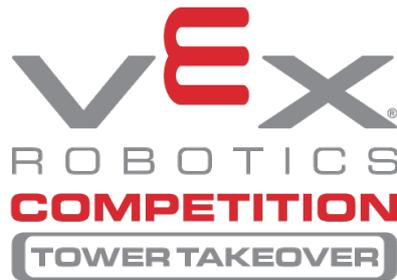


Q&A

VEXU 2019-2020: Tower Takeover

Tagged: G15



Welcome to the official VEX Robotics 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 VRC Tower Takeover rules clarifications, and the clarifications made here from the Game Design Committee (GDC) 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 VRC Tower Takeover rules questions.

- For event, registration, or other competition support questions, please contact your [REC Foundation Regional Support Manager](#).
- For VEX technical support, contact support@vex.com or sales@vex.com.
- For game questions, suggestions, or concerns outside of specific and official rules questions, contact GDC@vex.com.

<G15> Clarification on when trapping is official over.

G15

<G15> "A Trap is officially over once the Trapping Robot has moved away and the Robots are separated by at least two (2) feet (approximately one (1) foam tile). Should the "two (2) feet" be interpreted as a 3-dimensional volume extending upwards? We've had a few matches where a robot base does separate by at least two (2) feet, but the the arms, tray anglers, etc. do not.

Answered by Game Design Committee

Thank you for quoting the relevant rule in your question.

The intent of the 2-foot reference in G15 is to ensure that Robots being Trapped are provided with an ample avenue for escape. If a Trapping Robot has a mechanism that is causing an opponent Robot to be restricted to a small space without an avenue for escape, then the Trapping count should continue.

However, it would not be feasible to expect a Head Referee to visualize four moving 3D volumes and measure their exact distances apart at any given instant. There are situations which may technically result in less than two feet separating two Robot mechanisms, but would not be restricting one Robot to a confined area (such as a tall "tray" hanging over a Clawbot-sized Robot).

Therefore, we cannot provide an overarching blanket statement that would encompass all hypothetical Robot interactions, while being realistic for a Head Referee to judge during a Match. We are going to use G3 to assist in Head Referee judgments involving this scenario:

<G3> Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX Robotics Competition.

Clarification on Trapping: Game Manual vs. Referee Training Video

G15

Is a robot considered trapped while not attempting to escape? There is a major discrepancy between the referee video on trapping and the game manual. In the referee training video, it is stated multiple times that for a robot to be considered trapped it must be actively trying to get out of the trap. However, in the game manual trapping is defined as "A Robot is considered Trapped if an opposing Robot has restricted it into a small, confined area of the field, approximately the size of one foam field tile or less, and has not provided an avenue for escape. Trapping can be direct (e.g. pinning an opponent to a field wall) or indirect (e.g. preventing a Robot from escaping a corner of the field)." By definition, a robot is trapped whether or not it is attempting to get out of the trap. This training video causes the referees to rule trapping incorrectly as it would be believed that the training videos would be accurate to the game manual. However, it is stated in the game manual that "The 2019 - 2020 Q&A is the ONLY official source for rulings besides the Game Manual. If there are any conflicts between the Game Manual and other supplemental materials (e.g. Referee Training videos, VRC Hub app, etc), the most current version of the Game Manual takes precedent." Useful info Game Manual Link: <https://content.vexrobotics.com/docs/vrc-tower-takeover/GameManual-20190816.pdf>

Referee Video Link: <https://www.youtube.com/watch?v=UsFRgTikQVg>

Answered by Game Design Committee

To emphasize a few specific portions of the Trapping definition:

A Robot is considered Trapped if an opposing Robot has restricted it into a small, confined area of the field, approximately the size of one foam field tile or less, and **has not provided an avenue for escape**. Trapping can be direct (e.g. pinning an opponent to a field wall) or indirect (e.g. **preventing a Robot from escaping** a corner of the field).

