

Q&A

VRC 2021-2022: Tipping Point

Tagged: G3

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 Tipping Point 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 Tipping Point 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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969: Forced into penalty with Disablement during Auton

9-Dec-2021

G3 G11 G14

In the autonomous period, if two robots grab a goal and the Red robot pulls the Blue robot across the alliance line.

1. is this a violation for the Blue robot?

Rules say that a robot may not be forced into a penalty.

But what if the Blue robot still in auton then Disables the Red robot? Is there any penalty by either robot?

Answered by committee

Please review the [Q&A Usage Guidelines](#) before posting, specifically point 3, "Quote the applicable rule from the latest version of the manual in your question".

In this case, the applicable rule is SG5, quoted below, with a portion bolded for emphasis.

<SG5> Enter the Neutral Zone during Autonomous at your own risk. Any Robot who engages with the Neutral Zone during the Autonomous Period should be aware that opponent Robots may also choose to do the same. Per <G11> and <G12>, Teams are responsible for the actions of their Robots at all times.

a. For the purposes of this rule, "engages with" means any combination of:

- i. Contacting foam tiles within the Neutral Zone
- ii. Contacting Neutral Mobile Goals
- iii. Contacting Rings that begin the Match on the double white tape line in the center of the Neutral Zone

b. If opposing Robots contact one another while both engaging with the Neutral Zone, and a possible <G12> violation results (i.e. damage, Entanglement, or tipping over), then a judgment call will be made by the Head Referee within the context of <G12> just as it would if the interaction had occurred during the Driver Controlled Period.

c. If opposing Robots contact one another while both engaging with the Neutral Zone, ****and an incidental violation of <SG4> occurs, **no penalty will be assessed on either Alliance.**

d. <G15> does not apply during the Autonomous Period.

e. Intentional, strategic, repeated, or egregious offenses of points "b" or "c" may still be deemed a violation of <SG4>, <G12>, <G13>, <G14>, <G1>, and / or <S1> at the Head Referee's discretion.

As well as the following portion of the "red box" underneath SG5:

The Neutral Zone is intended to be a zone that Robots from both Alliances can utilize during the Autonomous Period. This will inevitably result in Robot-on-Robot interactions, both incidental and intentional. The overarching intent of <SG5> is for the vast majority of these interactions to result in no rule violations and / or penalties for either Alliance, just as no rules violations occur in 99% of Driver Controlled interactions.

So, with those quotes in mind...

if two robots grab a goal and the Red robot pulls the Blue robot across the alliance line. is this a violation for the Blue robot?

This sounds like an incidental violation of SG4. Therefore, point "c" would apply, and no penalty would be assessed on either Alliance.

But what if the Blue robot still in auton then Disables the Red robot? Is there any penalty by either robot?

This sounds like a possible violation of G12. Therefore, point "b" would apply, and the Head Referee will make a judgment call within the context of G12 just as if the interaction had occurred during the Driver Controlled Period. In most cases, this would be considered "no violation".

As stated in G11, G12, and SG5, Teams are responsible for the actions of their Robot at all times. Robots who choose to engage with the Neutral Zone during the Autonomous Period should be aware that opponent Robots may also choose to do the same, and prepare for the risks associated with doing so.

878: Manual Update Definition of Scored Contradiction

6-Oct-2021

G3

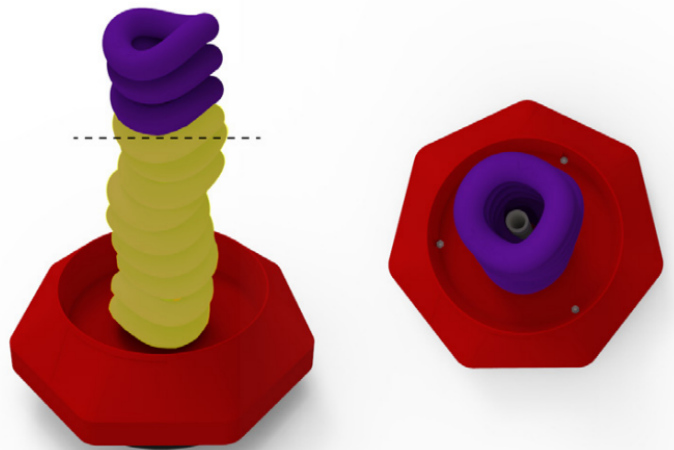
Scoring Note 1 states:

Rings can be Scored in Mobile Goal Bases, or on Mobile Goal Branches. In order to be considered Scored in either position, a Ring must first meet the following prerequisite criteria:

