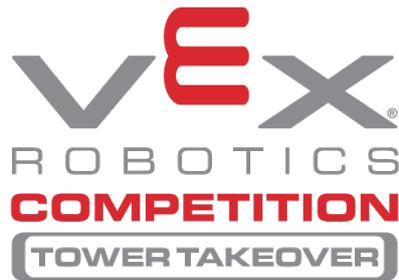


Q&A

VRC 2019-2020: Tower Takeover

Tagged: G11



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.

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- 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.

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Autonomous bonus - both alliance commit a violation

G11

<G11> All rules still apply in the Autonomous Period. Any infractions committed during the Autonomous Period that are not Match Affecting, but do affect the outcome of the Autonomous Bonus, will result in the Autonomous Bonus being automatically awarded to the opposing Alliance. a. Teams are responsible for the actions of their Robots at all times, including during the Autonomous Period. Any infractions committed during the Autonomous Period that are Match Affecting can result in a Disqualification, if warranted by the rule. b. If both Alliances cause infractions during the Autonomous Period that would have affected the outcome of the Autonomous Bonus, then no Autonomous Bonus will be awarded.

Autonomous Bonus - A bonus awarded to the Alliance that has earned the most points at the end of the Autonomous Period. The Autonomous Bonus consists of six (6) points added to the score at the end of the Match, and two (2) Match Loads that may be entered any time during the Driver Controlled Period. Note: If the Autonomous Period ends in a tie, each Alliance will receive an Autonomous Bonus of three (3) points and one (1) Match Load.

If both alliance commit a violation in autonomous, it would result in no autonomous bonus being awarded. In this case, does each alliance receive one match load (same as tie) or will no alliance receive match load(0 match load given out) (since there is no autonomous winner)

Answered by Game Design Committee

Per the definition that you quoted, the Autonomous Bonus includes both the six points *and* the Match Load Cubes.

If no Autonomous Bonus is awarded due to G11-b, then no points are awarded, and no Match Load Cubes are distributed.

Indirect Cube movement while Autonomous

G11 SG2 SG7

During the Autonomous period, if a red robot causes a cube from the vertical stack of four to fall while trying to get cubes from that stack and one or more of the cubes in that stack crosses the autonomous line and causes the other vertical blue alliance stack of four to fall is that a violation of any rule?

Additionally, if the other team is not running autonomous, is the answer the same?

The robot is not directly touching the cube that crosses the line-e.g. trying to get the bottom 2 cubes of the stack.

Answered by Game Design Committee

It is impossible to issue a blanket ruling based on a snapshot description of a hypothetical Match. In general, SG7 and SG2 would be the primary rules that a Head Referee would have to look at in this case:

<SG2> Stay on your side in Autonomous. During the Autonomous Period, Robots may not contact the foam tiles, Towers, or Cubes which are on the opposing Alliance's side of the Autonomous Line.

Violations of this rule will result in the Autonomous Bonus being awarded to the opposing Alliance. Intentional, strategic, or egregious violations, such as intentional contact with an opposing Robot while completely across the Autonomous Line, will result in a Disqualification.

Note: Towers and Cubes which begin the Match in contact with the Autonomous Line are not considered to be on either side, and may be utilized by either Alliance during the Autonomous Period. If attempting to utilize these Towers or Cubes, Teams should be cognizant of the possibility that opponent Robots may attempt to do the same. <SG7>, <G10>, <G11>, and <G12> will be taken into

account when these types of Robot interactions occur.

<SG7> Use Cubes to play the game. Cubes may not be used to accomplish actions that would be otherwise illegal if they were attempted by Robot mechanisms. Examples include (but are not limited to):

- Encroaching upon an opponent's Protected Zone per <SG3>.
- Interfering with an opponent's Autonomous Period per <SG2>.

Causing Cubes to interact with foam tiles, Towers, or Cubes on the opposing Alliance's side of the Autonomous Line would be considered a violation of SG2 via SG7. Per SG2, violations could range from the Autonomous Bonus being awarded to the opposing Alliance, to a Disqualification, depending on the context of the interaction.

