

Q&A

VRC 2023-2024: Over Under

Tagged: SC5

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 Over Under 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.

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2240: Passing and scoring

29-Oct-2024

SC5

<SC5> For example, in the collaboration play, when there is one switch cleared and Robot1 passes the ball to Robot2, the team will score 4 points.

If Robot2 shoots the ball and it lands in the pickup zone (not the goal), can the ball be placed back on the loading station and passed again to score another 4 points? Or does the ball need to go through the goal and into the pickup zone before being loaded back onto the loading station to score another 4 points? <SC5>

Answered by committee

Rule <SC5> specifies (bold added here for emphasis):

An Alliance receives credit for a Pass once both Robots independently contact a Ball before it **leaves the Field**.

Per rule <SG6>, a Loader may retrieve a Ball that lands in the Pickup Zone even if it has not been scored. That Ball becomes eligible for another Pass after it is Loaded through the Loading Station.

Per rule <SC6>, at the end of the Match in this scenario (in which 1 Switch is Cleared), the Alliance can receive points for a number of Passes up to the number of Goals scored in the Match. If no Goals have been scored during a Match with one or more Cleared Switches, the Team cannot earn points for Passes.

2220: What counts for independent contact of a pass?

24-Oct-2024

SC5

<SC5> What are the parameters of independent contact for a pass? Does the ball have to be lifted? Or can a ball be passed by hitting it with a robot? <SC5>

Answered by committee

Clause A of rule <SC5> defines independent contact as "a moment where only one Robot is contacting the Ball." If a Robot in the Match touches the Ball at a moment when the other Robot in the Match is *not* touching that Ball (and before that Ball leaves the Field), it counts as independent contact.

2127: Does a pass have to occur before a ball is scored?

9-Sep-2024

SC5

<SC5> Nothing in the game manual states that a pass has to occur before a ball is scored as a goal, only that the pass has to happen before the ball leaves the field. Based upon the definition of passing and loading, it appears that it would be legal to pass a ball after it has been scored as a goal before being picked up by the match loader.

Would this scenario be a legal pass in a Teamwork match: If Robot A scores the ball through a target, Robot B touches the ball once it rolls into the pickup zone before a loader retrieves it. (This would only be valid from balls introduced from

the loading station since rapid load balls are not eligible for passes)

[<SG5>](#)[<SC5>]

Answered by committee

Thank you for your question, and for highlighting this unintended loophole in the rules! The following changes will be reflected in the next game manual update, and are effective immediately:

- The first sentence of [<SC5>](#) will be revised to read (bold used to emphasize new text), "An Alliance receives credit for a Pass once both Robots independently contact a Ball before it **is Scored or** leaves the Field."
- Clause B of [<SG6>](#) will be revised to read (bold used to emphasize new text), "A Ball which has been Scored through a Target may not be used for additional scoring, **passing**, or Switch Clearing until it is retrieved by a Loader and legally re-Loaded."

2108: Multipass

24-Aug-2024

SC5

Can we do multiple passes with one ball before scoring it?

Example: Two robots scores 20 goals combined without any passes then one robot passes to the other robot then passes it back and so forth until there are 20 passes and then finally scores the last ball.

Can we earn points for all those passes in the example?

Answered by committee

Can we do multiple passes with one ball before scoring it? Can we earn points for all those passes in the example?

A Ball can be passed between Robots an unlimited number of times before it leaves the Field, but per clause C of rule [<SC5>](#), "A Ball can count for a maximum of one Pass each time it is Loaded through the Loading Station." The interaction in your example will only receive credit for one Pass.

2053: Can the preload ball count as pass?

28-Jun-2024

SC5 SG1

At the beginning of the match, one balls can be preloaded to each of the robots. If each robot pass their ball to other robot when the match begins, Does it count as pass? Or all the pass has to count from the ball through loading zone.

Answered by committee

Yes. Each Preload Ball in a Teamwork Match can count for a maximum of one Pass, and is subject to all clauses of rule SC5.

Note: This answer was revised for clarity on September 12, 2024.

