1. Are we allowed to use breakers instead of fuses for the LiPo power system?
Answer: No.

2. Are we allowed to put fuses in parallel for the Lipoa power system?
Answer: No, a single fuse per battery pack is required.

3. Answers #16 and #50 [from Q&A#1] indicate that our banner cannot be pre-packaged or pre-folded prior to the ground mission, and also that the banner must be folded/packaged during the ground mission. Does the banner have to be fully-unfurled (e.g. laid flat on the ground) before the ground mission begins? Or can it be crumpled/partially folded in order to fit within the mission box?
Answer: The banner can be minimally folded or crumpled in order to fit inside the mission box, but it must be fully unfurled prior to folding for the mission.

4. If the banner must be fully-unfurled when the ground mission begins, does the banner have to lie completely within the 10ft x 10ft mission box? If so, does this effectively limit all banners to a maximum length of 10ft?
Answer: In accordance with question #3 above, the banner must be contained within the mission box at the start of the mission.

5. In any case, can the assembly crew member and/or part of the banner exit the bounds of the mission box at any point during the ground mission during the folding of the banner?
Answer: Yes, the requirement is that everything is inside the mission box at the start of the mission.

6. Can the passenger be secured using a harness or other mechanism that otherwise uses the neckline on the passenger to stop movement in the vertical direction? (The passenger would be secured by a "seat" to stop movement in all other directions). The confusion came from the answer that a noose could not be used to secure the passenger. While this makes sense, it gives the idea that the neck area of the passenger is off-limits for any kind of restraint.

Referring to question and answer 79 [from Q&A#1]: Are we allowed to have a restraint system that holds the passenger in place at the neck?

I was looking for clarification about whether the restraint system can or cannot be around our passengers’ necks. And is anything that goes around the passengers’ neck considered a noose, or does it have to go all the way around. Just want to make sure we follow all rules in designing our restraint system?

Answer: Restraints similar to a shoulder strap adjacent to the neck on the “shoulder” of the passenger is acceptable.
7. At the tech inspection, we report for example 3 banners: 3 feet, 9 feet, and 12 feet.
   Question: Can we do the GM with the shortest one?
   The rules don't specify which banner is to be used for the ground mission. Can we use any banner that passes tech inspection, or does it have to be the largest banner that is checked?
   Answer: The GM can be executed with the banner of the team’s choice that has been approved in tech inspection.

8. Referring to question and answer 25 [from Q&A#1]: Considering the passenger and luggage mechanism, what is the definition of 'into the aircraft'? Can the passenger compartment be pulled out of the fuselage completely or at least partially?
   Answer: No part of the passenger compartment can be removed for passenger or luggage loading or unloading.

9. Referring to question and answer 56 [from Q&A#1]: Are we allowed to take, for example, two or more passengers into the hand when loading the passenger system? What means 'one at a time'? The same for the deloading, can we grab two or more elements by hand at a time?
   Can multiple (2+) passengers be in the process of being loaded as long as they are entering the aircraft at different times (such as while using two hands, or holding more than one passenger in a hand)
   Answer: Only one passenger or luggage can be loaded into the aircraft at a time. There is no limit on how many the assembly crew member can have in his or her hands at any given time.

10. If we use a device that prevents the banner from touching the propeller, does extending this device count to the ground mission time? Does it have to be extended during the ground mission?
   Answer: Deployment of the banner is not part of the GM time. Demonstration of banner deployment in order to complete the GM requires deployment identical to flight.

11. Can we use a net to secure the luggage similar to real-life airplane cargo nets?

   Answer: Yes, this is acceptable.

12. For the passenger compartment, can we have a low slot or wall between the two rows of passengers (but only goes maybe halfway up) that the “seats” / straps are attached to?
Would that be considered to divide the compartment, even though the upper half of the compartment is open?

Answer: As presented in the sketch, this is acceptable.

13. The passenger and luggage compartments can be moved within the fuselage or removed from the fuselage to assist with CG adjustments?

Answer: Nothing can be removed from the fuselage during passenger/luggage loading or unloading. Adjustments within the fuselage for CG control are acceptable.

