

Rocketry Organization of California  
340 S. Lemon Avenue, #4964  
Walnut, CA 91789

# Event Operations Plan

Nominal Version Covering Monthly Launches and ROCStocks

Launch Location:

Lucerne Dry Lake [SEC26 TP 5N R1W], SBC Parcel 0452-031-01-0000  
San Bernardino County  
California

Valid launches in Fiscal Year 2020, Q3-Q4, specifically:

June 12-14, 2020, ROCStock;

July 11, 2020, monthly;

August 8, 2020, monthly; and

September 12, 2020, monthly.

ROC BLM Point of Contact:

Allen Farrington

[allen@alumni.duke.edu](mailto:allen@alumni.duke.edu)

818-653-2284

Version changes marked in yellow.

This version contains COVID-19 specific policy and guidelines, see Appendix A.

## ROC Board:

All of the persons listed below function as point of contact, safety officer, and first aid coordinators, depending on the particular staffing at any launch.

ROC President:	Mike Ostby	909-561-9191
ROC Vice-President:	Gary Schneider	951-279-3270
ROC Treasurer:	Cindy Farrington	818-422-1694
ROC Secretary:	Gregg Halligan	562-696-2816
ROC Equipment Coord.:	Kurt Gugisberg	310-347-2990

This plan includes the Medical/Rescue/Fire plan for all normal operations as well as emergencies that could be encountered during these events being held on public land. It also includes the expectations and guidelines for the crews assigned to cover this event to ensure public safety.

\*\*\*This plan may be distributed to Fire/Medical and Law Enforcement to ensure uniform response. \*\*\*

**Definitions**

ROC - the Rocketry Organization of California.

Monthly Launch - A single-day launch held on the second Saturday of the calendar month.

ROCStock - A three day launch held in June and November of each year around the second Saturday of the month and includes nighttime activities.

ROCTober - A two-day launch held in October of each year around the second Saturday of the month (all-day Saturday, half-day Sunday) focused on Youth Groups.

Participant = Flyer - in this document the words participant and flyer are equivalent and distinguished from spectator.

Spectator - a non-flyer attending the launch. Signs a waiver, however, there is no fee associated with spectating. We estimate spectators by multiplying the number of flyers by 3.

Youth-Group - In order to support the education aspects of Rocketry (ROC is a 503(c) IRS Tax Exempt Corporation), ROC allows organized Youth Groups, e.g. Scouts, TARC teams, schools, Civil Air Patrol, etc..., to fly a group as a discounted rate. We report those groups as one flyer in our reports and estimate the spectators.

**Statement of Purpose**

The purpose of this document is to provide the procedures to protect life and property during the event and to ensure smooth operations.

All personnel should familiarize themselves with this plan and be prepared to fill their role and render assistance at any time to reduce injury, loss of life, or damage to property.

**Applicable Documents**

ROC events are operated in accordance with multiple documents covering federal, state, and NAR/Tripoli laws, regulations, and rules.

- 1.
2. Title 14, Code of Federal Regulations, Section 101.25(f) (FAA)
3. ROC Certificate of Waiver covering item #1, above.
4. NFPA 1122, Code for Model Rocketry
5. NFPA 1127, Code for High Power Rocketry
6. California Health and Safety Code, Section 12500-12728 (Fireworks Law)
7. Title 19, California Code of Regulations, Chapter 6 (Fireworks Regulations)
8. Title 13, California Code of Regulations, Selected Sections (Hazardous Materials Transportation - Rocket Motors)
9. National Association of Rocketry - Various Bylaws, Rules, and Guidelines
10. Tripoli Rocketry Association - Various Bylaws, Rules, and Guidelines
11. Bylaws of the Rocketry Organization of California
12. State of California, Executive Order N-33-20 - COVID-19.
13. County of Los Angeles, Order of the Health Officer (April 10, 2020), Appendix A - Social Distancing Protocol.
14. San Bernardino County, Order of the Health Officer (April 7, 2020) - Control of COVID-19.

## Event Overview

ROC operates Monthly Launches as well as ROCStock and ROCtober events. All types of events follow this plan with the primary difference being the duration of time for the total event. Some public health and safety modifications are used for the ROCStock and ROCtober events as the attendance is usually significantly larger than for a monthly launch. Details of ROC's policies and procedures can be found online at [www.rocstock.org](http://www.rocstock.org) and at the actual launch in the ROC administration area.