2046: airborne pass

25-Jun-2024

SC5

Can the balls touch the ground while being transferred from robot to robot during a pass or does the ball have to remain airborne throughout the whole pass because the rule does not specify [SC5](#)

Answered by committee

As stated in the blue box in rule [G3](#),

When in doubt, if there is no rule prohibiting an action, it is generally legal. However, if you have to ask whether a given action would violate S1, G1, or T1 then that's probably a good indication that it is outside the spirit of the competition.

Because the rules do not require that a Ball remains airborne throughout a Pass, and letting a Ball touch the Field would not violate rules [S1](#), [G1](#)<G1>, or [T1](#) <T1>, this would be legal.

2019: Marking of Balls to Help with Pass Scoring

17-May-2024

SC5 T11

There exist rules about decorations on robots ([R8](#)), but no rules I can find on "decorating" field elements. The closest rules I could find are [T11](#), which relates specifically to repairs.

The manual authors appear to be *aware* of the potential referee-ing challenges associated with [SC5](#) sections (c) and (d). The manual makes specific note of cases where "a referee is uncertain."

In both (c) and (d) cases, referees have to be able to distinguish between two identical balls that are in motion simultaneously, in addition to dealing with their other duties.

To assist referees with tracking balls, would it be OK for EPs and other field element providers to "decorate" the balls in a manner to permit easier in-match identification? For example, a permanent marker to draw different shapes or numbers on each ball in a match or set of matches (assuming balls will get mixed up). This way a referee can short-term memory recall quickly that "ball #2" or "the one with the red triangle" was the Rapid Loaded ball, and has recorded a Pass already.

One potential concern I can see is if there are teams hoping to use sensors to find balls based on color. In this case, guidelines may be needed on the extent to which a Ball may be modified, and/or a warning for programmers that events may have variations on the Ball colors and patterns. BTW, for autonomous, or Skills in general, EPs could just provide unmarked Balls - if this is an issue. Those kinds of matches don't need referees to track Passes.

I'm sure the GDC has done a lot of match testing, probably discussed this already, and perhaps there are reasons for not being too concerned about the need to mark Balls? If it's not OK to "mark" balls, then please make that clear as well. Although, one could "get around" this perhaps by "repairing" balls with different colored thread, or even use different colored hexagonal or pentagonal repair patches as permitted by [T11](#).

Answered by committee

Currently, marking/decorating the balls is not an approved modification. However, as we progress through the season we will monitor feedback regarding difficulty of tracking passes and rapid loaded balls, and we may re-evaluate this topic if tracking these details proves to be an issue for referees.

1812: Scoring Alliance Triballs contacted by opposite alliance triballs launched during autonomous.

4-Dec-2023

SC5

<SC5> Alliance Triballs may be Scored in any Goal or Offensive Zone, and always count toward the same color Alliance as the Triball. For example, a red Alliance Triball that meets the definition of Scored in the blue Goal will count as 5 points for the red Alliance. a. To be eligible for points, Alliance Triballs must not be contacting any Robots of the same color Alliance as the Triball. Contact with Robots of the oppos...

Should Alliance Triballs be scored during Autonomous when the pre-load robot does not move, and unintentional game action makes the Triball scored? I know there was a rule last year that didn't score tiles robots contacted if they did not move during the match. I do not currently see a similar rule this year, but wanted to ask anyway.

Scenario 1: Blue alliance robot 1, who is set up legally in Blue alliances zone to start the match, has pre-load at front of robot being controlled by its claw. The robot DOES NOT MOVE (due to not having an autonomous/or by having an issue). Red alliance robot 1 launches Triball that unintentionally bounces and knocks Blue Robot 1's preload out of its claw and onto the tiles, and no longer in contact with the robot, thus meeting scoring criteria. Should the blue pre-load Triball be counted as scored considering the robot did not move?

Scenario 2 Red alliance robot 1, who is set up legally in Red alliances zone to start the match, has pre-load at infront of robot being controlled by its claw. The robot DOES NOT MOVE (due to not having an autonomous/or by having an issue). Red alliance robot 2 launches Triball that unintentionally bounces and knocks Red Robot 1's preload out of its claw and onto the tiles, and no longer in contact with the robot, thus meeting scoring criteria. Should the Red pre-load Triball be counted as scored considering the robot did not move?

