Aerotech Arreaux Preparation Checklist.

☐ If you have not done so, model the flight of your rocket with your selected motor in Rocksim or Open Rocket. You need to set the ejection delay (the middle number in the pull-down menu) and you need to have the parachute eject at maximum delay time. Verify that the initial acceleration is 4g or higher and record the maximum acceleration during liftoff, the predicted apogee in feet, the time to apogee, and the time to ejection on the flight card.

Data Logger Verification

☐ Momentarily measure the current of your batteries with a meter. If the current of any battery is below 5A replace it.

☐ Test your data logger and your sensors and verify that they are all functioning.

☐ If using a v3 data logger secure your microSD card with electrical tape.

Camera Verification (if using)

☐ Verify that your video camera is fully charged and functioning.

☐ Secure your camera in position.

Parachute loading (Proctor Observed)

☐ Remove payload section from body of rocket and pull out shock cord and parachute.

☐ Inspect shock cord

☐ Visually inspect chute for hardware defects and security.

☐ Place mouth securely on end of rocket body with shock cord and blow hard to remove any debris and make certain ejection gas path is unblocked.

☐ Fold/gather shock cord up to parachute and load into body.

☐ Fold chute; make sure lines are orderly;

☐ Put chute into recovery section; make sure it slides freely.

☐ Load the rest of the shock cord into the section.

☐ Insert payload section into body of rocket.

☐ Proctor initials _____.

Motor Insertion (Proctor Supervised)

☐ Put on safety glasses.

☐ Record information on motor model, etc.

☐ For reloadable motors, add 0.35g of black powder to the end of the motor housing, add a small amount of wadding, and secure everything with a red cap cover.

☐ For single-use motors, add 0.15g below washer, washer, and 0.30g above washer of black powder to the end of the motor housing, and secure everything with the red plug cap.

☐ Insert and secure motor.

☐ Tape igniter to outside of rocket.

☐ The rocket is now LIVE, *do not* permit nosecone to point at anyone.

☐ Proctor initials _____.

Rocket Check-in

☐ Fill out Flight Card. Include **ALL** requested information except Pad Number, RSO/LCO comments and RSO and LCO initials.

☐ Take rocket, checklist and flight card to RSO to have rocket inspected.

☐ Take rocket to check-in table (or LCO) to turn in flight card and be assigned a launch pad.

☐ When given all clear, proceed to assigned launch pad.

At Launch Pad (Proctor Supervised)

☐ Record GPS position of rocket.

☐ Power on electronics and verify data logger is running.

☐ Reassemble payload section.

☐ Secure nosecone with nylon screws.

☐ Loosen tilt screw or remove bottom pin from launch stand.

☐ Pivot launch rod to almost horizontal.

☐ Slide rocket onto rod and down to stop.

☐ Pivot rod to desired angle and tighten screw or insert pin. Verify angle from two orthogonal directions.

☐ Start video camera if using.

☐ Insert igniter into motor. Be sure it is fully inserted.

☐ Create a loop (circle) in the wire just beyond the nozzle and thread the leads-end of the wire through the slot in the red motor cap.

☐ Secure the igniter in the motor with the red cap. Push the cap all of the way on.

☐ Attach alligator clips to igniter leads. Verify that the leads are not touching each other or the launch pad.

☐ Have LCO check/test continuity at launch controller.

☐ Return to safe area.

Rocket Recovery

☐ If your rocket lands more than 150 feet from the launch pad, immediately send a team member or two to retrieve the rocket. Otherwise, wait until you are given the all-clear signal by the RSO or LCO and retrieve your rocket.

☐ If GPS is available, record GPS position of rocket.

☐ Inspect for damage.

☐ Return to rocket prep area.

☐ Return Pnut if checked out.

Data Retrieval

☐ Save the data file from the microSD card in the data logger. The name should be in the following format:

  S followed by section number,
  T followed by team number,
  F followed by flight number (for your team),
  Rocket name (A, B),
  Motor designation before the dash, e.g., G61W,
  Underscore then date in YYYYMMDD format.

For example, if Team 2 of section 5 flew an Arreaux for their second flight on a G104T-M on 23 April 2016, the file name would be S5T2F2AG104T_20160423.txt.

☐ Make a back-up of your file on a different computer or USB drive.

☐ Save the video file from the microSD card in the camera. The name should be in the following format:

  S followed by section number,
  T followed by team number,
  F followed by flight number (for your team),
  Rocket name (A, B),
  Motor designation before the dash, e.g., G61W,
  Underscore then date in YYYYMMDD format.

For example, if Team 2 of section 5 flew an Arreaux for their second flight on a G104T-M on 27 April 2012, the file name would be S5T2F2AG104T_20130427.mov.

☐ Make a back-up of your file on a different computer or USB drive.

Post Flight Prep

☐ Do an inspection and report any visible damage.

☐ Remove and clean out motor casing with baby wipes (if not single use).

☐ Return cleaned motor parts to motor parts storage area (if not single use).