

## APRSAF-20 Water Rocket Event – Rules for Launch Competition

1. APRSAF-20 Water Rocket Launch Competition will be held at Hanoi University of Education on Sunday 1 December 2013 (Add: #136 Xuan Thuy road, Cau Giay district, Hanoi, Vietnam). All competitors will make their water rockets at the preparation site - Vietnam Space Technology Institute (STI), Vietnam Academy of Science and Technology (VAST), No 18, Hoang Quoc Viet Road, Cau Giay District, Hanoi, Vietnam on the same day before moving to the field for the contest.



Figure 1: Hanoi University of Education



Figure 2: Vietnam Space Technology Institute

2. All materials to make and launch water rockets, including launcher and hand pump, will be provided by the organizer. Pre-made materials or launchers brought in by participants will not be allowed for the competition.
3. Each competitor should make two (2) rockets. Each student will receive:
  - a. Six (6) 1.5 litre PET bottles
  - b. Plastic sheets
  - c. Tape
  - d. Scissors
  - e. Penknife
  - f. Ruler
  - g. Plasticine
4. The competitors are encouraged to be creative in the design of the nose cones and fins of their water rockets.
5. The launch aims at precision flight of the rocket. A target will be placed with the centre 70m from the launcher

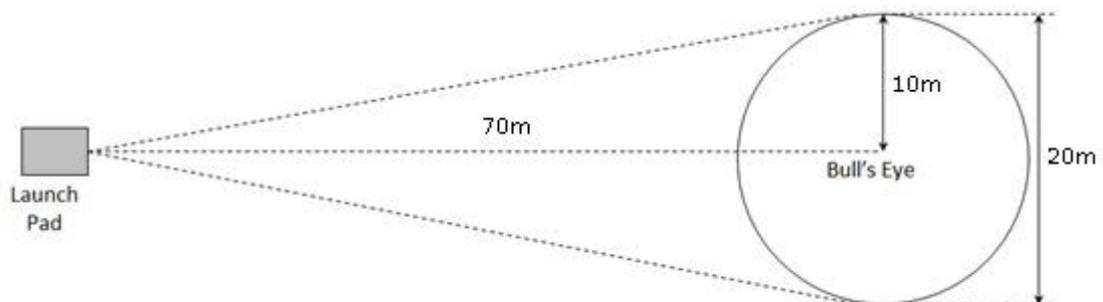


Figure 3: Water rocket launch target site setup plan

6. The distance will be measured from the centre of target to the point of impact. The rocket that lands closest to the target centre get the best score.
7. At the time of launch, each competitor may adjust the volume of water, air pressure, launch angle and launch direction. There is no limit on water volume but air pressure must not exceed 80psi (5.516bar).
8. Each competitor will be given an opportunity to conduct 1 test launch prior to the competition.
9. During the competition, each competitor will be given opportunities to conduct two (2) launches. Exact distance from the point of impact and the centre of target will be measured. The result of the two launches combined will be recorded. Any rocket that lands outside the 10m radius of the bulls-eye will record a score of 20m.
10. There will be three (3) launchers, and the competitor will launch one (1) rocket at a time. The other 2 competitors can prepare their rockets and wait for their turns.
11. In order to reduce the possibility of error. The competitors will draw lots of their launching sequence and assigned with the respective launchers. In this way, they can practice with the assigned launchers during the trial launching.
12. The competitor who achieves the best score, i.e. the best combined measurement of the 2 launches as stated in item 8, will be declared the winner of the Launch Competition.
13. In case of a draw, there will be a third launch between the competitors to determine the winner.