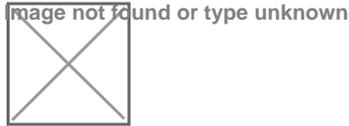


Q&A

RAD 2019-2020



Welcome to the official RAD Competition Question & Answer system, where all registered teams have the opportunity to ask for official rules interpretations and clarifications. This Q&A system is the only source for official RAD rules clarifications, and the clarifications made here are considered as official and binding as the written [Game Manual](#) itself.

Please review the [Q&A Usage Guidelines](#) before posting. This system is only intended for specific RAD rules questions.

- For event, registration, or other competition support questions, please contact your [REC Foundation Regional Support Manager](#).

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Spotters

How far can the spotters move during the challenge? Can they go end to end or do they have to stay in the middle?

Answered by

Visual Observers (spotters) are required to stay in the Visual Observer Station which is considered the entire 51 foot length of the course.

Battery and Propellers

If we need extra batteries and/or propellers, do we have to use Parrot brand or can we use another brand?

Answered by

Plastic parts that are functionally equivalent to their original can be secured from other sources or 3D printed.

Batteries, motors, and electronic components must be Parrot branded during the RAD VLOS season.

3D printing replacement parts for Mambo drones

We are starting to book a number of hours of flight time on these drones, and we are breaking a large number of propeller guards. We have also broken a few airframes. Replacement parts made by the original manufacturer are fairly expensive and hard to find.

Is it acceptable to 3D print replacement parts for the Mambo drones, as long as the replacement parts are functionally equivalent to the original parts?

If 3D replacement parts are allowable for competition use, are there any required or prohibited plastics from which the parts may be made?

If 3D replacement parts are allowable for competition, do they need to be printed with plastic of any particular color?

Answered by

3D printing replacement plastic parts that are functionally equivalent to the original is acceptable in RAD VLOS.

There are no restrictions on plastics or color as long as the 3D printed versions offer no competitive advantage and do not interfere with refereeing.

Use of red and blue propellers is still required to identify each of the two drones in the Race per <D4>.

Using wands for the spotters

1. Can the spotters use marshalling wands to signal their pilot?

Answered by

Use of non-electronic communication tools, including marshalling wands, by Visual Observers is encouraged and is what VLOS is all about!

Modifying Mambo flight settings

Are teams allowed to reprogram the flight settings in the Mambo drone for competition, or must teams compete using the "stock" settings?

Answered by

Teams are allowed and encouraged to modify the flight settings as long as they do not violate any other rules in the process. The virtual ceiling of 10 feet required by <S3> is one example of a setting which cannot be modified to something else.

Completing Course Questions - 10 obstacles & colors

We're starting to practice and I just want to make sure my kids get the proper format for the racing. The manual reads the race is 3 times around and "To complete the Race, the Drone must fly through at least ten (10) Obstacles in course order." Is that all 10 objects each time around? If not, I'm not sure why teams would go through the keyhole. And I guess there is no difference between blue and red arches - both drones are flying through the archways regardless of color is that correct? Thanks.

Answered by

Please remember to reference a Game Manual rule when asking a question. In this case, <R9> refers to completing 10 total obstacles over the course of the entire 3 lap race. Color of obstacles has no significance in VLOS Racing.

Landing Zone Scoring Rings

What are the diameters of the scoring rings? The RAD manual shows two different versions of the landing zone. The page 9 description states 3" from the center with several 2" rings emanating from the center. However on page 11, the image is different. Also, a YouTube video dated 1/26/2020 shows a landing target similar to the image on page 11.

We are constructing our own field emulating the official field and would like to make our own landing zone targets. Thanks.

Answered by

The updated version of the Game Manual clarifies the target size as follows:

Target The thirty one (31) inch area where the Package is delivered that consists of a ten (10) inch bullseye and two (2) five and a half (5.5) inch wide rings.

Direction of Flight

Page 8 of the RAD manual shows VLOS Package Delivery drones flying in a clock-wise direction from the Launch pad. Do the VLOS Racing drones also fly clock-wise? The diagram on page 12 does not indicate a direction of flight.

Answered by

In both VLOS Racing and VLOS Package Delivery, drones fly through the 51 foot length of the field first, resulting in a clock-wise path.

Number of Visual Observers per Team

Page 6 of the RAD manual states:

"Visual Observer Station The area where only the Visual Observers are permitted during the challenge. For a Race, there are two (2) Visual Observer Station, one (1) for each team."

However, the diagrams on page 3 and page 12 shows two observers for each team positioned on each 51 foot side of the field. I believe the manual should state there are four (4) Visual Observer Stations, two (2) for each team.

Answered by

Please see <https://www.robotevents.com/RAD/2019-2020/QA/492> for a clarification of the Visual Observer Station.

Package details?

Package The payload that a Drone must move from the Pickup Location to the Drop-Off Location. The Package is l x w x h and has a mass of xx grams.

What is the details of the package for the VLOS Package Delivery challenge? or where can I find those details?

Answered by

The package is a standard U.S. quarter for VLOS Package Delivery.

Grabber Payload

Is anyone having trouble flying with the quarter? My students are saying they cannot completely make it around the course with the quarter. I watched as they struggled and never made it through the keyholes with the quarter. I checked the specifications (www.parrot.com/us/drones/parrot-mambo-mission) which say the grabber can carry 4 grams. A quarter is 5.67 grams, over 40% heavier. Any information is greatly appreciated.

Answered by

We have not noticed an issue using a quarter in our testing or at events so far this year. We will continue to monitor the situation and make adjustments if needed.

Timer Accuracy

Since time is part of the teams scores, should tenths of a second be considered when timing a team?

If so then how should we be round? Always up, always down, split at .5?

Example: A timer that stops at 1:21.5. Should the score be 81 or 82 seconds?

Answered by

Times should be rounded down to the nearest second during the VLOS season.