### Estimated Number of Participants (Flyers):

Monthly Launch - Varies from 25 to 50, typically about 40.

ROCStock - Varies from 50-200, typically about 150 daily, 100 overnight.

ROCTober - Varies from 100-1000, typically about 750 daily, 250 overnight.

### Estimated Number of Spectators:

ROC events are advertised and free to spectators so the turnout is highly variable due to weather and other seasonal effects.

Monthly Launch - Varies from 25 to 250, typically about 150.

ROCStock - Varies from 250 to 2000, typically about 1000.

ROCTober - Varies from 300-2000, typically about 1000.

In our reporting, ROC estimates 3 spectators for each flyer.

### Event Staff:

Monthly Launches - 4 to 10, depending on the season.

ROCStock and ROCtober Events - 25 to 30.

ROC conducts its primary operations on BLM land. Occasionally a rocket will drift onto private lands (still on the dry lakebed). Those incursions are temporary, however, ROC has attempted contact with the owners of those properties to offer insurance coverage.

ROC events do not have temporary structures with the exception of "EasyUp" shades, cars, trucks, and recreational vehicles.

ROC has vendors on-site during both Monthly Launches and ROCStock events. ROC does not charge any fee to vendors, however, vendors provide raffle prizes in exchange for reserved parking along our flight-line. ROC vendors are advised to obtain their own BLM, business, and health department permits as required. To our knowledge and per our annual vendor waiver process, all ROC vendors are in compliance with BLM permits. ROC does not get any revenue from the vendors.

***The ROC BLM Permit does NOT cover any vendors, per ROC Policy, all vendors are required to obtain their own BLM permits.***

ROC occasionally has news media at its events. At ROCStock events, media is coordinated by the ROC board. Occasionally, filming is done at ROC events by contractors representing various science and educational channels. That filming is done in coordination with our launch, however, it is not done under contract to ROC. We

advise all media companies to obtain proper filming permits from both local, state, and federal organizations.

ROC contracts with a sanitation service provider in Lucerne Valley for all launches. Portable restrooms (2-4) are provided for monthly launches. Additional restrooms, up to 12 are provided for ROCStock and ROCtober events. For monthly launches, ROC observes a “leave no trace policy” and reminds participants to pack out trash themselves. ROC polices the trash and FOD situation during all launch activities and makes public address announcements regarding such.

ROC encourages camping both before and after monthly launches and during ROCStock events. Participants and spectators are reminded via regular public address announcements of the regulations regarding camping on the lakebed, especially with respect to fire restrictions.

### **Emergency Operations**

We notify the Lucerne Valley Fire Department of our activities and they provide both fire and medical emergency response. In addition, the San Bernardino County Sheriff's department is notified of our operations on an annual basis.

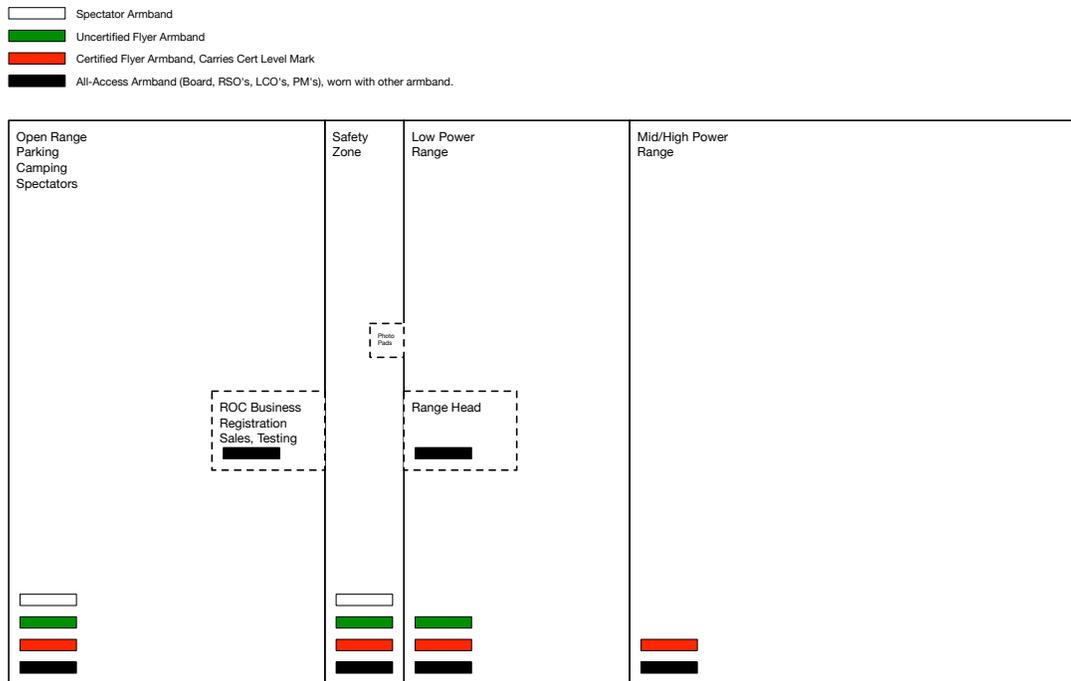
For all launches, the primary medical needs associated with the conduct of our activities includes minor cuts, scratches, and burns associated with hobby/craft construction activities. Our participants use knives, soldering irons, and hand tools in the conduct of their on-site activities. ROC maintains first aid equipment to handle these types of needs, however, they are not typically employed as most participants cover their own needs.

