

RACK Designations:

A = Six Model Pads

B = Six Model Pads

C = Six Mid-Power Pads

D = Six High-Power Pads

E = Six "spare"

F = Six "spare"

When necessary, the "away cell" is connected to the leads of high-power pad #6.

*** A new "Flight Card" is required for each and every flight made by a rocketeer. ***

*** Verify that the igniter connections at the model pads are not shorted, and that the appropriate set of igniter leads are used for the proper pad. (The model pads may contain many "rookie" mistakes) ***

1) Using the PA system, announce that the "RANGE IS CLOSED". Everyone must stay behind the yellow flight-line rope until the "RANGE IS OPEN" announcement has been given.

2) Collect Flight Cards from the flight card rack, and write down the appropriate RACK/BANK and PAD number on each flight card (if it is not already there). Sort cards by RACK/BANK and PAD number and place them under the "NOW" clip on the LCO clipboard. ("A" rack/bank first, followed by "B", "C", "D", etc...)

3) Insert the Launch Control Key and turn it to the RIGHT (ON) to apply power to the launch system. The ORANGE indicator on top of the control panel should light up.

4) Ensure all six individual GREEN pad status lights are OFF. If not, flip the appropriate toggle switches to their OFF (DOWN) position.

5) Ensure the "SELF / REMOTE LAUNCH" toggle switch is in the OFF (UP) position and the GREEN indicator light is OFF.

6) We usually launch in alpha-numerical sequence (A1, A2...A6, B1, B2...B6...) starting with the model pads and moving on to the mid then hi-power pads. Occasionally we will perform some of the hi-power launches first, at the request of the rocketeer (such as when they have activated their on-board electronics, or need a "calm" launch window).

7) Take the top flight card from under the "NOW" clip of the LCO clipboard (this will most likely be "A1"). All flight cards must be filled out properly or the rocket should not be launched. This includes specifying the correct motor that is being used in the model. Rockets with inappropriate names (those of a sexual, vulgar or racist nature, as well as any other names deemed "questionable" by the LCO) should NOT be launched. All rockets using a motor designation of "G" or greater power must be inspected by a Range Safety Officer (RSO) and have the RSO's initials on the flight card. If you come across one or more of the above scenarios (improper name, improper motor, or in the case of "G" or higher motors missing RSO initials), make an announcement as to what the problem is and place the flight card into the "RE-DO" pile on the LCO clipboard. Once the problem has been fixed, the rocketeer can have their rocket launched during the next round.

8) Flip the toggle switch for appropriate RACK/BANK, (A, B, C, D, E or F) to the ON (DOWN) position and ensure the associated RED rack/bank light is illuminated.

9) Flip the toggle switch for the appropriate PAD (1, 2, 3, 4, 5, or 6) to the ON (UP) position and ensure the associated GREEN pad light is illuminated.

10) Announce relevant information from the flight card regarding the launch to the crowd, including but not limited to:

Owner name

Model Name (and colors if you desire)

Motor Specifications / Vendor & power (i.e. Estes B6-4, Estes C6-3, AeroTech I-161W-M)

Rack # and Pad #

Type of Recovery system (Tumble, Streamer, Parachute, Helicopter, Glider, etc...)

Cluster or Staged motors?

Electronics?

Comments?

(The above items do not need to be relayed in the specific order given)

Be sure to double-check the flight cards for rockets using a motor impulse of "G" or greater. These rockets must have an RSO sign-off and should not be launched without it.

11) Check the card to see if the flight is to be a "Self / Remote Launch". If it is, flip the toggle switch for the "Self / Remote Launch" to the ON (DOWN) position, and inform the rocketeer that when the countdown gets to "0" to press and hold down the RED button on the remote launch controller. Remember, when the self / remote launch toggle switch is in the ON (DOWN) position, BOTH buttons (the small RED one on the remote controller and the large RED button at the LCO panel) must be depressed simultaneously for ignition to take place. This is a safeguard that allows the LCO to abort the launch if necessary. The LCO should push and hold the RED button (enabling the RED button on the remote launch controller) beginning at T-1 and keep it depressed through ignition. After a self / remote launch has been completed, return the Self / Remote Launch toggle switch to the OFF (UP) position. **(Not turning the switch off is the #1 reason for misfires on flight attempts following a self-launch.)**

12) Check the sky overhead and make sure no aircraft or "flying critters" are in the general vicinity. If there are, the launch should be delayed until they are a safe distance away.

13) If sky and range are clear, perform a countdown starting from "5". At "0" (or saying "launch"), press the large RED button on the LCO control panel to launch the rocket.

14) If the rocket DOES NOT launch, re-check all settings, perform another countdown and try again. If it still refuses to launch, write "RE-DO" on the flight card and place it under the "RE-DO" clip of the LCO clipboard.

15) If the rocket DOES launch from the pad, watch to make sure the recovery system deploys and all pieces of the rocket are accounted for to ensure a safe recovery. (a "successful" launch). Be aware of fire danger and look at the pad area to ensure a fire has not started from the motor exhaust. This is especially important with rockets using "Sparky" motors.

16) If the rocket is unstable (skywrites in the air), does not eject the recovery system, suffers a "separation", or looks like it will land somewhere in the confines of the flight line (where rocket staging and spectators are located), the LCO should make an immediate "Heads-Up" announcement over the PA system to warn people of the possible danger. A Heads-Up can also be given before a flight if the rocket uses a unique configuration (such as canted, staged, or clustered motors), is deemed to be marginally stable, or uses a low thrust to weight ratio...among other things.

17) Make a note on the flight card as to whether the flight was successful or unsuccessful (with the reason why it failed), and place the flight card under the "COMPLETED" clip on the LCO clipboard or on the flight card "Stake/Spike".

18) Repeat the above procedure from Step 4 until all flight cards / rockets have been processed.

19) After the last rocket for the round has been launched and the flight card processed, turn the Launch Control Key to the LEFT (OFF) position to remove power from the launch system. The ORANGE indicator on top of the control panel should be OFF. Flip any/all of the RACK/BANK toggle switches to the OFF (UP) position.

20) Make an announcement that the "RANGE IS OPEN". Tell rocketeers to:

- A) Retrieve their rockets.
- B) Rack up additional rockets for the next round.
- C) Troubleshoot problems for rockets moved to the "RE-DO" pile.

21) Place flight cards from the "RE-DO" pile of the LCO clipboard into their appropriate positions on the flight card rack.

NOTES:

- It's really a lot simpler than it sounds, and even easier when you have somebody with you at the LCO table (an LCO assistant) to take care of writing flight card notes, keeping the flight cards organized, and/or performing the announcing duties.
- An LCO (the person that pushes the RED launch button) must be at least 18 years of age, but LCO assistants can be any age.
- "Drag Races" are when two or more rockets are launched simultaneously. All rockets involved in a drag race should be on the same physical rack/bank (A, B, C, D, E or F) to prevent accidentally launching a rocket NOT involved in the race. Rockets involved in a Drag Race should have that request stated on their flight cards. From an LCO perspective, the only thing different procedure wise for a Drag Race is enabling multiple PAD toggle switches so the rockets are launched at the same time.