- Not contacting a Robot of the same color Alliance for which the Rings would receive points
- Not contacting any Field Elements, such as gray foam field tiles, the Platform, or the field perimeter
- **Not contacting any Rings which are not considered Scored (i.e. Rings which are contacting a Robot or a Field Element)**

Emphasis

On page 1
goal that e



e
to

Scoring Figure 5: Only the highlighted Rings would be considered Scored, as they are the only ones fully or partially encircling the Mobile Goal Branch.

this Q&A)

The

caption for this figure reads:

Only the highlighted Rings would be considered Scored, as they are the only ones fully or partially encircling the Mobile Goal Branch.

From my understanding of Note 1 bullet point 3, none of the rings in Figure 5 should be considered scored, since the rings on top which are not considered scored are contacting the rings beneath them, causing a chain of not scored rings which

results in all of the rings not being scored. A very similar situation is shown in Figure 3 and Figure 2 that demonstrates this concept. Despite this, Figure 5 states that the rings below the unscored rings are, in fact, scored, which seems to be a contradiction. Can the GDC please clarify if the green shaded rings in Figure 5 are not scored as the Note states they are not or if they are scored as the caption says they are? Thank you.

Answered by committee

Thank you for bringing this to our attention.

The intent of the figure was primarily to demonstrate what was meant by "encircling a Mobile Goal Branch", by depicting a scenario where Rings did not meet this definition.

Your interpretation of Note 1 is correct; if this situation were to actually occur in a Match, none of the Rings would receive points, as they are all transitively contacting the top un-shaded Rings. We will be sure to update this caption in a future Game Manual update to make this distinction more clear.

71: V5 and Cortex robot inspection checklist differences

10-Sep-2018

G3 R8 R15

In the new V5 Robot Inspection checklist it specifically calls out <R8g> but the Cortex inspection checklist does not. Should it be considered that Cortex robots can not violate <R8g>

In the V5 checklist, it specifies that the sensor has been calibrated on competition fields - does this imply teams calibrate before inspect? on practice fields? home fields? before each match? If before a match, how much time should be allowed for teams to calibrate? This item does not have a rule associated with it. If we are to consider that the variance of lighting conditions is significant between fields, then it suggests this should be before each match and a <G> rule should be associated with it. V5 is all new to us, so <G2> is not there yet :)

In V5 check list it is implied that teams are allowed one controller - yet for Cortex two... <R15> does not make distinction between the two systems with regards to number of controllers.

I would recommend that the V5 inspection checklist be sorted in numerical order consistent with cortex, and that a single document (two sided) be provided so that the inspectors only need to pull one sheet and fill out according to system.

thanks for the getting out the V5 checklist: <https://www.roboticseducation.org/documents/2018/09/vrc-v5-brain-robot-inspection-checklist.pdf>

Answered by committee

It would be impossible for teams to calibrate robots on the field before each match. Event Partners should take lighting conditions into consideration when planning for an event. The added statement "If Vision Sensor is used, it has been calibrated & tested on competition fields or team accepts responsibility for doing so" reminds teams that it is their responsibility to calibrate their robot matches begin so that they come to their first match prepared.

The V5 Robot Inspection Checklist has been updated to include up to 2 V5 Controllers, and rule <R8g> has been added to the Cortex Checklist. Keep in mind, all rules from the Game Manual still apply regardless if they are called out on the Robot Inspection Checklists. Please check www.RoboticsEducation.org for the latest versions.

2604: Interpretation of <G4b> as it relates to permanent team member move for state championship for non-strategic reasons outside of students' control

5-Mar-2025

G3 G4

<G4>

Hello, GDC. We have a V5RC team (5430B) that has qualified for and is competing in the 2025 Missouri V5RC High School State Championship this Saturday, 03/08/2025. Unfortunately, 4 members of the 7-member 5430B team cannot compete due to the SAT on the same day. The remaining 3 members of team 5430B would love for two members from another one of our teams (5430D, who did not qualify for state and who's season is over) to move to team 5430B in support.

This member move seems to be supported by the last sentence in Game Manual section <G4b> on p. 28 that reads: "When a Team qualifies for a Championship event (e.g., States, Nationals, Worlds, etc.) the Students on the Team attending the Championship event are expected to be the same Students on the Team that was awarded the spot. Students can be added as support to the Team, but may not be added as Drive Team Members or Coders for the Team."