Answered by committee

Should Alliance Triballs be scored during Autonomous when the pre-load robot does not move, and unintentional game action makes the Triball scored?

Yes. The rules do not consider which Robot scores a Triball (except in some cases where a Head Referee must determine whether a Violation was Match Affecting).

Scenario 1: ... Should the blue pre-load Triball be counted as scored considering the robot did not move?

Yes.

Scenario 2: ... Should the Red pre-load Triball be counted as scored considering the robot did not move?

Yes.

1779: <SC4> <SC5> Alliance Triball contacting two offensive zones

20-Nov-2023

SC4 SC5

An Alliance Triball at the end of the match is contacting both offensive zones and not contacting a robot of the same color. The note below SC4 states that "If the Triball is contacting both Offensive Zones, then it is not considered scored in either Zone." SC5 states that "Alliance Triballs may be scored in any Goal or Offensive Zone, and always count toward the same color Alliance as the Triball." Given this scenario should the Alliance Triball be scored since the offensive zone it is in is irrelevant, similar to how Alliance Triballs in a goal are treated under SC5?

Answered by committee

As you quoted from the note following [<SC4>](#),

If the Triball is contacting both Offensive Zones, then it is not considered scored in either Zone.

This includes Alliance Triballs.

1687: Height Bonus Question

10-Oct-2023

SC5

[<SC5>](#)

Good Evening,

I just wanted to clarify that since A Height Bonus is awarded for the highest fill Level shared by all three Goals (<SC5>), if you only have blocks in 2 of the 3 goals, with the 3rd goal containing no blocks in it, will your height bonus be zero?

Answered by committee

Your interpretation is correct. As specified by the definition of Fill Level in the game manual, Fill Level 1 is reached when "At least one Block is contacting the Floor within the Goal."

1683: Goal Height

8-Oct-2023

SC5

Where can find the specifications on how tall the goals are ? I looked through the game manual and couldn't find it there.

Answered by committee

Field drawings can be found in Appendix A: Field Overview and Specifications of the [PDF](#) and [html](#) versions of the game manual. Note that Appendix A is not included in the version of the game manual embedded in the VIQRC Hub app.

1472: Is it legal if robot remove disc without contact or trigger the dispensers?

21-Feb-2023

SC5

[<SC5>](#) Is it legal to remove the disc from the dispenser without trigger the dispensers? We see several team use this Mechanism to remove the disc from purple dispenser or yellow dispenser. Instead of spin the trigger roll or the gear on the dispenser, they contact the discs directly and remove them directly with pulley or sprocket. For example Without contact or trigger the dispenser, Does it count as legally remove? Thanks!

Answered by committee

As stated in the introduction of the Slapshot Game Manual, "Obviously, all Teams must adhere to these rules, and any stated intents of these rules. However, beyond that, there is no 'right' way to play. There are no hidden restrictions, assumptions, or intended interpretations beyond what is written here."

The rules do not specify how a Dispenser must be triggered, other than noting in [<G11>](#) that the Purple Dispenser cannot be rotated in a clockwise direction. Provided no rules are violated in the process, including [<G8>](#) (drivers can't intentionally contact things inside the Field) and [<G11>](#) (don't damage the field), Teams may remove Discs from Dispensers however they choose.

1441: <SC5> Outer Fuzz of Yarn Contacting Field Tiles

9-Feb-2023

SC5 R7

[<SC5>](#)

[<R7>](#)

Certain types of string have small hairs, and fuzz protruding from them, which can suspend the bulk of the string slightly above the field tiles. Do these field tiles count as contacted or not? For example:

- Robot A has a yarn whose bulk is within legal string parameters, and whose outer fuzz is also within legal string parameters, because of this does the outer fuzz qualify as part of the string, and is therefore are those tiles counted as scored?
- Robot B has yarn whose bulk is within legal string parameters, and whose outer fuzz is outside legal string parameters, because of this does the outer fuzz not part of the string, do the contacted field tiles count as scored?
- Robot C has yarn whose bulk is smaller than legal string parameters, but whose outer fuzz is within legal string parameters, if Robot A's string is legal, would this imply that Robot C's string is also legal, and counts towards expansion tiles?

