

Additional FAQ's about the 2016-2017 Midwest High-Power Rocket Competition

Written up at the end of fall semester, 2016, to follow the FAQ's posted in September 2016.

14. Can we change the diameter of the motor and motor mount by inserting a phenolic tube with centering rings to take it from a 54 mm to 38 mm, or other diameter change?

A: Yes, you are allowed to select motors that have different diameters in which case you will want to use a motor-mount tube that can accommodate more than one diameter of motor. This is an "internal" change - remember that you are allowed to make internal changes between flights and between motors, but not external changes. The rocket must look the same (from the outside) prior to each launch and also look that same way as it approaches apogee (so if you deploy anything during coast you need to retract it before apogee).

15. Can we change the parachutes used between flights?

A: Yes. This would also be considered in "internal" change. There might be a variety of reasons to consider using different parachutes including, but not limited to, being ready to deal with various types of wind/weather conditions on launch day.

16. Will black powder be provided at the launch?

A: Yes, though most teams will provide their own since they will need black powder (or Pyrodex) for test flights anyway.

17. Any chance we can use AeroTech motors rather than Cesaroni motors?

A: Yes. See motor note – circulated (and posted) separately.

18. Can we get permission to remove the ejection charge that is connected to our rocket motor, and only use our own ejection charge that will be connected to the bottom of our avionics bay.

A: No, though we do realize that leaving the motor ejection charge in place may influence some of your other design decisions. Gary Stroick is willing to offer one-on-one advice to teams who are struggling with the motor-eject requirement (mostly because of a design which places something other than a drogue parachute directly above the motor).

19. Can our Level 2 mentor be a (student) team member?

A: No. We believe it is valuable for each team to have a non-student, non-team-member Level 2 mentor. This can be your faculty adviser, if they have at least a Level 2 certification, but even then it might be best to have an even-more-impartial mentor from outside to give you feedback on your design and monitor your construction and test flights, especially with an eye toward safety. Gary Stroick can help arrange for a Tripoli mentor if you are struggling to find one.

20. Do faculty advisers and mentors need to attend the competition in May?

A: No, but we encourage teams to bring them along if at all possible. States sponsoring more than one team in the competition are required to provide a judge (who does have to come to the competition), so one of the team mentors might be an obvious selection for such a judge. We are OK with competition judges also serving as team mentors, despite the potential for a "conflict of interest."

21. Are individuals or teams allowed to attend the competition without entering it?

A: Yes, the competition won't be on a Tripoli MN "public launch" date so it probably won't be advertised on their website, but presentations and competition flights (but not the post-flight banquet) will be open to the general public, including students on non-involved rocketry teams.

On the other hand, if any team is considering making a long trip just to be in attendance, we strongly encourage them to take the time to build a competition rocket to fly – that will make it a much more valuable learning experience.

22. May a (Native American school) team that is entering this year's AISES competition (basically our "Active Drag" challenge from last year) enter that same rocket in this competition?

A: Yes. These two competitions are similar enough that a single design might be able to compete in both. However, as mentioned in FAQ answer #5, we will not allow teams who were in our competition last year to simply return with last year's rocket.

23. When can we sign up for hotel rooms?

A: In February, 2017, we will collect information from teams about how many people they will be sending to the competition and how many hotel rooms they expect to need. We will then approach local hotels and have them set aside room blocks, which we will then announce to teams (perhaps by early March). There are only 2 hotels in North Branch so, depending on the number of people planning to come, we might need to spill over into hotels in nearby towns. Based on experience in past years, we expect hotel rooms will run from \$80 to \$100 per night at most hotels. Be sure to ask for explicit permission before planning to put more people in any one room than there are beds in the room – we need to stay on good terms with these hotels.

24. Does velocity need to be measured during the entire flight or just during the rocket's ascent?

A: Ascent only will suffice, though some solutions might be able to do the whole flight.

25. Does the handbook statement that the rocket must be recovered "in flyable condition" mean that it must be totally undamaged? For example, would a flight that breaks a non-critical item on landing (like a camera mount for a pilot tube) automatically be disqualified?

A: Basically this will be a call for the on-site judges but we will encourage them to take the word "flyable" very seriously. If a pitot tube snaps off, for example, the rocket technically could be reflown (though it might not do everything you hoped it could do) so that would NOT mean automatic disqualification. If a rocket breaks a camera mount on landing, for example, that probably would also be deemed "reflyable" and if you could replace the camera mount between flights then you'd be fine. If a rocket loses its nosecone in flight or breaks its nosecone upon landing, for example, it would NOT be considered "reflyable" but if you can repair the damage you could re-do that flight and then proceed. In general, try to design rockets that are modular/fixable so that you can deal with potential (minor) damage. Bring spare parts and repair tools!

26. Do we have to call in to the telecon on January 19, 2017, if we were on the line last October?

A: No, though doing so might be useful if (a) you have new team members we didn't listen in last October and/or (b) if you now know more of what you are doing and hence want to be able to ask more detailed questions than you did last fall. Contact James Flaten for call-in details if you need them.