Other issues encountered at ROC events include minor car accidents (posted lake bed speed is 5 MPH), minor falls (sometimes the lakebed has gullies), dehydration, and sunburns. ROC provides safety reminders regularly via public address announcements.

Launch operations involving rocket motors are conducted in a restricted area in full view of both the Launch Control Officer and the Range Safety Officer. At ROCStock events, additional range staff is provided to assist participants in their launch preparations. Through those staff members, ROC is able to quickly identify anyone injured or in distress. Since the range is under full staffing and control during all launch operations, there is no “unattended” risk associated with launch operations. In addition, ROC maintains a set of fire extinguishers both on the range and within the ROC administration area and are readily available for inspection. These are professional-grade extinguishers that are serviced annually. Extinguishers are placed at each pad bank (set of six pads) and with our electrical generator.

For major medical needs such as illness, heart attack, or severe dehydration, ROC relies on the local first responders (Fire, Sheriff, etc...) to meet our needs. We simply use the existing 911 emergency response system. Our launch location is covered by all

ROC Range Control  
*Not to scale.*



major cellular providers and the first responders are approximately 3 miles away in Lucerne Valley. ROC does not require professional on-site Fire or Medical staff.

**Schedule of Events**

ROC launches are conducted on the Second Saturday of each month, all year. In June, October, and November, ROC conducts 2 or 3-day events running from Friday through Sunday.

	Setup Activities	Launch Activities	Clean-up Activities
<b>Monthly Launch</b>	Saturday Morning	Saturday 7AM-2PM	Saturday Afternoon
<b>ROCStock</b>	Thursday Afternoon	Friday & Saturday 7AM-6PM, 9-10PM Sunday 7AM-2PM	Sunday Afternoon
<b>ROctober (October)</b>	Friday Afternoon	Saturday 7AM-5PM, 7PM-9PM Sunday 7AM-2PM	Sunday Afternoon

Portable restrooms are contracted to be removed on the Monday following the event. Trash and other items are removed at the termination of the event (Saturday or Sunday).

For a Monthly Launch, there is a brief “flyer’s announcement” covering operations and general safety information. Our monthly launches are attended primarily by “regulars” so reinforcement of our procedures is all that is necessary.

For other events, a stand-up flyer’s meeting is held each morning to discuss operational procedures and safety since ROCStocks and ROCtober attract many out of town participants.

For all events, regular public addresses are made covering procedures, safety, etc...

After the start of operations, there is no set schedule. In general, operations proceed continuously along the following general lines.

All participants must register before flying. We use wristbands to control this access (see figure on next page). Registration includes updating a liability waiver and paying the daily launch fee. Annual members update their waiver (launch fee included in membership). Registration runs continuously throughout the day and is usually suspended approximately one or two hours before we shut down the range.

