

Mighty Mo Checklists

• Prep Checklist

▣ Prep Ejection Charges

- ___ 1) Label Ejection Charge Canisters
 - ___ a) MD for MAWD Drogue
 - ___ b) TD for Timer Drogue
 - ___ c) RD for RRC2 Drogue
 - ___ d) MM for MAWD Main
 - ___ e) RM for RRC2 Main
- ___ 2) Verify Ematch Continuity (should be about 1.25 Ohms)
 - ___ a) MD
 - ___ b) TD
 - ___ c) RD
 - ___ d) MM
 - ___ e) RM
- ___ 3) Load each Ejection Charge Canister with 6 grams FFFFg Black Powder
 - ___ a) MD
 - ___ b) TD
 - ___ c) RD
 - ___ d) MM
 - ___ e) RM
- ___ 4) Install these ejection charges in the lower airframe ejection charge holders.
 - ___ a) MD
 - ___ b) TD
 - ___ c) RD
- ___ 5) Install these ejection charges in the upper airframe ejection charge holders. Note the leads for these charges will be routed thru the conduits to the aft end of the upper airframe.
 - ___ a) MM
 - ___ b) RD

▣ Prep Electronics

- ___ 1) Obtain 3 fresh Duracell 9V Batteries
- ___ 2) Check Battery Voltage (should be about 11 volts)
- ___ 3) Install battery in electronics
 - ___ a) MAWD
 - ___ b) Timer
 - ___ c) RRC2
- ___ 4) Wrap battery holder with masking tape
 - ___ a) MAWD
 - ___ b) Timer
 - ___ c) RRC2
- ___ 5) Set MAWD for 1100 foot Main
 - ___ a) SW 1 ON
 - ___ b) SW 2 – SW 6 OFF
- ___ 6) Set RRC2 for 1000 foot Main
 - ___ a) SW 1 ON

- ___ b) SW 2 – SW 6 OFF
- ___ 7) Set MT3G for 20 Seconds (4.5 seconds after apogee). See MT3G instructions.
- ___ 8) Set all switches to the counter-clockwise 220V Safe position.
- ___ 9) Verify all terminals on the altimeter bay terminal strip are open.
- ___ 10) Set these switches clockwise to the 110V Armed position. The MAWD should settle out to a long beep
 - ___ a) MP
 - ___ b) MD
 - ___ c) MM
- ___ 11) Add a jumper to terminal MD. The MAWD should give a short beep. Remove the jumper
- ___ 12) Add a jumper to terminal MM. The MAWD should give two short beeps
- ___ 13) Add a jumper to MD. The MAWD should give three short beeps
- ___ 14) Remove all jumpers and set all switches to counter-clockwise 220V Safe
- ___ 15) Set these switches clockwise to the 110V Armed position. The MT3G should beep out the time value in tenths of a second
 - ___ a) TP
 - ___ b) TD
- ___ 16) Set switch TP to counter-clockwise 220V safe and put a jumper on TD terminals.
- ___ 17) Set switch TP to clockwise 110V armed position. The the MT3G should give a continuous tone.
- ___ 18) Remove all jumpers and set all switches to counter-clockwise 220V Safe
- ___ 19) Set these switches clockwise to the 110V Armed position. The RRC2 should settle out to no beeps.
 - ___ a) RP
 - ___ b) RD
 - ___ c) RM
- ___ 20) Add a jumper to terminal RD. The RRC2 should give a short beep. Remove the jumper
- ___ 21) Add a jumper to terminal RM. The RRC2 should give two short beeps
- ___ 22) Add a jumper to RD. The RRC2 should give three short beeps
- ___ 23) Remove all jumpers and set all switches to counter-clockwise 220V Safe
- ___ 24) Insert electronics attached to the altimeter bay cover into the upper airframe.
- ___ 25) Carefully pull the two drouge ejection charge leads thru the holes in the altimeter bay cover.
- ___ 26) Secure the altimeter bay cover with four wing nuts
- ___ 27) Install the harness eyebolt.
- ___ 28) Instal tie wraps to keep the harness eyebolt from twisting

□ **Prep Main Harness**

- ___ 1) Pack the Main chute into the depolyment bag.
- ___ 2) Put the nomex sleeve on the 40" long two inch TN strap
- ___ 3) Attach the strap to the harness eyebolt in the upper airframe with a triangle quicklink.
- ___ 4) Slide a kevlar sleeve and a large kevlar pad over the aft end of the 15' one inch TN harness
- ___ 5) Hook the 15' one inch TN harness onto the forward end of the 40" long two inch TN strap with a quicklink.
- ___ 6) Hook the swivel of the main parachute to the forward end of the 15' one inch TN harness with a quicklink.
- ___ 7) Load the main harness with the deployment bag into the upper airframe.

□ **Prep Nosecone Harness**

- ___ 1) Put a triangle quicklink on the one inch TN coming out of the forward end of the deployment bag.
- ___ 2) Slip the aft end of the the 15' 9/16 inch TN onto the quicklink.
- ___ 3) Attach the quicklink onto the nosecone harness eyebolt.
- ___ 4) Slip a kevlar pad on the forward end of the 15' 9/16 inch TN harness.
- ___ 5) Attach the Nosecone chute to the end of the 15' 9/16 inch TN harness with a quicklink

□ **Prep Nosecone**

- ___ 1) Lineup the mark on the nosecone shoulder with the mark on the upper airframe and insert the nosecone onto the upper airframe.
- ___ 2) Insert the six 4-40 shear pins.