Are we interpreting the Game Manual section <G4b> correctly in that members can be added to the 5430B team in support, providing the new/moving members are not Drive Team Members or Coders (last line of G4b, highlighted in yellow below) and would fulfill other roles (e.g. mechanic, strategy, scouting, etc.) AND would move from one team (5430D) for non-strategic reasons (e.g. due to SAT test negative impact on 5430B) outside of the team's control <G4a> AND would remain on team 5430B for the remainder of the season <G4b.i.> and not move back to 5430D? The two members who we propose move are not switching teams to support multiple teams <G4.a.ii>.

We want to do only what upholds the spirit of the game, is supported by the REC, is in the best interest of students, and allows our event partner and coaches to use common sense <G3> when upholding the game rules.

Thank you for your consideration and support.

CD

<G4> The Robot must represent the skill level of the Team. Each Team must include Drive Team Members, Coder(s), Designer(s), and Builder(s). Many also include notebooker(s). No Student may fulfill any of these roles for more than one VEX V5 Robotics Competition Team in a given competition season. Students may have more than one role on the Team, e.g., the Designer may also be the Builder, the Coder and a Drive Team Member.

- a. Team members may move from one Team to another for non-strategic reasons outside of the Team's control.
 - i. Examples of permissible moves may include, but are not limited to, illness, changing schools, conflicts within a Team, or combining/splitting Teams.
 - ii. Examples of strategic moves in Violation of this rule may include, but are not limited to, one Coder "switching" Teams in order to write the same program for multiple Robots, or one Student writing the Engineering Notebook for multiple Teams.
 - iii. If a Student leaves a Team to join another Team, <G4> still applies to the Students remaining on the previous Team. For example, if a Coder leaves a Team, then that Team's Robot must still represent the skill level of the Team without that Coder. One way to accomplish this would be to ensure that the Coder teaches or trains a "replacement" Coder in their absence.

Points ii and iii are intended to represent real-world situations that are found in industry engineering. If a vital member of a professional engineering team were to suddenly leave, the remaining members of the team should still be capable of working on / maintaining their project.

- b. When a Team qualifies for a Championship event (e.g., States, Nationals, Worlds, etc.) the Students on the Team attending the Championship event are expected to be the same Students on the Team that was awarded the spot. Students can be added as support to the Team, but may not be added as Drive Team Members or Coders for the Team.
 - i. An exception is allowed if only one member of the Team is able to attend the event. The Team can make a single substitution of a Drive Team Member or Coder for the Championship event with another Student, even if that Student has competed on a different Team. This Student will now be on this new Team and may not substitute back to the original Team during the season.

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Answered by committee

Are we interpreting the Game Manual section G4b correctly in that members can be added to the 5430B team in support, providing the new/moving members are not Drive Team Members or Coders

(last line of G4b, highlighted in yellow below) and would fulfill other roles (e.g. mechanic, strategy, scouting, etc.) AND would move from one team (5430D) for non-strategic reasons (e.g. due to SAT test negative impact on 5430B) outside of the team's control G4a AND would remain on team 5430B for the remainder of the season G4b.i. and not move back to 5430D?

Yes.

2426: Strategic use of R3

10-Jan-2025

G1 G3 R3 T5 T6

[<G1>](#), [<G3>](#), [<R3>](#), [<T5>](#), [<T6>](#), Code of Conduct

If a team notices a problem with another team's robot, which would likely cause that team to fail a 'spot inspection', do they have an obligation to report that information in a timely manner? Or could they wait until it is strategically advantageous to do so?

Example: During qualification matches, Team A noticed that Team B's robot brain placement probably should not have passed inspection. Fixing the problem would have taken considerable time. Rather than approaching Team B and letting them know so they could fix their robot proactively, or informing the Head Referee directly, Team A waited until they were about to face Team B in a semi-final elimination match before pointing out the problem to the Head Referee.

Should Team B be allowed to play their match since they've played through all the qualification matches and it's at the Head Referee's discretion whether to conduct spot inspections? Or should their robot be removed from the field per R3, T5 & T6. Has Team A violated G1, G3, or the Code of Conduct?

Answered by committee

We believe that this scenario falls under rule [<G1>](#), "Treat everyone with respect." If you see anyone breaking a rule at a Match Field, you should immediately bring it to the Head Referee's attention and let them handle it as they deem appropriate. If you see a Violation away from the Field, you should alert the Event Partner. Teams must use extreme caution when handling these situations, and should remember to remain respectful, civil, truthful, and professional. Once the matter has been reported to the Head Referee or the Event Partner, their decisions and ruling will be final as described in rules [<T1>](#) and [<T4>](#).