Once a participant is registered and has prepared their rocket for flight, a safety check is performed by a certified flyer who wears a special yellow vest. This is the Flight Safety Reviewer (FSR). The FSR checks the rocket and motor per established NAR and Tripoli guidelines and against the NFPA 1122 and 1127 safety codes. The FSR uses a flight card provided by the flyer to log the safety check. Each flight requires a new flight card. The FSR also checks for a wristband. Finally, the FSR initials the flight card to indicate that the rocket is ready for pad assignment.

Once the rocket is safety checked, the flyer proceeds to the Pad Manager (PM) who assigns the flyer a particular pad based on the size of the motor and the launch fittings built into the rocket. The flight card is used to record the pad assignment. The Pad Manager assigns according to the safe distance requirements of NFPA 1127, §4.15.1. Depending on the number of participants waiting for pads, the PM function may be performed by the Launch Control Officer (LCO).

The participant flyer then waits until the range is opened (see below) and then proceeds to self-install their rocket on the launch pad. This activity takes anywhere from 5 minutes to multiple hours, depending on the complexity of the rocket. Once the rocket is secured to the pad and wired to the launch system, the flyer returns to the safety area and waits for their rocket to be launched. The PM manages the flight cards and hands them off to the LCO for actual launching.

The Launch Control Officer (LCO) controls the range and the electronic firing equipment. The LCO is responsible for restricting access to the firing range using the public address system. The LCO is responsible for assuring that the range and the air space are clear and in compliance with our safety codes and terms of our FAA waiver. The LCO takes the flight card for a particular pad/rocket combination, announces pertinent information about the flight (i.e. motor, electronics, flyer's name, etc...) and then performs a final countdown of 5 or 10 seconds (time depends on rocket size and complexity). At the end of the countdown the rocket is launched.

In the case of a successful launch, the rocket is observed by the LCO until the recovery system has correctly deployed. Once the recovery system deploys, the rocket recovery activities become the responsibility of the flyer. If the rocket recovers on the active launch range, the flyer must wait until the range is opened for activity. In the case of an off-nominal recovery deployment, the LCO suspends launch activities until the rocket is grounded.

In the case of an unsuccessful launch, the launch activities are suspended until the rocket (if airborne) is grounded safely. In the case of a mis-fire (e.g. the motor does not ignite), the launch activities continue with the next pad as the range is closed and safe at that time. Once the range is opened (after a minimum of one minute after any misfire, per safety codes) the flyers can retrieve their malfunctioning rocket.

In any case, the LCO marks the flight card with the outcome of the flight and places it into a box for storage. ROC keeps flight cards for approximately one year.

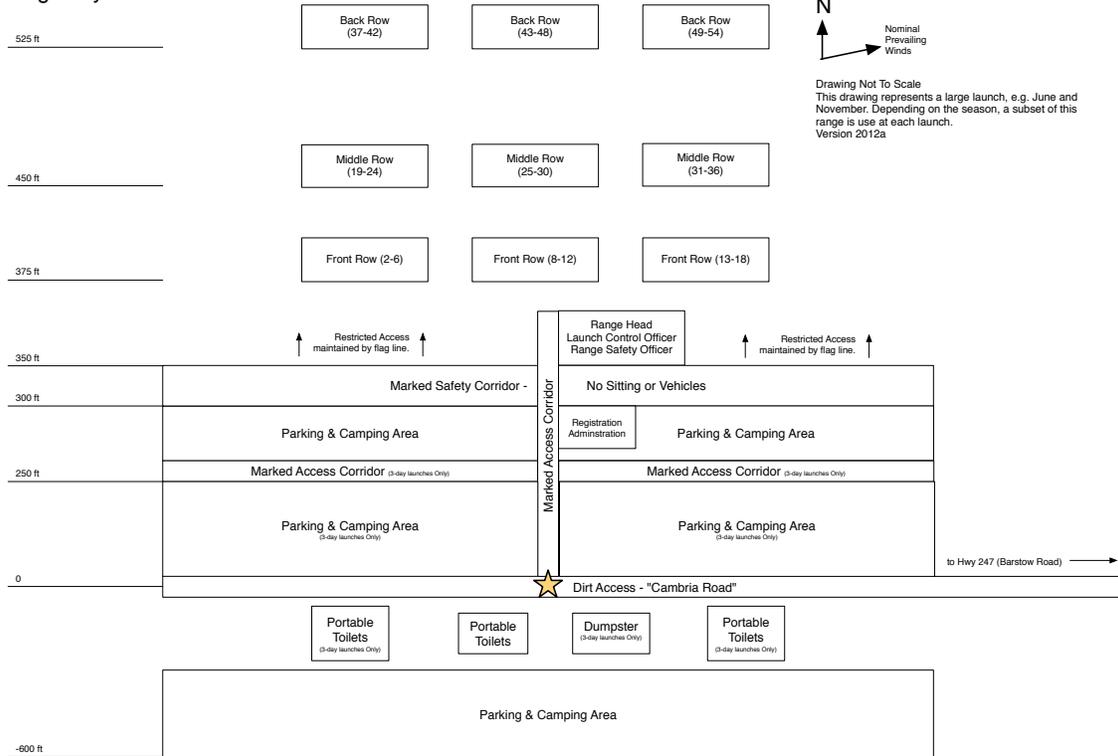
This system is scalable in that during ROCStock events where the number of flyers is high (approximately 50-70 per hour), we staff two LCO's, two to four FSR's, two PM's, and additional range helpers at the actual launch pads. At any time, however, only one LCO has the authority to launch. The other LCO acts as observer and management assistant.