In order to know whether "an avenue for escape" has been provided, the opponent must be attempting to escape. In order to "prevent" an opponent from "escaping", they must be attempting to escape.

The Referee Training video intentionally goes into additional detail on this point to help make the distinction clear, and there was not intended to be any discrepancy. We will be sure to take this into consideration for future Game Manuals.

Entanglement during a trapping call.

G15

During a trapping count, if the bots become entangled, what is the right call?

Here is a scenario that played out this past weekend, more than once.

Blue alliance is trying to score in their goal zone, and gets rammed by red alliance.

Blue does not make an action to leave, continuing to attempt to stack.

However they then try to fight off the defending robot by backing up to push them off, thus causing a trapping count to begin from the referee. It is apparent that in the process of backing up the robots have become entangled, with the anti-

tip mechanism of the defensive red robot getting caught on the frame of the blue bot. Blue still has a set of cubes and is attempting to score, but cannot disconnect from the red robot. As a result their movement is restricted for roughly 25 seconds, but at the same time, blue has been trying to score the whole time.

The training videos stress that even if the offending robot becomes stalled during a trap, the trapping count continues. Is this true for entanglement as well, assuming it to be accidental in nature? What is the proper way to respond to a robot that becomes entangled while trapped.

Additionally if a trapping count starts, and the trapped robot stops trying to escape and attempts to score, is the count continued, paused, or canceled?

Answered by Game Design Committee

In the specific scenario you have described, G13 would take precedence:

<G13> Offensive Robots get the “benefit of the doubt”. In the case where referees are forced to make a judgment call regarding a destructive interaction between a defensive and offensive Robot, or an interaction which results in a questionable rules violation, the referees will err on the side of the offensive Robot.

The snapshot description implied that Blue was clearly playing offensively, and Red was clearly playing defensively (Trapping is, by definition, a defensive interaction). A Team is responsible for the actions of its Robot at all times; a Robot which has engaged in objectively defensive behavior has assumed an element of risk under G13.

The training videos stress that even if the offending robot becomes stalled during a trap, the trapping count continues. Is this true for entanglement as well, assuming it to be accidental in nature? What is the proper way to respond to a robot that becomes entangled while trapped.

Entanglement during Trapping should be handled similarly to a stall. Again, because a Robot is responsible for its own actions at all times, a Robot which chooses to engage in this strategy should be prepared to minimize the risk of any Entanglement, stalling, or other situations which could turn the legal Trap into a G15 violation.

Additionally if a trapping count starts, and the trapped robot stops trying to escape and attempts to score, is the count continued, paused, or canceled?

This question is answered in the [associated Referee Training video](#), around the 2:00 time.

Attempting to score in the non-protected goal zone

G15 SG3

At a recent tournament, when teams were trying to score in their non-protected goal zone faced near-constant defense (bumping, etc.) before any of the cubes were released and met the definition of scored. Many teams complained that this was a violation and said that it had been called as a disqualification at previous events. We were unable to find anywhere in the rules that this was illegal. The closest two rules that were argued was that it could have constituted trapping

G15 No Trapping for more than 5 seconds

Or that it could be a violation of the second clause of SG3

"Robots may not intentionally or accidentally, directly or indirectly, perform the following actions: B Contact any Scored Cubes in either of opposing Alliance's Goal Zones"

Neither of these arguments seemed to be valid to us, but we didn't know if there was something we were missing.

So to summarize, can you bump a robot that is in the process of scoring in the non-protected goal zone before its cubes have met the definition of scored?

Answered by Game Design Committee

can you bump a robot that is in the process of scoring in the non-protected goal zone before its cubes have met the definition of scored?