Can a part of the robot be moving before a match?

G7 G11

I had trouble finding an applicable rule.

<G7> Drivers switch Controllers midway through the Match. In a given Match, no Driver shall operate a Robot for more than thirty-five (0:35) seconds. The two Drivers must switch their controller between twenty-five (0:25) seconds and thirty-five (0:35) seconds remaining in the Match. The second Driver may not touch his/her Team's controls until the controller is passed to him/her. Once the controller is passed, the first Driver may no longer touch his/her Team's controls.

Can a team start a motor moving before the match? For example, have the robot start a flywheel so it is spinning when the match starts? There is no version of <G11> for the beginning of the match. It would be possible to start the motor without using the controller.

Answered by Game Design Committee

There is nothing prohibiting this, thus it is legal, provided no other rules are violated in the process.

clarification on trapping.

G11 G13 G14

This question focuses around "trapping", which is defined in the game manual as a robot status where "a robot is trapping if it has restricted an opposing robot 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 perimeter wall), or indirect (e.g. preventing a robot from escaping from a corner of the field). <G14> also states that there should be no trapping for more than 5-seconds, and is effectively over once the opposing robot has driven away by 2 feet and has driven away for 5 seconds.

Trapping however, has a loose definition of "avenue of escape" and "confined area of the field". Pinning, has also not been defined. If a robot were to push an opposing robot, this would be deemed legal, because there is open space around the robot. If a robot were to push another robot into the wall, and then back away, leaving enough space in the front and back for the robot to escape, but would push the robot every couple seconds, would this be legal? The defending robot in this instance, is not technically trapping the robot as it has not confined the robot, the robot can escape, however is not doing so fast enough, and the defending robot is pushing (which, is not trapping), the robot ever so slightly. Would this be considered trapping?

A follow up to the above question, what is the definition of an avenue of escape? If there is a robots-width of space between a post and my robot, then that should be sufficient for a count to NOT be held against me. By that sense, if a robot is in a corner, and caps/balls are piled beside them (which should not be hoarding, the caps are not in the corner because the corner is occupied by a robot), and can not escape, it should not be a trap, correct?

We would also like to seek clarification on pushing, there have been many referees at local tournaments who start counting as soon as robot-robot contact has been made (ie, RED1 pushing BLUE1 away from flags so they can not line

up for flags), however, as per the rules, this should be legal, correct? Now, suppose a robot, say BLUE1 were to push RED1 into their partner, RED2, in the middle of the field. RED1 has a clear avenue of escape, all RED needs to do is have RED2 drive away, and RED1 can then drive away. Would this still be counted as a trap? Now what if BLUE1 was preventing RED1 from moving, who was then preventing RED2 from moving. If BLUE1 backed away, then returned to trap RED2, should the count be restarted (BLUE1 was never defending RED2) or should the count continue (BLUE1 has been preventing RED2 from moving as well, albeit indirectly). It would be nice if the GDC could give clarifications on these, as the local refs have had very unclear rules, and there has been a lot of variation with the rulings, which means that students are often left confused to as why one team at one tournament could act in such a way, whereas these actions were ruled illegal at another tournament.

The last question, if RED1 were trapping BLUE1 against a perimeter, and BLUE1 was then incidentally trapping RED2, would there also be a count against BLUE1? Even if RED1 were to back away at 5 seconds, it would be almost impossible for BLUE1 to also move away fast enough (especially if the trap has put them in an awkward position) to allow RED2 to move away. Again, this refers to <G13> and <G11>. If BLUE1 were an offensive robot about to score, but then got trapped by RED1 - they should not be at fault, and should not be allowed to be forced into a penalty, correct?

Thank you for taking the time to carefully read and answer these questions!

Answered by Game Design Committee

Your question(s) appear to be answered by [this similar Q&A](#). If this is not the case, please feel free to rephrase and re-submit. Please especially take note of the following portions:

Please remember that the VEX Robotics Competition is a volunteer-driven program with over 1700 events across 50 countries each season. While the Game Design Committee and the REC Foundation strive to continuously improve our training materials, requisite certifications to run an event, and overall consistency between events, providing absolute guidelines for subjective topics is one of the largest challenges that we face each year.