If a Head Referee believes a Team is reporting potential Robot rule Violations strategically, maliciously, or speculatively, it should be treated as a [<G1>](#) Violation and immediately brought to the attention of the Event Partner who should then consult with the REC Foundation Regional Support Manager as described in the Violation Notes for [<G1>](#).

If a Team's Robot is found to be in Violation of a Robot rule during an event, rule [<R3>](#) (specifically clauses C, D, & E) will apply.

In the specific case you describe, in which a Team believes another Team's Robot Brain is in an unsafe location, Head Referees must apply judgment to determine whether or not the reported Team should be allowed to continue without modifying the Robot.

242: Legality of "coaching" from the stands/audience by team members and adults

13-Feb-2019

G1 G2 G3

I have a question regarding the legality of students or adults calling out from the stands/audience to drivers during a match. By far the two most common examples I have seen of this are:

- Someone periodically calling out the remaining time in the match, particularly if the students on the drive team are unable to see a match timer.
- Someone calling out "Get the yellow hub" or "Go hang" near the end of the match.

I have never seen this done in a disrespectful way so assume for this question that nothing is being said in a derogatory or offensive manner.

I have been told *"All Drive team members are in Drivers stations and are students. There are NO coaches - Thus the coaching from any location is illegal."* and that teams could be disqualified because of this. The reasoning for this was based on their interpretation of the following from the game manual and Code of Conduct:

G1 In all aspects of the VEX IQ Challenge program, the Students make the decisions and do the work with adult mentorship. Code of Conduct: • Student-centered teams with limited adult assistance.

G3 When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

Nothing in the above would apply to students "coaching." Also, "adult mentorship" and "limited adult assistance" could be interpreted to allow adult "coaching" during a match.

So, I have two specific questions.

1. Are students in the stands/audience allowed to call out time or things like "Go hang"?
2. Are adults in the stands/audience allowed to call out time or things like "Go hang"?

For completeness here are rules G1, G2, and G3 in their entirety.

G1 Treat everyone with respect. All Students and adults associated with a Team are expected to conduct themselves in a respectful and positive manner while participating in the VEX IQ Challenge. If Team members are disrespectful or uncivil to staff, volunteers, or fellow teams at an event, the team may be Disqualified from their current or upcoming Match. Judges may also consider team conduct and ethics when determining awards.

In all aspects of the VEX IQ Challenge program, the Students make the decisions and do the work with adult mentorship. The VEX community prides itself on being a positive learning environment where no one is bullied, harassed, or berated. Teams avoid placing unnecessary stress upon students and/or event volunteers; instead, challenging situations are viewed as teachable moments to model positive behaviors and good sportsmanship.

This rule exists alongside the REC Foundation Code of Conduct. Violation of the Code of Conduct can be considered a violation of <G1> and can result in Disqualification from a current Match, an upcoming Match, an entire event, or (in extreme cases) an entire competition season. The Code of Conduct can be found at http://link.roboticseducation.org/recf_codeofconduct.

G2 VEX IQ is a student-centered program. Adults may assist Students in urgent situations, but adults should never work on or program a Robot without Students on that Team being present and actively participating.

> Some amount of adult mentorship, teaching, and/or guidance is an expected and encouraged facet of the VEX IQ Challenge. No one is born an expert in robotics! However, obstacles should always be viewed as teaching opportunities, not tasks for an adult to solve without Students present and actively participating. >
> When a mechanism falls off, it is... > ...okay for an adult to help a Student investigate why it failed, so it can be improved. > ...not okay for an adult to put the robot back together. > > When a team encounters a complex programming concept, it is...> > ...okay for an adult to guide a Student through a flowchart to understand its logic. > ...not okay for an adult to write a pre-made command for that Student to reference.

G3 Use common sense. When reading and applying the various rules in this document, please remember that common sense always applies in the VEX IQ Challenge.

Answered by committee

There is no one-size-fits-all blanket answer for this topic. In general, infrequent comments from the stands in the spirit of cheering on the students are aligned with the student-centered policy of the Game Design Committee and the REC

Foundation.

Cheering from the stands, especially for a key end-of-match moment, is an exciting part of the VEX IQ Challenge's intensity; there is no positive learning experience to be gained by penalizing Student Drivers for receiving encouragement from their excited fans.

Similarly, calling out the amount of time remaining in a Match is a common practice for many play-by-play announcers, and is even included in the [relevant Referee Training video](#) as a suggestion to help with the 30-second Driver switch.