Thank you for your time,

3324G

Answered by committee

It is impossible to provide a blanket answer that would encompass all possible hypothetical mechanisms, scenarios, materials, and referee abilities. If the Head Referee is unable to confirm that something is scored, there is a chance that it may not be scored for that Alliance. String/rope with "fuzz" may increase the likelihood of unscored tiles.

Per rule [<R7>](#) point E, all string must measure between 1/8" (at its narrowest point) and 1/4" in diameter while under no load. Any amount of fray or "fuzz" on a string should be considered part of its diameter. As described in rule [<R3>](#) point F, the final determination of whether a specific material can be used on a Robot will be made by the Head Referee at the event.

1398: Discs oriented incorrectly in the purple dispenser.

22-Jan-2023

SC5

[<SC5>](#) Each Disc that is Removed from a Dispenser receives one point. The recommended way to determine how many Discs have been Removed is to look at how many Discs are in a given Dispenser at the end of a Match, and subtract it from the starting quantity for that Dispenser.

Removed - A Disc status. A Disc is considered Removed from a Dispenser if it meets the following criteria: • It is one of the 45 Discs which begin the Match in Dispensers • It ends the Match having moved from its original position such that it is no longer fully supported by its Dispenser (i.e., its Dispenser has been “triggered” by a Robot).

Somehow these last two got jammed up in the purple dispenser yesterday. Continuing to move the wheel would not fix the issue. Would they count as scored?

Answered by committee

Thank you for your question. If normal operation of the purple Dispenser does not dispense Discs, it may indicate that the purple Dispenser was assembled incorrectly or needs to be repaired. This may warrant a Match replay at the discretion of the Head Referee and Event Partner as described in rule [<T19>](#).

If jammed Discs are determined to **not** be the result of an incorrectly assembled or damaged Dispenser, they should **not** count as scored.

1273: Disc stuck in dispenser

2-Nov-2022

G12 SC5

Is there a penalty for discs that remain in the robot at the end of the match? I realize students can reset their robot, and remove the discs but they will no longer be in play. Our shooting mechanism occasionally gets jammed when the discs are not in the correct shooting position.

Answered by committee

Thank you for your question! There is no penalty for Discs that remain in a Robot at the end of the Match, provided the Robot does not damage the Disc(s) as prohibited by rule <S1>. Additionally, Discs must be easy to remove from Robots after the Match, as described in rule <R15>:

<R15> Let it go after the Match is over. Robots must be designed to permit easy removal of Discs from the Robot without requiring that the Robot have power or remote control after the Match is over.

1233: Touching the tape on the tile

12-Oct-2022

SC5

<SC5> A field tile is considered Covered if it is being contacted by a Robot at the end of a Match.

We've already had the scenario couple of times where the robot is not touching the tile, but is t

Answered by committee

> <SC5> A field tile is considered Covered if it is being contacted by a Robot at the end of a Match.

We've already had the scenario couple of times where the robot is not touching the tile, but is touching the white tape on the tile. Would touching the white tape on a tile be considered covered?

Yes. As long as the white tape has not lifted from the field tile, a tile should be scored as Covered by a Robot even when the Robot is touching only the white tape on that tile.

1225: Clarification on Endgame Horizontal Expansion Outside of Field Perimeter

8-Oct-2022

SC5

Question: if the end of a horizontal expansion ends up outside of the field perimeter how should the expansion be scored?

Example: A robot has a horizontal expansion made up of a string with a piece of metal on the end, it has legally expanded during the end game and the piece of metal ends outside of the perimeter but the string is touching several tiles inside the field, should those tiles still be counted as covered for the score?

Answered by committee

Question: if the end of a horizontal expansion ends up outside of the field perimeter how should the expansion be scored?

