

Week 9

Q92- If we have our vehicle first move forward by means of a sail, can we put an inverted motor on the front axle that would serve as an alternator and store energy in batteries? And if so, can we send a signal by means of a timer that will turn on the rear axle after about 90 seconds?

Yes and yes.

Q93- Are we allowed to stop the fans before the end of the 90-second period OR turn on the vehicle's mechanism before the end of the 90-second period?

The fans cannot be turned off before the end of the 90-second period. The vehicle's mechanism can turn on by itself (automatically) before end of the 90-second period. However, if you wait until the end of the 90-second period, you will be allowed a single action to turn on the vehicle. See Section 4.6 of the booklet.

Q94- Can the vehicle touch the transformer base inside the circle more than once as it runs laps around the track? There would be no recharging, it would simply serve to redirect the vehicle.

Yes. See Q2 b).

Q95- I noticed that the fans move about during the 90 seconds they are in operation (because of the vibrations and wind they generate, they tend to slide on their little plastic feet).

Since they are official material, the participants are not allowed to modify the fans themselves. Do you plan to modify them to prevent this movement?

See Q86.

Q96- Questions in follow-up to question 87. From the answer provided for question 87, I understand that the vehicle can leave the track without being disqualified. Given this, why bother delimiting the track?

The track is delimited because the fans must be placed outside the 3-m diameter circle. We allow the vehicle to deviate from the circular track momentarily (defined as being the area lying between the inner circle [$r=0.75\text{m}$] and the outer circle [$r=1.5\text{m}$]) to keep a team from being disqualified simply for such a reason. It goes without say that it is not in the interest of any teams to build a vehicle that does not run around this circular track because laps are only counted if the vehicle crosses through the light beam shining along the starting line. Moreover, we do not guarantee that the area outside the circular track will be free of

obstacles (extension cords, time measurement system, etc.). See Q70.

Q97- Based on the answer provided for question 87, a vehicle could legally run short laps around a circle (one that is secant to the official track) that has the starting line as its radius?

No. "N" corresponds to the number of laps around the track.

Q98- A vehicle is connected to the transformer base by an electrical cord. After the 90-second period, disconnecting the cord starts up the vehicle (one action), So, after the vehicle has started, the team member has the electrical cord in his or her hands and the cord is still connected to the fixed base. Does putting the cord down on the base constitute a second action? And if the cord disconnects at both ends, can the team member leave with the cord?

Putting the cord down will not be considered to be a second action. If the cord is disconnected at both ends at once, this will still be a single action that complies with the rules and the team member can leave with the cord.