The interactive and dynamic nature of a VEX Robotics Competition game makes it impossible to provide absolutely black-and-white clarifications of inherently non-black-and-white topics, such as defensive interactions. If everything in a game was absolute and explicitly clear, then the role of a Head Referee to provide in-the-moment interpretations would not be needed!

These answers represent the intent of the Game Design Committee within the guidelines and training materials that we have provided for VRC Turning Point referees, not an ultimate expectation or guarantee that all Head Referees will interpret a given edge case in exactly the same way.

Blocking Opponent Shots, Vertical Expansion Limit.

G11 G13 SG2

Hi Again,

This is the second question that I have been asked to rephrase and repost.

The game manual states, in <SG2a> that "Once the match begins, a robot which is contacting the expansion zone may expand vertically with no height limit. However, once fully outside the expansion zone (ie, no longer contact it), the robot must return to a height limit of 18" tall." The follow-up info also states that <A robot which interferes with gameplay as a result of violating this rule, such as scoring a high flag or blocking a launched ball while outside the expansion zone, will result in a disqualification, whether the interference is match affecting or not.> The game manual also states in <G11> that <you can't force an opponent into a penalty. intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing alliance.>

The issue then follows: if a robot is designed to block opponent shots, say by expanding horizontally over the opponent robot, and the opponent robot fires a shot, causing the defending robot to expand over 18", who would be at fault? The game manual states through <G13> that offensive robots get the "benefit of the doubt". In this instance, the defending robot is not actively seeking to break the rules, and has taken reasonable measures to prevent this (through proper bracing, good build quality, etc. etc.) If the offensive robot however, then decided to shoot the ball and cause the

defending robot to violate the 18" limit (perhaps through a powerful launcher), who would be at fault? The offensive robot could have driven somewhere else and fired the shot, and if they had fired the shot with the intention to cause a rule violation, would also receive scrutiny from <G11>.

Answered by Game Design Committee

If a robot is designed to block opponent shots, say by expanding horizontally over the opponent robot, and the opponent robot fires a shot, causing the defending robot to expand over 18", who would be at fault?

In this hypothetical situation, <G13> would apply, quoted here for reference with a portion bolded for emphasis.

<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 Robot which is attempting to block the opponent would be considered the defensive Robot, and would be considered in violation of <SG2>.

Furthermore, if the intent of such a "blocker" mechanism (as defined in your question) is to prevent launched Balls from reaching their intended target, and it extends past 18" tall when it succeeds in preventing a launched Ball from reaching its intended target, then the following portion <SG2> would likely apply on its own, even without <G13>.

Note: A Robot which interferes with gameplay as a result of violating this rule, such as Toggling a High Flag **or blocking a launched Ball while outside of the Expansion Zone**, will result in a Disqualification, whether the interference is Match Affecting or not.

We would advise that Teams attempting this type of strategy design their Robot such that they minimize the possibility of any edge cases such as these.

Indirect Possession

G11 SG4 SG6

In a recent tournament, an opposing robot shot a ball at a flag. When the ball ricocheted off of the flag, it bounced into our robot into a place on the robot where it couldn't be dislogged. There was also another ball in the robot in a place where it couldn't be dislogged, as well as one more ball in the our robot's intake system or shooter. The referee warned our robot that it was over the possession limit and because the team didn't immediately fire the one ball out of their shooter, the referee made the decision to disqualify them from the match. They didn't get the win points for the match but their teammate did.

My interpretation of Rule G11 is that the other team forced our robot into a "possession" penalty and therefore our team should not have been penalized. The other team did not do this intentionally, so therefore they should not have been penalized either. Here is the exact wording of the rule. <G11> You can't force an opponent into a penalty. Intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing Alliance. Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.

Please clarify whether my interpretation of the rule is correct.

Answered by Game Design Committee

Let's look at the specific rules in question, partially quoted here for reference:

<SG4> Watch your Possession limit. Robots may Possess a maximum of one (1) Cap and two (2)

Balls at a time.