14. Our current design has a block of soft foam with holes cut into it of a smaller diameter than the passengers. The passengers are then fit inside and held in by friction. When the aircraft is turned upside down and shaken, they do not fall out. Is this a legal restraint system, and if not, what do we need to change?

Answer: Friction is not an acceptable restraint mechanism.
15. We were wondering if during take off the wire from the banner could make contact with the ground?

Answer: The rules specifically state that the banner cannot touch the ground during takeoff and rotation. This includes any part of the banner or anything associated with the stowing and deployment of the banner.

16. How real-life-relevant does the loading of the passengers need to be? For example, is it allowed to take the wings off the aircraft in order to load/unload passengers?

Answer: Removing wings as an external cover on the fuselage as a method to access the passenger and luggage compartments for loading and unloading is acceptable.

17. The rules and Q&A say that the passengers need to be in a single compartment. Is it allowed to run a wing spar through this compartment, ensuring that there is plenty of space above and/or below the spar so that it does not divide the cabin? E.g. as demonstrated in the attached picture. There would be no physical wall dividing the cabin?

Answer: Any structural component spanning the passenger compartment must be below and/or above the head of the passenger.

18. Can the passenger bay and luggage bay have the below restrain system?

Answer: Yes, as long as there is also a physical restraint in the vertical direction.
19. Are we allowed to use a higher mAh battery and use a 200 W power limiter?
Answer: No, the limit is on the amount of stored energy in the airplane.

20. Is it compulsory to have a steerable landing gear?
Answer: No.

21. In regards to the rule of the 0.25 in air gap between batteries, could we have a battery separated by foam with the other battery? Or does it have to be STRICTLY an AIR gap between them?

   My team is planning to separate our two LiPo batteries with a half inch piece of foam. Technically, this is not an air gap. However, I believe the spirit/purpose of rule is for battery safety/insulation. Is a foam legal as a battery separator? Can you advise? Thank you so much for your time and help. I love DBF!

Answer: There must be an air gap between batteries for cooling. Adding foam could have the opposite effect.

22. I have a small doubt regarding dropping the banner, if there is a small component or a rod permanently attached to the banner and it is dropped along with the banner will it violate the rules?

Answer: Any part of the banner required for aero stability and towing can be dropped with the banner.

23. Do passengers need to be placed anywhere specific before loading [for the GM]? Or can they be placed wherever we want?

Answer: The passengers can be placed anywhere within the mission box.

24. Do passengers need to be placed anywhere specific after unloading?

Answer: Within the mission box.

25. Are there any limitations on the type, manufacture, or function of any external tools that can be used to assist with loading and unloading the passengers and banner during the ground mission?

Answer: No, but passengers and luggage must be loaded one at a time without assistance of any tools or fixtures (see Q&A#1, question 25) while loading into the airplane. Fixtures or tools can be used to stage the passengers and luggage within the mission or staging box prior to loading or unloading.
26. If the banner is stowed on one of the wings and extends beyond the wingspan of the aircraft, does this count towards total span? [Please see attached diagram]

Answer: This would not be considered part of the wing span, but the rules require that it cannot interfere with flight controls in the stowed condition. If determined that this would interfere with flight controls or safe operation of the airplane when deployed during tech inspection, it will not be allowed.

27. The rules state that all LIPO batteries must be connected in parallel. Am I correct in assuming that if I connected two 11.1V, 3300 mAh batteries in series to produce 22.2V and then connected the pair in parallel to produce 6600 mAh total, this would be breaking the rules?

Answer: Correct, this would not be allowed in accordance with the rules.

28. The rules also state that each LIPO Battery pack must have an individual inline fuse with the positive battery terminal located as close as possible to the battery connector. I am understanding that one fuse across the entire system between the total power and ground like last year’s competition will not suffice. Is this correct?

If each individual battery pack has its own fuse, does the competition rules still require to have an overall fuse between power (V+) and Ground (V-)

Answer: There is no requirement for an overall power fuse nor has there been one for several years. There is a requirement for an arming plug as defined in the rules and it may be a blade type fuse at each team’s discretion, but not required. If a team choses to us LiPo batteries, a fuze on each battery pack is required in accordance with the rules in addition to the airplane arming plug.

29. I know that some ESCs have overcurrent protection circuitry built into the device, would this suffice as an alternative to the individual fuses?

Answer: No.