In addition to these staff positions with specific responsibilities for operating the launch, there is a Range Safety Officer (RSO) who has responsibility for overall range safety and can stop the launch at any time. This person is typically "roving" and on the lookout for any unsafe conditions. Typical unsafe conditions that cause a "stop" are spectators sitting in the safety corridor (see layout map) or unauthorized personnel on the range. For example, per ROC policy, no uncertified flyers under the age of 18 are allowed beyond the low-power pads (first row) unless the range is "open for recovery".

As shown on our range map (see next page), our range is setup such that launch operations can be performed on one bank of pads while flyers are preparing rockets on other banks while still meeting the minimum safe distances per NFPA 1127.

At Lucerne, launch operations are typically completed in the afternoon each day due to unsatisfactory winds or at 2PM, whichever occurs first. On occasion, we have extended beyond 2PM, usually to accommodate a certification-type flight. In any case, our safety

Rocketry Organization of California  
Range Layout



code does not allow for launching in winds greater the 20 MPH. ROC maintains an anemometer at the range head for certifying safe flying conditions when breezy.

**Potential Hazards**

The primary potential hazards at the ROC launch site are typical for any desert location. Gullies present the primary physical hazard and generally are well established and hard to miss. Sun and heat related hazards exist during the spring, summer, and fall months while extreme cold has been recorded at some of our fall and winter launches. ROC maintains an extensive list of hazards and recommendations on our website.

Rocketry is an inherently dangerous activity, as such, we require liability waivers of all persons on the lakebed (Participants and Spectators). Nominal rocketry-related hazards include falling rockets with incompletely deployed recovery systems. ROC uses a range layout that coordinates with the prevailing winds to keep most recovery events out of the spectator and launch range areas. Occasionally, however, a rocket deploys “over the crowd”. In this event, the LCO uses the public address system with a special horn to

declare a “heads up” condition where everyone is required to cease activities, look to the sky, locate the rocket, and point to it. This allows the LCO to see if spectators are paying attention and they can then use the public address system to further issue instructions. In general, the public address system works well with both our Monthly Launches and ROCStock events. ROC operates a multi-speaker PA system with over 10 speakers in both the range and spectator areas. In addition, during ROCStock events, we broadcast our public address system on a low-power FM radio station.

For participants only, there is a hazard associated with the handling and preparation of the rocket motors and recovery system gas generators (e-matches and black powder). ROC uses safety policies enforced by the FSR such as no ignitors installed in motors until the rocket is attached to the launch pad, recovery systems must be de-energized until the rocket is on the launch pad, shuts must be used on e-matches, etc...

**Spectator Safety**

Per the attached range layout map (see previous page), ROC manages spectators using a combination of distance, wristbands, and flag lines to keep spectators within the safer parts of the range. Per NFPA 1127, §4.16.4, we keep spectators outside of our active launch area according to the safe distances required.

**Crew Assignments**

In general, ROC has a 9 person Board of Directors that attends every launch. In addition, we have a cadre of approximately 20 annual members that attend nearly every launch and who are available to staff our positions. All positions are staffed with persons over the age of 18 with the exception of the PM who can work under the supervision of the LCO.

