



## 2021-22 Design, Build, Fly Q&A #3

Beechcraft

Cessna

Textron Aviation

TEXTRON AVIATION

Raytheon  
Missiles & Defense

AIAA  
FOUNDATION

### General Questions

1. What do you mean by that the maximum number of vaccine packages can also be dictated by the maximum number of vaccines declared at tech inspection?

Answer: You cannot fly more vaccine vial packages than what is declared at tech inspection (which includes the number of vaccine vial packages used in the wing tip test). You can fly less, but never more than what is declared at tech. Also, the Ground Mission requires the number of vaccine vial packages be used that is declared in tech inspection.

2. According to the rules the propulsion power total stored energy cannot exceed 100 watt-hours, in the same way in the first Q&A, the question 20 says that any Lipo battery can be used as long as the manufacturer's label of the battery shows that the total stored energy is less than 100 watt-hours. However, in the second Q&A, the question 12 says that a Lipo battery 6s with 4000 mah can't be used in the competition. Having those aspects in mind, our question is if we can use a Lipo HV 6s battery 4500 mah as long as the manufacturer's label says that the battery has an energy of 99.9 wh.

Answer: To clarify, the question in Q&A #2 was in regard to rounding off the stated battery capacity and allowing a specific battery by not charging to the full capacity. The answer is no to both of these questions as stated in Q&A #2. The response was not in regards to the actual values provided in the example. As stated in the rules, the manufacturer's label will be the sole value for determining a battery's capacity. In the example given in Q&A #2, a 6s battery with 3968 mA\*h, which equates to 88.1 w-hrs, is allowed. In the example given above, 6s with 4500 mA-h equates to 99.9 w-hrs and is allowed in accordance with the rules.

3. Are there any vertical security requirements for syringes and packages (i.e. is it required that they are tightly constrained on all three axes)?

Answer: All payloads must be restrained from movement in any axis to assure stability of the aircraft by not allowing CG shifts due to payload shifts. It must be demonstrated during tech inspection that all payloads are safely secured.

4. Do the syringes need to be secured individually? (I figure this one is no, considering it was said that there are no specific restraint requirements, but given the requirements during past competitions, I want to be absolutely sure)?

Answer: The syringes do not need to be individually secured.

5. Can an individual from the team physically hold the aircraft while it powers up for takeoff. If not can we use a mechanism that is physically controlled by a team member who holds the aircraft?

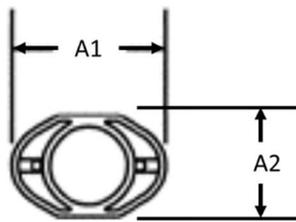
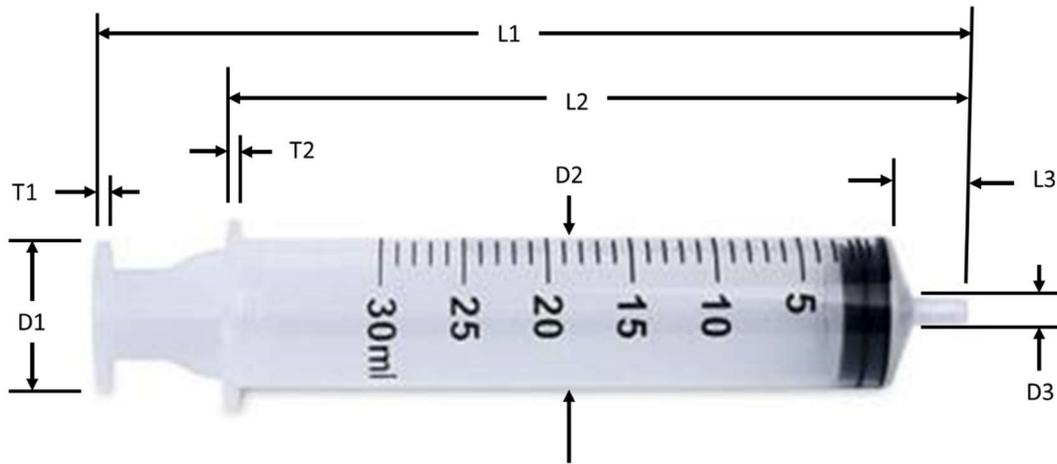
Answer: No to both questions.

6. Our ESC has reverse thrust capabilities. Are we allowed to use this as a form of braking (or in any other facet)?

Answer: Teams are allowed to use an on-board braking system or method of their choosing as long as it is remotely operated.

7. The previous Q&A gives general dimensions of the syringes but does not specify every linear dimension. Some more dimensions we are interested in are the length and diameter of the neck of the syringe and the length and width of the holder plate of the syringe. Would we be able to receive these dimensions?

Answer: A sample of syringes were measured with the following average results:



L1	L2	L3	D1	D2	D3	T1	T2	A1	A2
5.42	4.85	0.54	1.02	0.93	0.18	0.06	0.10	1.69	1.10

(dimensions are in inches)