FAR-Unlimited May 22-25, 2026

$50 Registration Fee + $10 FAR daily per attendee fee

This rocketry competition is open to college, university, and 'experienced' high school teams.

- **Unlimited class:** Team picks their targeted sim altitude, any motor, commercial or experimental.

Competition Scoring:

- Combination of closest to their target altitude, mission option & success and motor type used.
- Rocket must be recovered in reusable condition to avoid a 20%-point penalty.

Competition requirements:

- Minimum 2.2-lbs (1.0 kg) payload and should be removable as a separate unit from the airframe. Payload may include avionics, video cam, telemetry, and payload option. Minimum 3" (75 mm) airframe
- Redundancy required in the following systems:
  - o Two motor igniters, dual ejection system per stage, dual altimeters/flight computers; at least one altimeter must be an approved COTS (commercial off the shelf) to be used for altitude verification.
- Dual deployment. Main deploys 500' – 2000' AGL. No component should exceed 100 ft / sec during recovery.
- Tracking system required. Either GPS telemetry, radio beacon, or other approved in advance location method.
- Minimum K-impulse motor required (1,280 N-sec), maximum 200,000 pound/sec and 150 km (your FAA COA)
- Choice of payload 'mission' options required (see below) with points awarded for **successful** completion.
- Open Rocket file (http://openrocket.info/) of launch vehicle to be **emailed no later than May 17, 2026**.
- Design and construct a nose cone or other rocket location that successfully carries a minimum 500 ml of water and safely releases the water at or after apogee to be dispersed in the air that demonstrates safe 'ballast'.

Bring to the event:

- FAR fees/waivers https://friendsofamateurrocketry.org/wp-content/uploads/2023/08/FAR-User-Agreement-Rev-B.pdf
- One page rocket specification sheet with payload option indicated (See Sample provided).
- Pre-flight and Launch Checklists: Everything needs to be turned on before the igniter is installed for launch.

Competition consists of the following 3 phases:

1. Check In and inspection: **Friday, May 22: 5 PM – 11 PM,** and **Saturday, May 23: 6 AM – 9 AM**.
   a. Your rocket will be inspected to ensure that it meets safety standards.
   b. Review of your specification sheet, pre-flight and launch checklists.
   c. All rockets *need to pass inspection prior to 9 AM Saturday* morning before launching.
   d. After inspection and review your team will receive a flight approved launch card.

2. Flight and Recovery: launch day **Saturday 7 AM – 6 PM** and **Sunday 8 AM – 3 PM** depending on need (weather). (WARNING: Wind typically picks up in the afternoon, be prepared to launch early)
   a. Present your flight card to the RSO/LCO.
   b. You are limited to 1/2-hour set up pad time for solid motors, 1 hour for hybrids and bi-prop motors.
   c. Please be ready to fly no later than noon on Saturday. Bring your own launcher if more time is needed.

3. Post flight inspections: **Saturday 12 noon – 8 PM, later or Sunday if flights are needed.**
   a. Bring your recovered rocket for post flight inspection and to determine reusable (flyable) condition.
   b. Inspectors will record measured altitude from the COTS altimeter and note it for posting on score board.

Launch rails provided: 10-foot 1010 rails, 20- and 40-foot 1515 rails, towers are available per FAR website or BYO.
Please bring at least 2 igniters to the event for your rocket motor. Deployment Black Powder is available on request.
Free camping is available at the site on Friday and Saturday. Motels are available in California City, Mojave, Palmdale-Lancaster are ~ 1 hour away.

Registration limited to the first 15 team registrations received

Please limit team participants to under 15 members

For information and registration: rocketrycontest@gmail.com

*PLEASE NOTE: FAR-UNL, FAR/Mars, FAR-OUT, TCPF, and DPF are different FAR offered competitions/challenges.

Scoring

- Highest score wins.
- The percentage of target altitude reached times the multiplier. Multiplier over 100 awarded if in target range.
  - x100 for selected flight target under 10,000'   x105 for selected flight target 10,000-15,000'
  - x110 for selected flight target 15,000-20,000'   X115 for selected flight target 20,000-25,000'
  - x120 for selected flight target >25,000'
- Additional points added to score for Bonus Points and Payload Option (see below).

Bonus Points:

- 500 points: For experimental solid (non-COTS) motor…use of student-built motor encouraged.
- 1,000 points: For use of a commercial hybrid motor; 1,500 points for SRAD experimental hybrid motor.
- 2,000 points: Added if the motor is a nitrous oxide bi-propellant liquid; 2,500 for other oxidizers.
- 1,000 points: For using a 2-stage rocket; extra 500 points if staging/ignition is successful.
- 500 points: For a two-minute team build you tube video …due at or before May 23, 2026, inspection.

Payload Option: To qualify, teams **must** attempt one or more of the following payload options:

- 2,000 points: Remotely Radio-Controlled Rover. Rocket must deploy a rover that leaves the rocket and travels a minimum of 10 feet from the rocket after touchdown with live video on the ground from rocket landing to the receiving station till at least ten feet of distance has been traversed after leaving the rocket. Video required!
- 3,000 points: For an autonomous rover that returns autonomously to a designated GPS location with live video.
- 1,500 points: Remote Sensing. Upon landing, a remote video camera will record the landing surroundings in a 360-degree horizontal panorama for transmission to launch control. Note: 360-degree fish-eye video cams do not qualify. The 360-degree video must be autonomously or RC rotated imaging the landing surroundings.
- 1,000 points: Reconnaissance. Glider deployment below 400' on rocket descent with live video transmission.
- 2,000 points: Reconnaissance Return. Release of drone below 400' altitude or after landing with live video during drone return to a designated GPS location near the launch pad by autonomous or remote control.
- 1,000 points: resupply mission, rocket carries additional 2-liters of water deployed separately on chute
- 500 points: Live Video. Rocket must transmit live video from liftoff to touch down.
- Live videos must be seen by judges or recorded by the launch area receiving station for viewing by the judges.
- 500 points: For an approved user defined scientific payload that is contained in a CubeSat or CanSat form factor.
- 500 additional bonus points: A secondary onboard video source recorded to a memory card during the flight.
- ***Full points are awarded for successful payload mission completion; 20% less if unsuccessful.***

Rocket specification sheet: Your specification sheet **must** include the following:

- Your school's name.
- Name of team leader, phone number, email address.
- Competition target altitude.
- Motor type (commercial or experimental) solid, liquid, or hybrid selected
- Motor class and total impulse (must be greater than or equal to 1,280 N-sec but less than 800,000 N-sec).
- Total liftoff weight, total length, and thrust to weight ratio of rocket.
- Center of pressure and final center of gravity clearly marked on airframe.
- Type of launch rail required…we have 1010 and 1515 rails and adjustable towers for rockets without guides.
- Type of altimeter/flight computer used…competition scoring to be made with the mandatory COTS.
- Payload option and weight.
- Tracking type (GPS, RF beacon and frequency, or other).
- Video transmission frequency.
- Contact information (name, phone number, and email address). Also place contact information on/in the rocket.

PLEASE NOTE: Rockets may be on the launch pad for 30 minutes or more before launch. Please size batteries accordingly. Any additional 'ballast mass' for stability must be in the form of water or sand for safety.

Teams are limited to 15 members at launch site unless permission is obtained for more.