However - frequent, direct, and specific coaching instructions ("turn left, now pick up the Hub, now turn right, now go score") would not be within the spirit of the various student-centered guidelines in the Game Manual, Code of Conduct, Judges Guide, etc.

1798: Is driver allowed to have/use electronic timer.

27-Nov-2023

G3 SG1

We noticed that at some (Skill) Events, the timer is located in such a way that it's not visible to the driver. So we got the idea for the second driver to have simple electronic countdown timer attached to the wrist. Similar to like people attach phones when jogging. 2nd driver starts it at the start, and than both drivers can see it and know the time left.

At one of the events we were told it's not allowed. But I can not find anything about that in the rules. Seems like if it's not allowed, than any hand watches should not be allowed, which is silly.

Answered by committee

There is no rule that prohibits Drivers from using a timer during a Match. Per clause A of rule [<G8>](#), if a cell phone or other communication device is used as a timer, it must have all communication features turned off (e.g., be in airplane mode). Note that the official Match timer will still be used to determine the end of the Match (clause A of [<SC1>](#)) and the timing of the Driver switch ([<G11>](#)) in cases where an unofficial timer is also present.

1451: <G3><S2> Endgame Launcher Firing During Match Scoring and Landing Outside the Field

12-Feb-2023

G3 S2

This past weekend, there was an instance where a team did not fire their endgame, but while the match was being scored it fired and landed outside the field. I was already over at the next match as everything already "came to rest" and was ready to be scored. I went over to the field after my match ended and talked to the team about how their robot fires their endgame. Due to how they have their pneumatics hooked up, a loss in pressure can cause the launcher to fire. They did inform me that they had a slight pneumatic leak and that is what caused it to fire. *I will note that my scorekeepers said that none of them touched the robot.*

This could be one of two scenarios for rulings based on which of the two rules takes precedence: < G3 > or < S2 >.

< G3 > : If this rule takes precedence, then it should not be ruled a DQ per < S2 > as the team did not intend to fire the mechanism. < S2 > : If this rule takes precedence, then it should be ruled a DQ as they are "responsible for the actions of their robots at all times"

As the Head Referee, I ruled it as a DQ per < S2 > due to the reasoning above.

Can further clarification be provided on which of these two rules would take precedence so that we know for future events?

Thank you,

Answered by committee

We believe [our response to Q&A 1436](#) answers your question. If you need more clarification, feel free to rephrase and resubmit.

1399: Disc over the fence <removal vs disqualification>

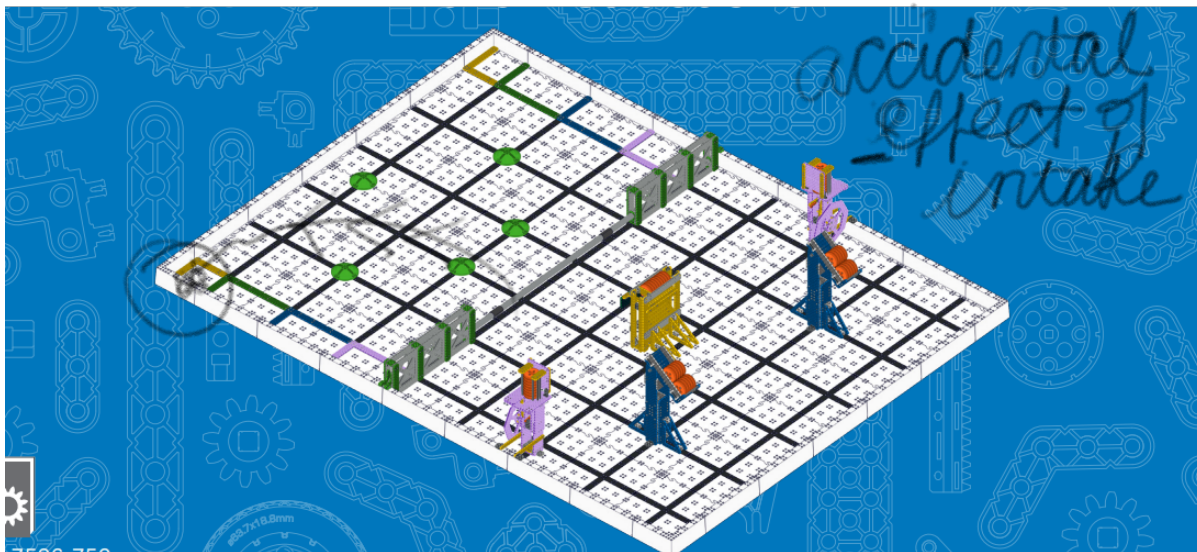
22-Jan-2023

G3 G16

<G16> Discs go under the Fence, not over it. Discs may only be Scored in Goal Zone by passing them underneath the gray PVC pipe. Robot actions such as “dumping,” “placing,” or “throwing” Discs over the Fence are strictly prohibited, and will result in a Disqualification

