ejection charge protection.
 - Insert main chute into forward recovery compartment

Motor Preparation

Prepare Motor

- Prepare motor per manufacturer's instructions for launch.

Motor Installation

- Install motor.
- Install motor retaining devices.
- Install vent tube.
- Insure all electronic deployment devices are in the non-dischargeable safe mode.

Final Launch Preparations

Prepare Fill-Stem Assembly and Igniter

- Mount igniter to fill stem per manufacturer's recommendations. Be sure it is secure.
- Secure igniter in position
- Loosen fill stem assembly for final adjustment to fit rocket vehicle.
- Assure that launcher is not hot. Assure that key IS NOT remote device and that arming switch is off.
- Attach leads to ignition device.
- Be sure all connectors are clean.
- Be sure they don't touch each other or that circuit is not grounded by contact with metal parts.

Load Rocket on Pad

- Prepare launch pad.
- Load rocket on launch rail.
- Adjust fill stem assembly to fit the M grain and rocket.
- Insure fill stem seats inside if injector bell of motor.
- Once seated, tighten fill stem assembly and install wire retention straps to fuel grain and fill stem assembly.
- Raise rocket into position and adjust launch angle for safe lift-off.

Final Launch Sequence

- Arm all devices for launch.
- Insure Flight Witnesses are in place and ready for launch.
- Begin fill sequence.
- Signal LCO & RSO that venting has been spotted, and that the rocket is go for launch.

Misfire Procedures

- Dump nitrous fill.
- Safe all pyrotechnic to pre-launch mode.
- Resume checklist at "Final Launch Preparations/Prepare Igniters."

Post-Recovery Checklist

This is the post-flight checklist as required as part of the Certification Package. This checklist includes steps required to ensure the rocket is in a safe condition after completion of a flight.

Normal Post Flight Recovery

- Check for non-discharged pyrotechnics.
- Safe all ejection circuits.
- Remove any non-discharged pyrotechnics.

Flight Failure Checklist

- Disarm all non-fired pyrotechnic devices.
- Continue Normal Post Flight Recovery procedures.
- Fall on ass and cry.