Here are the roles, in some cases, the roles are shift-based and filled on an ad hoc manner during the launch. If the critical roles of LCO and RSO are not filled, launch operations are suspended. ROCStock events are pre-staffed with two hour shifts for each position. Monthly launches are ad hoc staffed by members of the ROC Board or Executive (paid) members of the club.

Range Safety Officer (RSO)	Various Persons, pre-designated per launch.
Launch Control Officer (LCO)	Various Persons, must be > 18 years old
Flight Safety Reviewer (FSR)	Various Persons must have Rocketry Certification at Level 2 or above.
Pad Manager (PM)	Various Persons
Pad Helper (PH)	Various Persons L2 Certification Desired for HPR pads
Registration Desk	ROC Board Members Only
BLM Liason	Allen H. Farrington
FAA Liason	Allen H. Farrington
Security	Various Board Members
Emergency Services	Various Board Members <sup>19</sup>

**Certification**

On behalf of the Rocketry Organization of California as Authorized Agent per the ROC Bylaws, I certify that the information provided in this document, accurate, and complete to the best of my knowledge. I acknowledge that we are required to comply with the requirements and stipulations on Form 2930-1, the Operations Plan, and any additional stipulations that are required by the authorized officer when the permit was issued. I further understand that the providing of false information, or the failure to keep the form or any other permit updated, are grounds for probation, suspension, or revocation of the permit.

Applicant Signature on file with Permit Application	Date varies
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Printed Name  
Allen H. Farrington

## APPENDIX A

**OPERATIONS DURING THE COVID-19 RECOVERY PERIOD**

(This appendix first appeared in Revision (a))

**Policy:**

The *Rocketry Organization of California* (ROC) exists to offer opportunities for our Members, guests, and spectators to safely enjoy the launching and recovery of Model and High Power Experimental Rockets for recreational and educational purposes. In addition to the established safety protocols of our governing documents, it is the policy of ROC to adhere to the relevant guidelines promulgated by the Bureau of Land Management, the State of California, and the counties of Los Angeles and San Bernardino with respect to Public Health Orders relevant to the COVID-19 Pandemic. ROC may, at the discretion of the Board of Directors, institute rules and procedures to conform the operations described in the *Event Operations Plan* to relevant guidance. This policy is subject to change at any time, even during events.

**Definitions:**

**COVID-19 Recovery Period** - The period of time, defined by the ROC President, under which these provisions will be in effect. From the start of the period until its termination, it should be assumed that the period is indefinite.

**Launch Director** - the member of the Board of Directors assigned with the ultimate authority over a given launch event including operations, vendors, and attendees. The Launch Director has the authority to terminate, temporarily or permanently (for each event) the event.

**Launch Site** - The launch site is the location within San Bernardino County where flight operations occur. The Launch site includes the parking, preparation, range head, and recovery area.

**ROC** - The Rocketry Organization of California, a member-owned corporation, is classified as a non-essential business (non-profit).

**Social Distancing** - (1) Maintaining at least six-feet of physical distance from individuals who are not part of the same household; (2) Frequently washing hands with soap and water for at least 20 seconds or using hand sanitizer that contains at least 60% alcohol; (3) Wearing a cloth face covering while out in public when in contact with others, not including members of a single household or living unit; and (4) Avoiding all social interaction outside the household when sick with fever or cough.

**Requirements (shall) and Guidelines (should):**

- 1) This Appendix shall not supersede any conflicting or more restrictive orders issued by San Bernardino County, the State of California, or the Federal governments.

**Note:**

*While the launch site is located in San Bernardino County and subject to those orders, some resources adopted by this policy and guidelines appendix are based on Los Angeles County and the State of California orders and related guidelines.*

**All Persons:**

- 2) No person demonstrating the symptoms of COVID-19 as defined by the US CDC ([www.cdc.gov](http://www.cdc.gov)) shall be present at the Launch Site.
- 3) No person living within the same household as anyone diagnosed with or demonstrating symptoms of COVID-19 shall be present at the Launch Site.
- 4) While present at the Launch Site, all persons shall maintain Social Distancing protocols defined above.
- 5) Shall immediately sign a COVID-specific liability Waiver upon arrival at the launch site.
- 6) Shall carry hand/personal sanitizer when using the Porta-potties.
- 7) *All persons should not camp overnight at the Launch Site.*
- 8) *All persons who are 65 years or older, have a chronic underlying condition, or have a compromised immune system should not be present at the Launch Site.*
- 9) *All persons should leave pets at home as they may be able to transmit the Coronavirus to each other or to humans.*

