Go Ballistic Rocketry Competition

Official Rules & Scoring Regulations

Revision 1.0

SECTION 1 — COMPETITION OVERVIEW

This competition challenges middle and high school students to design, build, and fly a rocket as close to a target altitude of 700 feet and safely return in 32 seconds within 100 feet of the launch pad. Flights will be evaluated on altitude, timing, and landing accuracy.

All elements of rocket design, preparation, and flight are to be done by student members of teams. Only student team members -- no teachers, mentors, parents, or non-team members may construct any part of the rocket, go onto the flying field or assist with rocket preparations before flight.

All participants are expected to demonstrate safe, responsible rocketry practices as defined by National Association of Rocketry (NAR) rules and regulations as identified in the Model Rocket Safety Code of the NAR and communicated by field NAR Range Safety Officers (RSO). NAR authority is absolute and non-negotiable. All participants must abide by the Washington Aerospace Club (WAC) requirements for liability waivers and flight cards. WAC and other individual NAR members will be available to guide all participants. Participants and their family members are not required to be members of NAR or the WAC (although its really cool if you join!).

SECTION 2 — VEHICLE REQUIREMENTS

#	Requirement	Detail
2.1	**Motors**	All propulsion motors must be F-class or lower per NAR/TRA motor classification standards. No motor(s) above 80N/S total impulse will be permitted. Motors must be retained in the rocket during flight and at ejection by a positive mechanical means (clip, hook, screw-on cap, etc.) and not retained simply by friction fit inside the motor mounting tube. If this mounting tube end sticks out at the base of the rocket, it is permissible to retain the rocket motor by exterior wraps of non-heat-sensitive tape (not cellophane or masking tape) that adhere to both the end of the exposed motor mounting tube and the exposed end of the motor casing.
2.2	**Recovery System**	Every unconnected rocket part must be equipped with at least one functional recovery system (parachute, streamer, or equivalent) capable of returning the vehicle safely to the ground. Light weight passive tumble, helicopter, glider or other types of recovery must be approved by WAC prior to launch.
2.3	**Flight Body**	Rockets must be designed and constructed as single stage reusable flight bodies. No two stage, single-use or intentionally destructive designs are permitted. Rockets

		using E and F class motors must fly using 1010 T-slot rail guides or buttons. All flight bodies must launch by rail or rod (no free flight takeoffs). Flight bodies must meet NAR safety standards but otherwise can be of any design.
2.4	**Range Safety Officer Approval**	All rockets must be presented to and approved for flight by the designated RSO prior to any flight attempt. The Safety Officer's ruling is final and may not be appealed.
2.5	**Disqualification Flights**	Going Ballistic, exceeding the borders of 60 acres, or any unsafe flight as identified by NAR automatically disqualify the flight attempt. Motor or ignition failure may be allowed a second flight as decided by the Judges.
2.6	**Electronics**	At a minimum, each rocket must have an on-board altimeter able to communicate apogee to the returns table after rocket recovery. Altimeter failures may be allowed a second flight as determined by the Judges. Rockets may not be controlled from the ground by any electronic means while in flight.

SECTION 3 — SCORING SYSTEM

3.1 Altitude Score

The competition target altitude is **700 feet apogee**. Apogee altitude will be measured by onboard altimeter. In the event of altimeter failure, the flight will be scored as Disqualified.

For every foot (exceeding or shortfall) not 700, a score of one point will be assessed. Example: You fly 720 or 680, both would give you a score of 20. A perfect score is 0.

3.2 Timing Score

The competition target timing is between **30 and 32 seconds**. Timing will be measured from the moment the rocket moves on the pad until the first component touches anything (ground, tree, etc.) Timing is measured by the NAR judges.

For every second, or part thereof not between 30 and 32 seconds, a score of one point will be assessed. Example: You fly 28.5 or 33.5 seconds; both would give you a score of 1.5. A perfect score is 0.

3.3 Target Score

There will be a 100 foot circle identified around the launch pad. If the main part of your rocket (as accepted by the Judges) falls within the 100 foot boundary, then any one score may be reduced by 2 points

3.4 Total Score

Altitude Score + Timing Score – Target Score = TOTAL SCORE. Lowest score wins! In case of any ties the judges shall choose (their sole opinion) the most innovative design.

3.5 Tie Breaker - FLY-OFF

In the event of a tie, all tied teams will fly again. Rounds continue until one team achieves the lowest total score and is declared the champion.

SECTION 4 — SAFETY & CONDUCT

- Participants must comply with all range safety commands immediately and without question.
- All launches must occur from the designated launch area, using approved launch equipment.
- No ignition may take place without explicit clearance from the Range Safety Officer (RSO).
- Recovery must be conducted safely; participants must not enter the range until all-clear is issued.
- Any participant deemed to be acting in an unsafe manner may be removed from the competition at the Safety Officer's discretion.

SECTION 5 — CONTEST AWARDS

	$500