Please see these two similar Q&A's for reference:

www.robotevents.com/VRC/2019-2020/QA/288

www.robotevents.com/VRC/2019-2020/QA/296

As well as the Referee Training video that discusses Protected Zone interactions:

www.youtube.com/watch?v=Y4nziGzN9ik

These three links all refer to the full text of SG3, so we would advise reviewing that as well, taking note of which parts refer to Goal Zones vs Protected Zones. The only parts of SG3 that refer to the non-protected Goal Zones are B and D:

<SG3> Stay away from your opponent's protected areas. Robots may not intentionally or accidentally, directly or indirectly, perform the following actions:

B - Contact any Scored Cubes in either of opposing Alliance's Goal Zones.

D - Contact either of the opposing Alliance's Goal Zones or Barriers.

It is impossible to issue a blanket ruling that would cover all hypothetical robot-to-robot interactions. In most cases, if parts B and/or D have not been violated, then no violation of SG3 has occurred. You are correct that whether or not a given Cube is Scored is the key point to determining if SG3-B is being violated. Other rules, such as G14, G15, or SG6 may still apply, as they do in all robot-to-robot interactions; there is nothing special about them with regard to the hypothetical scenario being asked about here (i.e. "bumping a robot in the process of scoring").

<G15> Trapping Clarification

G15

So with the release of NorCal's wall-bot, a few others and I brainstormed ways to negate its defensive effect. We came up with the idea of after autonomous (since wall-bots can't deploy till after autonomous) keeping one robot in the protected zone to secure access to that scoring zone. We thought that since we are in that corner the wall-bot can't deploy without trapping us but after reading the rules again we noticed trapping states:

A Robot is considered *Trapped* if an opposing Robot has restricted it into a small, confined area of the field, approximately the size of one foam tile or less and has not provided an avenue for escape. Trapping can be direct (pinning) or indirect (preventing a Robot from escaping the corner of the field).

So the approximately one foam tile or less means we can be trapped in the corner, our protected zone, by their bot based off the rule. However, in In The Zone's ref training it showed an example of trapping and the trapped robot was moving around between three tiles. Could you clarify if this would be trapping or not?

If it is ruled as trapping someone stated that the robot sitting in the protected zone violates <G14> which I believe is incorrect. The robot in the corner isn't forcing the wall-bot to come to the corner and trap it, it is strategically holding open the avenue so their partner can score in the area. Does this fall under G14?

Here are the videos I talked about for reference: [NorCal's Wall-bot](#) [ITZ Ref Training, 1:10 is the example](#)

There's two links here, formatting is being weird

Answered by Game Design Committee

So the approximately one foam tile or less means we can be trapped in the corner, our protected zone,

by their bot based off the rule. However, in In The Zone's ref training it showed an example of trapping and the trapped robot was moving around between three tiles.

First, please remember that support materials from previous seasons do not apply to the current competition season, as rules, interpretations, or game-specific contexts may have changed.

Could you clarify if this would be trapping or not?

Indirect trapping is one of the more difficult calls for a Head Referee to interpret, and is largely dependent upon in-match context. The video clip that you referenced (if we were to assume that we are now interpreting it using Tower Takeover rules, not In the Zone rules) would be considered Trapping.

In this clip, the red Robot was very clearly intending to hold the blue Robot to a small, confined area, without providing any avenues for escape. The definition of Trapping does include the word "approximately" to imply that the Robot being Trapped may not always neatly line up into a specific foam tile without crossing any seams. Head Referees should not need to (and are not expected to) measure the precise area in which the Robot is being held to confirm if it is exactly 24" wide or not. Similarly, the blue Robot is clearly attempting to escape, which is another key thing that Head Referees will look for when determining if a given interaction is a Trap or not.

If it is ruled as trapping someone stated that the robot sitting in the protected zone violates <G14> which I believe is incorrect. The robot in the corner isn't forcing the wall-bot to come to the corner and trap it, it is strategically holding open the avenue so their partner can score in the area. Does this fall under G14?

It is impossible to issue a blanket ruling based on a snapshot description of a hypothetical match. The Head Referee would need to take into account the context of previous matches, the offensive Robot's intent for being in the corner, if they were attempting to escape, etc.