**Eligibility to Attend Launches:**

- 10) All attendees shall be Executive Members of ROC as of [Date TBD] with the intent to launch rockets (e.g. no spectators or family groups unless all actively launching).
- 11) No Youth Groups shall be allowed to attend launches.
- 12) No spectators shall be allowed to attend launches, launches shall be closed to the Public.
- 13) Minimum age, regardless of membership, shall be 6 years old.

**ROC Board of Directors:**

- 14) Shall Post signs at the Range Head, Registration, and Porta-Potties to inform all attendees of this policy and the Social Distancing Definition (above).
- 15) Shall check for volunteers for symptoms and remind them to go home if they are sick.
- 16) Shall separate all stations at the Range Head and Registration Table such that persons volunteering can remain six-feet apart.
- 17) Shall disinfect all launch equipment (as practical) by spraying, wiping down, etc... both after setup and before breakdown.
- 18) Shall provide disinfecting supplies to volunteers to apply to high-touch surfaces such as the launch controller and pad assignment board.
- 19) Shall require all volunteers to wear face masks and gloves while handling the launch equipment.

- 20) Shall mark at least 10 spots for a line, six-feet apart, for waiting for Safety Checks.
- 21) Shall mark at least 10 spots for a line, six-feet apart, for waiting for the ability to load rockets.
- 22) Shall reconfigure the Range entry and exit points to facilitate a six-foot separation.
- 23) Shall ensure that the launch pads are at least six-feet apart. When not possible (e.g. LPR Pads), only one person shall be allowed at the bank at a time.

#### **Vendors:**

- 24) Shall sign a COVID-specific liability Waiver upon arrival at the Launch Site.
- 25) Shall only allow as many customers inside of their trailers as can be accommodated within Social Distancing.
- 26) Shall provide ROC with a customized copy the *Los Angeles County, Appendix A: Social Distancing Protocol* checklist on arrival at the Launch Site for evaluation. See [http://publichealth.lacounty.gov/media/Coronavirus/docs/HOO/HOO\\_Safer\\_at\\_Home\\_for\\_COVID\\_04102020\\_APPA.pdf](http://publichealth.lacounty.gov/media/Coronavirus/docs/HOO/HOO_Safer_at_Home_for_COVID_04102020_APPA.pdf)
- 27) Should post Social Distancing Guidelines at their sites.

#### **Flyers:**

- 28) Shall not be accompanied while at the launch pad without ROC permission.
- 29) Shall practice Social Distancing while socializing on the flight line.
- 30) Shall not socialize in groups of more than 5 persons.
- 31) Should not congregate or hang-out at the registration table or range head.
- 32) Should use social distancing at your home base. If someone approaches you, remind them about social distancing.
- 33) Should regularly disinfect/sanitize your vehicle/workspaces (table, computer, coolers, tools, rockets, pens/pencils, phones, etc.).
- 34) Should de-clutter you work area and surfaces to easily allow for frequent sanitization efforts.
- 35) Should not allow others to handle rockets or items of a more personal nature such as cell phones, headphones, keys, etc. and avoid touching these items without clean hands. Remember to sanitize your hands after handling money.
- 36) Should consider that talking on the phone with the phone to your ear causes you to touch your face. Consider using a wired/wireless headset or speaker phone.

#### **Guidelines for Wearing Masks in the Heat...**

- 37) Don't wear an N95 or P100 type respirator, that's not the point of the face coverings and they will quickly lead you to overheat.
- 38) Face Coverings go with the 6-foot separation, not in lieu of remaining separated.
- 39) Cover your chin, mouth, AND NOSE...that's kind of the point.
- 40) When at your own work area and only with household members, take off the mask so that you can cool down.
- 41) When walking to retrieve a rocket, take the mask with you, but don't wear it after you clear the rangehead.
- 42) When within 50 feet of the registration/range head area, wear a mask at all times. (Note: 50 feet is the width of the safety corridor).