

# WINTER DESERT RANGE SAFETY

## High-Power Rocketry Overnight Launches

**Applicable to:** Winter HPR launches, desert sites, overnight camping

**Primary risks:** Sun exposure, cold stress, wind, dehydration, fatigue

### 1. ENVIRONMENTAL HAZARDS (WINTER DESERT)

- Strong UV exposure despite cold temperatures
- Large temperature swings (warm days → freezing nights)
- High winds and wind chill
- Extremely dry air → dehydration
- Minimal natural shelter
- Long periods of standing still on the flight line

**Key reality:** *Cold masks sun damage and dehydration until symptoms are advanced.*

### 2. SUN EXPOSURE & UV PROTECTION (DAYTIME)

Sun protection is **mandatory safety equipment**.

#### Required / Strongly Recommended

- Broad-spectrum sunscreen **SPF 30–50**
- SPF lip balm
- UV-rated sunglasses
- Long sleeves and gloves
- Wide-brim hat or neck gaiter

#### High-risk areas

- Face, nose, ears
- Neck and jawline
- Hands and wrists
- Under the chin (ground reflection)

#### Reapply sunscreen every 2 hours

*Cold air ≠ low UV exposure.*

### 3. EYE SAFETY

- Use **UV-rated sunglasses** when not actively prepping motors
- Avoid dark lenses without UV protection
- Wind and dust increase eye strain and reduce situational awareness

*Eye fatigue affects tracking, range calls, and reaction time.*

### 4. COLD & WIND MANAGEMENT (DAY → NIGHT)

#### Clothing Strategy

- Moisture-wicking base layer
- Insulating mid-layer (fleece/down/synthetic)
- Windproof outer shell
- Insulated gloves
- Warm hat or beanie

*Avoid cotton—wet clothing accelerates heat loss.*

#### After Sunset

- Temperatures drop rapidly
- Wind chill increases exposure risk
- Standing still causes rapid heat loss

### 5. OVERNIGHT CAMPING SAFETY

#### Shelter

- Wind-rated tent or vehicle windbreak
- Secure tents aggressively (desert soil is deceptive)
- Orient shelters away from prevailing wind

#### Ground Insulation

- Sleeping pad required
- Insulate between sleeping bag and ground
- Do not sleep directly on playa or bare sand

*Cold ground drains heat faster than cold air.*

### 6. HYDRATION & ENERGY

Cold suppresses thirst—**drink anyway**.

- Drink consistently throughout the day
- Use insulated bottles to prevent freezing
- Add electrolytes during long range days
- Eat small, calorie-dense snacks regularly
- Limit alcohol and excessive caffeine

*Dehydration worsens cold stress and fatigue.*

### 7. FIRE, HEAT & FOOD (SITE-DEPENDENT)

- Follow site rules for stoves or fires
- Camp stoves preferred for controlled heat
- Hot drinks before bed help maintain core temperature
- Eat before sleeping—fuel generates heat

### 8. OPERATIONAL AWARENESS

Cold, sun, and fatigue degrade judgment.

- Take breaks out of the wind
- Rotate tasks within teams
- Watch for signs of cold stress or sunburn
- Speak up early—minor issues escalate fast in cold environments

*Range safety includes **personal readiness**.*

### QUICK PERSONAL GEAR CHECK

- ☐ Sunscreen (SPF 30–50)
- ☐ SPF lip balm
- ☐ UV sunglasses
- ☐ Layered clothing system
- ☐ Insulated gloves & hat
- ☐ Insulated water bottle
- ☐ Sleeping pad & cold-rated bag
- ☐ Headlamp + spare batteries

### FINAL NOTE

Most winter range incidents are **environmental**, not rocket-related. Manage sun, cold, wind, and hydration—and the launch stays safe and enjoyable.

*Fly smart. Stay warm. Protect your skin.*