I am requesting that this rule be revisited by what terms mean “dumping, placing and throwing” over the fence. This needs to be clarified, since one disc as a result of an accidental “bounce or ricochet” does not equal “dumping, placing or throwing” and to be immediately disqualified for an accident seems harsh indeed. If the singular disc landed outside of the field it would have resulted in a disc removal and no penalty.

We know in the robotic world there are those once in a lifetime freak accidents and that is when we should apply <common sense G3 > and should have been given the benefit of the doubt and spoke to them at the end of the match instead scaring them by announcing it during the match when they had no clue about the rule and did not understand what was going on.



Answered by committee

As stated in the [Q&A Usage Guidelines](#), the Q&A platform is intended to be a communication channel for questions such as "Is this interpretation of a rule legal?", not a discussion forum to post questions such as "I disagree with this rule, can it be changed?" For those comments, please use the official VEX Forum or email GDC@vex.com.

1321: Knocking Discs out of High Goal by Hitting Field Perimeter

1-Dec-2022

G3

Hello,

[Q&A 1160](#) says it's illegal to use Discs to cause other Discs to fall out of the opponents High Goal.

As robots are getting better and better, goals are getting more and more full. We've noticed if a goal is filled in a precarious way, hitting the field perimeter causes the Discs to fall out of the High Goal. Is this a legal strategy?

Thank you for your time!

Answered by committee

Thank you for your question! There is nothing in the Spin Up Game Manual that prohibits the strategy you've described. However, Teams should ensure that their Robot's actions do not cause damage to any Field Element as described in rule [<S1>](#), including the Field Perimeter, Net, Net Assembly, and High Goal structure.

1302: Low Goal Barrier Trapping - Q and A 1265 Clarification

17-Nov-2022

G3 G15

Q and A 1265 states:

A Robot that cannot cross the Barrier in that configuration has taken a calculated design risk, whether consciously or accidentally. Neither of your scenarios or images should be considered Trapping in Spin Up.

However, if a Robot's wheels are parallel to the Barrier, and an opposing Robot is restricting their movements by pushing them against the Barrier, that may be considered a Trap at the Head Referee's discretion based on the other actions of both Robots

G15 states:

A Robot may not Trap an opposing Robot for more than five seconds (0:05) during the Driver Controlled Period.

G3 states:

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

1. How do holonomic drives (X drive, mecanum drive, Y drive, and H drive) count when determining parallel or perpendicular to the barrier?
2. How far should the wording calculated design risk be taken, and what differentiates the ruling in these scenarios?
 - a. A blue robot with a 4 motor drive robot is pinned with their wheels perpendicular to the field perimeter by a red robot with a 6 motor drive of the same speed. Is this trapping as the robot took the calculated design risk to not have as much torque?
 - b. A blue robot with a standard tank drive is pinned with their wheel parallel to the perimeter by a red robot. Is this trapping as the blue robot took the calculated design risk to not to be able to strafe?
 - c. A 17.5 inch wide blue robot is constrained to a small corner of the field by a red robot blocking their path out. The red robot leaves a gap of 17 inches. Is this trapping as the blue robot took the calculated design risk to have a

wider robot?

d. A 17.5 inch tall blue robot is constrained to a small corner of the field by a red robot blocking their path out. There is a gap for the blue robot to escape, but the roller is in this gap. Is this trapping as the blue robot took the calculated design risk to not be short enough to fit under the roller?

3. What other design risks do teams need to consider that are not listed in the manual (nowhere in the manual does it list any advantage to be able to drive over the low goal)?
4. Given the fact that the low goal barriers are known to tear field tiles if hit hard or constantly pushed on, is a game strategy that involves trapping opposing robots against the barrier a violation of S1?

Answered by committee

After reviewing match footage from multiple recent events, we have determined that our original response to this question shifted gameplay too far in the direction of defensive Robots. Effective immediately (Dec 13, 2022), holding an opponent against a Barrier such that they cannot escape will be considered Trapping as described in rule [<G15>](#).