

More Q and A about the Midwest Space Grant 2014-2015 High-Power Rocketry Competition
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7. Will there be black powder available at the launch site?

A. Yes, as well as motors, e-matches, motor casings, etc. However there will be finite quantities of all these items so if you know you want to buy some motors on-site, for example, let Gary Stroick know in advance so that he can ensure they are there and are reserved for your team.

8. May we house friends and family in the hotel room block?

A. When you send us your number of competition attendees (due Feb. 13 – you are not required to bring your entire team, though we hope you bring as many team members as you can) you are welcome to also tell us how many others will be requiring housing and we will see if we can get large enough room blocks for everyone. If not, priority will be given to team members, advisers, and judges. If we run out of hotel rooms in North Branch (it isn't a very large town) we'll circulate recommendations about hotels in nearby towns where people could stay if need be.

9. Do we need to produce plots of acceleration data? The user manual suggests that we need to, but it doesn't require us to actually collect acceleration data during the flight, just rotation data.

A. Requests for plots of "Acceleration Performance Comparison of Predicted and Actual" are from an earlier competition and should not have been included. Instead, the request to "Compare logged rotation and compare with rotation in the video record" (page 19) may well include graphs, but they are not explicitly required. If you log acceleration data (probably with a commercial altimeter), by all means talk about that in your reports. Even if not, you should at least pay attention to your predicted peak acceleration (it tells you something about how tough the rocket needs to be built) and compare that to the actual peak acceleration (which you can get from the Altimeter Twos, so you don't necessarily have to go out of your way to measure it) in your post-competition reporting.

10. What should we use to fire the ejection charge(s) for the dart's recovery system?

A. You must fly your own commercial rocketry altimeter in the dart to fire ejection charge(s). Remember – the competition-provided Altimeter Two units only log data (despite the name) – they are unable to fire ejection charges. You may also rig your non-commercial electronics to fire ejection charge(s), but only for redundancy – not as the sole mechanism. If you would like advice on types of rocketry altimeters with various features (and various prices), contact Gary Stroick or any Level-2-or-higher Tripoli member.

11. May we fly a camera in the booster for pre-separation footage, and only get post-separation footage from the dart?

A. No. Video footage for competition consideration must come from the dart. However video footage is only worth a limited number of points, and pre-separation footage only some fraction of that number of points, so if it is genuinely advantageous for you not to collect pre-separation footage you might unilaterally cede those points and design to suit. Pre-separation footage is unlikely to be great – no matter how you mount the camera in the dart the booster is likely to impede the view to some degree.

12. Do we need to have a Tripoli-certified member on our team to fly this rocket?

A. Typically only a Level 1 Tripoli-certified member (or higher) may fly an I-445 motor at a Tripoli rocket launch. However for this event Tripoli MN is working with the competition

organizers to allow Tripoli-certified members “sponsor” competition rockets if a team does not include a Tripoli-certified member.

13. Will we lose points if we don’t put radio tracking in our dart?

A. No, but you will lose lots of points if you cannot find your dart – hence the recommendation of radio tracking.

14. Is the new competition flight scoring formula ready yet?

A. Yes – here it is. This replaces the text at the bottom of page 18 in the manual. We will post an updated manual soon.

Modified Scoring Formula

Teams will score points based on the formula:

Flight Score = 0 (AKA disqualification) if rocket is not recovered in flyable condition or if the flight is deemed “unsafe” or in violation of competition rules, even if the rocket is undamaged. This is at the judges’ discretion. Rockets may be disqualified for things like unstable ascent, too-fast descent, having explosive events during ascent (not allowed), not deploying both recovery systems, etc. Failure to separate on ascent will not be considered a reason for immediate disqualification if the rocket recovers properly (i.e. deploys both recovery systems on descent).

*Flight Score (if not disqualified) = 15 points (for having a safe flight) **PLUS**
42.5* (Dart Peak Altitude / Maximum Competition Dart Peak Altitude) +
42.5* ((Dart Peak Altitude – Booster Peak Altitude) / Maximum Competition
Dart:Booster Separation Achieved)*

Notice that no less than 15 points will be awarded to rockets that safely fly and are recovered in flyable condition. There is a maximum of 100 points from the Competition Flight that will be scaled for the final score. If a rocket is flown multiple times during the competition, the best score will count (even if one score is a zero). However the Tripoli MN members running the launch might not allow launching a rocket that appears to them (in advance) to be fundamentally unsafe, so don’t expect to bend the safety limits with potential multiple flights.