□ **Prep Main Harness**

- ___ 1) Put the Nomex sleeve on the 30 inch long two inch TN strap
- ___ 2) Attach the strap to the Harness Eyebolt in the lower airframe with a quicklink.
- ___ 3) Gather the 100 foot one inch TN harness into neat gathers, secure the first two with electrical tape and the remaining ones with rubber bands.
- ___ 4) Slide a kevlar sleeve and a large kevlar pad over the aft end of the 100 foot one inch TN harness
- ___ 5) Hook the 100 foot one inch TN harness to the the 30 inch long two inch TN strap with a triangle quicklink.
- ___ 6) Slip a medium kevlar pad over the end of the 100 foot one inch TN harness. This pad is for the drogue chute.
- ___ 7) Put a quicklink on the forward end of the 100 foot one inch TN harness.
- ___ 8) Add the drogue chute to the quicklink.

□ **Prep Motor**

- ___ 1) Load the M1350 reload according to the supplied instructions.
- ___ 2) Insert the motor into the 98/75 adapter
- ___ 3) Insert the adapter into the 98mm motor tube and screw on the Aeropack 98mm retainer.

□ **Prep Motor Igniter**

- ___ 1) Obtain two Quickburst Fatboy igniters
- ___ 2) Check the continuity of the igniters with a DVM
- ___ 3) Short the igniter at the end of the leads.
- ___ 4) Tape the igniters to the end of a dowel with a length of cannon fuse
- ___ 5) Wrap the igniter leads around the length of the dowel
- ___ 6) Verify the dowel will insert freely into the motor and reaches the top.

□ **Complete Prep**

- ___ 1) Hookup the main ejection charge leads to the main terminals strip.
 - ___ a) MM
 - ___ b) RM
- ___ 2) Hookup the main ejection charge leads to the main terminals strip.
 - ___ a) MD
 - ___ b) TD
 - ___ c) RD
- ___ 3) Attach the main harness quicklink to the harness eyebolt on the upper airframe
- ___ 4) Lineup the mark on the upper airframe coupler with the launch lug side of the lower airframe.

- ___ 5) Insert the upper airframe into the lower airframe.
- ___ 6) Insert the six 4-40 shear pins.
- ___ 7) Verify the CG of the loaded rocket
- ___ 8) Verify the CG is forward of the CG limit which is one caliber forward of the CP.
- ___ 9) Have the RSO and L3CC member sign off on the rocket.

● Pad Checklist

▣ Load Pad

- ___ 1) Unlock and tilt the rail
- ___ 2) Load the rocket on the rail
- ___ 3) Lock the rail
- ___ 4) Make sure the pad is stable
- ___ 5) Make sure the rail is vertical.

▣ Arm Electronics

- ___ 1) Set the following switches to the clockwise armed position. The MAWD should give a sequence of three short beeps.
 - ___ a) MP
 - ___ b) MD
 - ___ c) MM
- ___ 2) Set the following switches to the clockwise armed position. The MT3G should give a continuous tone.
 - ___ a) TP
 - ___ b) TD
- ___ 3) Set the following switches to the clockwise armed position. The RRC2 should give a sequence of three short beeps.
 - ___ a) RP
 - ___ b) RD
 - ___ c) RM

▣ Setup Ignition

- ___ 1) Insert the igniter dowel into the motor
- ___ 2) Secure the dowel to the pad.
- ___ 3) Verify the ignition circuit is safe
- ___ 4) Hookup the igniter
- ___ 5) Verify continuity
- ___ 6) Arm the ignition circuit
- ___ 7) Move back at least 500 feet.
- ___ 8) Inform the LCO the rocket is ready to launch

- **Post Flight Checklists**

- ▣ **Safe Electronics**

- ___ 1) Locate Rocket Upper Airframe
 - ___ 2) Disable the MT3G Timer by setting the TP and TD switches to the counter-clockwise SAFE position.
 - ___ 3) Record the MAWD altitude via the beeps.
 - ___ 4) Disable the MAWD by setting the MP, MD and MM switches to the counter-clockwise SAFE position.
 - ___ 5) Record the RRC2 altitude via the beeps.
 - ___ 6) Disable the MAWD by setting the MP, MD and MM switches to the counter-clockwise SAFE position.

- ▣ **Inspect Rocket**

- ___ 1) Check the all rocket components and note any damage
 - ___ 2) Check for any unburnt ejection charges and remove them from the rocket
 - ___ 3) Inform the L3CC of the condition of the rocket and complete the Level 3 forms.

- **Contingency Checklists**

- **Electronics Problem**

- ___ 1) If the altimeter or timers do not give the proper audible feedback
 - ___ a) Select all the switches to the counter-clockwise SAFE position.
 - ___ b) Remove the rocket from the pad.
 - ___ c) `Troubleshoot the problem
- ___ 2) Repeat the prep and pad checklists.

- **Motor Ignition Fails**

- ___ 1) Wait two minutes before approaching the rocket.
- ___ 2) Replace the igniter dowel with a backup
- ___ 3) Repeat the pad checklist for the igniter