

## **LCO (Launch Control Officer):**

There is no certification level required to work as LCO. The LCO controls the progress of the launch and works with the Range Boss to oversee range operations. The LCO is the main communicator to people on the range and in the spectator crowd.

The LCO announces to the crowd information from the Flight Data Card so everyone knows what to expect in an upcoming flight. Then, the LCO surveys the range AND the sky to confirm it is safe to launch and announces "The range and sky are clear". A "3-2-1" countdown is given for LPR flights and a "5-4-3-2-1" countdown is given for HPR launches. Then, the A-LCO fires the rocket. The LCO narrates the flight and maintains visual contact with rockets in the air and proceeds to the next launch only when a rocket in the air is no longer a danger to personnel or property (usually, when Main has deployed).

Unlike typical launches – the LCO's at NERRF will have an assistant to help manage the job and keep a speedy flow of rockets.

Every rocket should be given a proper introduction and have its flight narrated. When flight operations get backed up for any reason, the LCO has discretion to speed up the launch by abbreviating announcements and narration, and by initiating multiple rocket launches at once (drag races).

The LCO should attempt to keep the launch upbeat and interesting.

## NERRF LCO Procedure

--- The LCO runs the tempo and rhythm of the day -- **Keep it Lively** but don't sacrifice safety.

--- Overcommunicate -- people in the crowd don't know what's going on unless you tell them.

--- You and the Range Boss run the show. Work as a team to **move things along**, but under control.

----- **SAFETY is the NUMBER ONE PRIORITY** -----

1 Load on one side of the Field, while launching on the other side. Launch from the back of the field to the front.

2 Assistant LCO's should take Flight Cards, marked with assigned pad and clip them on the board.

3 Assistant LCO should operate the controls

4 Set focus to the selected launch pads and notify the crowd.

5 Identify the rocket being launched and describe:

a. Field Side, Pad Color, Pad Number

b. Rocket, Flyer, Motor, Recovery, any special notes on card and specials like "Heads Up"

c. For a Head's Up Flight, the Crowd **MUST** be standing

d. For a Certification Flight, ensure the correct Prefect and Observers are alerted.

6 Have the A-LCO check for Continuity

7 Announce Launch pad Color and Number again and provide a Countdown and Launch

Note: for Low Power: "3-2-1 Launch" / For High Power AND Away Cell: "5-4-3-2-1 Launch"

8 Announce Flight Characteristics -- Apogee, Event, Follow down (see two lines below)

If the rocket is coming in Ballistic, blow the horn and **URGENTLY** alert the crowd for Heads UP!!!

Stay with the falling rocket until (1) Main Deploys or (2) Drogue deploys on a very high flight **NOT** over the crowd.

9 Move focus to the next rocket and move on.

10 When the Field is done, get confirmation from the Range Boss, turn off the pads and announce "Pads are Cold"

11 Move focus to the other Side and begin launching.

**REMEMBER -- IT'S UP TO YOU TO MAINTAIN A RAPID PACE DURING BUSY TIMES WITHOUT SACRIFICING SAFETY. (During quiet times, take your time and get the crowd engaged...)**