<SG6> Keep Game Objects to yourself. Robots may not intentionally drop or place Game Objects on an opponent Robot.

<G11> You can't force an opponent into a penalty. Intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing Alliance.

All three of these include the standard warning/Disqualification verbiage:

Minor violations of this rule that do not affect the Match will result in a warning. Match Affecting offenses will result in a Disqualification. Teams that receive multiple warnings may also receive a Disqualification at the Head Referee's discretion.

It is impossible for us to provide blanket rulings based on a written description of a specific Match, which is why it's important to defer to the Head Referee who witnessed the interactions in person.

You note that the ricochet of the Ball into your Robot was incidental, so <SG6> and <G11> would not typically apply, as they both include "intentional" verbiage. <SG4> would then be the key rule to consider.

<SG4> does not include any "intentional" or "un-intentional" verbiage; thus, if the Robot in question is objectively Possessing (3) Balls, then it is objectively in violation of <SG4>. To ensure that the penalty for this violation remains a warning, we would advise Teams who find themselves in this situation to avoid doing anything which would be considered Match Affecting, such as using one of those Game Objects to impact their Alliance's score (i.e. shoot a Ball at a Flag).

In general, we would advise Teams to design their Robots to minimize these types of incidental or questionable interactions, thus minimizing the possibility of rulings that you would consider controversial.

Tipping off platform leading to a violation of SG2

Center Platform G11 G12 SG2

Is it considered to be a violation of <G11> "You can't force an opponent into a penalty" if in competition for the center platform one robot tips, which causes it to violate <SG2> a) that states that a robot must return to 18" height when outside of the expansion zone. In other words, is it considered to be forcing a robot into a penalty if the opposing alliance's robot is more than 18" when tipped over (not intentionally) in a battle for the center platform, or is this protected as part of Note 1 of <G12>?

Answered by Game Design Committee

Let's look at the specific verbiage of G11:

<G11> You can't force an opponent into a penalty. Intentional strategies that cause an opponent to violate a rule are not permitted, and will not result in an infraction on the opposing Alliance.

Pushing a Robot off of the Center Platform, such that it accidentally or momentarily ends up expanded beyond 18" tall, is not the same as intentionally forcing an opponent into a rules violation. A better example of forcing an opponent into an 18" height violation would be to grab an expandable Robot mechanism and lift it up beyond 18".

Conversely, if a Robot falls off of the Center Platform and momentarily ends up expanded beyond 18" tall because of its fall, and does nothing else to affect the match in this expanded state, then it would also not receive an SG2 violation; at most, it should only receive a warning.

Detached robot piece touching hub at end of match.

Hubs G11

If a piece of the robot breaks off and falls into the building zone, then contacts a hub, is the hub scored? Based on these definitions I would assume that it is not scored.

Low Scored – A Hub is Low Scored at the end of a Match if it meets the following criteria:

1. The Hub is contacting a Barrier or the Floor inside of a Building Zone.
2. The Hub is not contacting the Floor outside of a Building Zone.
3. The Hub is not contacting a Robot.

Robot – Anything that has passed inspection that a Team places on the Field prior to the start of a Match.

Here is an example: i.imgur.com/Htd4Lp0.jpg

Answered by Game Design Committee

The relevant rule in question here is <G11>, quoted here for reference:

<G11> Keep your Robot together. Robots may not intentionally detach parts or leave mechanisms on the Field during any Match. If an intentionally detached component or mechanism affects game play, the Team may be Disqualified at the Head Referee's discretion.

If a Robot detaches a mechanism or component, it is no longer considered to be a part of that Robot. So, by itself, the detached mechanism does not immediately cause the Hub to violate point 3 of the Low Scored definition. However, it will be at the referee's discretion whether the detachment was intentional (and a violation of <G11>) or accidental.

If the referee determines that <G11> has not been violated, scoring a Hub which is contacting a detached part should follow the same guidelines as listed in Low / High Scored; the detached part is irrelevant. So, because it appears that the Hub in your example image is contacting a Barrier, it would be considered Low Scored.