As a consistent means to ensure the safety of participants, spectators, and event venues, the November 1 Game Manual update included the following additions to rules <S2> & <SG4>:

<S2> was expanded to indicate that a Robot which comes in contact with anything outside of the field during the Endgame period or due to an early expansion, including the floor or the outside face of the Field Perimeter, will automatically receive a Disqualification for that Match. This interaction will be exempted from rule <G14>, and Teams will be responsible for the effects of their own Endgame expansions, although <G1> will still apply. <SG4> references these additions to rule <S2>.

All tiles Covered by the Disqualified Robot should still be scored for their Alliance.

[Q&A 1181](#), which also addressed this scenario, has been updated to reflect this change.

1217: More than 3 Disks and Endgame scoring

1-Oct-2022

SC5 SG7

SG7 States:

<SG7> Possession is limited to three (3) Discs. Robots may not have greater-than-momentary Possession of more than three (3) Discs at once. Robots in Violation of this rule must immediately stop all Robot actions except for attempting to remove the excess Disc(s).

Note: This rule applies to both intentional and accidental Possession.

Violation Notes:

- Any intentional Violation by an Alliance who wins the Match will be considered Match Affecting.
- Egregious Violations, such as continuing to play other portions of the Game (e.g., Rollers or Endgame) without attempting to remove excess Discs for the majority of the Match, or "accidentally" Possessing an egregious amount of Discs, may also be considered Major Violations at the Head Referee's discretion.

And the note: "Their strategies during a Match mitigate the possibility of controversial rulings (e.g., they do not attempt to score any points while Possessing four or more Discs)."

Given that robots score points at the end of the game for touching tiles that are not part of the Low Goal (SC5), does this mean that the only location a robot carrying 4 or more disks that it cannot dislodge would be in one of the Low Goals?

More directly, does a robot that ends a match with 4 or more Disks in its possession while outside of a Low Goal automatically get Disqualified?

Answered by committee

More directly, does a robot that ends a match with 4 or more Disks in its possession while outside of a Low Goal automatically get Disqualified?

No; a Robot that ends a Match with more than 3 Disks in its possession will not automatically be Disqualified, regardless of its position on the Field.

However, a Robot that does not succeed in removing excess Discs during the Match cannot continue to play other portions of the game, as described in the 2nd violation note of rule <SG7>. **A Robot that is in violation of rule <SG7> cannot participate in further gameplay and will not receive points for tiles Covered in the Endgame.** If a Robot successfully removes the excess Discs, they may resume playing other portions of the game.

As stated in the red box for rule <SG7>, teams should design their Robots to mitigate the possibility of controversial rulings. Teams may still be Disqualified for violations of <SG7> that are deemed Match Affecting or egregious by the Head Referee.

1181: <SG9> and <SC5> Disc and Endgame Clarification

20-Aug-2022

SC5 SG9 Field Specifications

In the Vex season, Tipping Point, goals that exited the field intentionally or not, were not placed back into the field during the remaining 30 seconds in the match. While Tipping points rules do not apply to this current season, is this true of the discs (During the endgame of the match discs that exit the field, intentionally or not are not placed back in)?

Furthermore, <SC5> subsection C states, "The field tiles located in the Low Goals do not count towards Cover points (i.e., they will not be Covered by either Alliance)." If a robot were to deploy an endgame mechanism, such as a string, and said string were to deploy and touch a few tiles, then contact the "low goal region", would the string be in direct violation of this rule, and therefore not receive any points for the tiles covered, or would the tiles not in the low goal count toward the endgame bonus, neglecting the fact that the string is touching the low goal area?

While the manual mentions <SG9>, Keep Discs in the field, there is no clarification on other non-Field element objects. My questions are:

1. If in the endgame, a team were to deploy a string, and said string would NOT contact any tiles (except for the ones the rest of the robot was touching) but would go over the wall of the field, and NOT contact the ground outside the field, would the robot receive any violations?
2. If in the endgame, a team were to deploy a string, and said string would NOT contact any tiles (except for the ones the rest of the robot was touching) but would go over the wall of the field, and WOULD contact the ground outside the field, would the robot receive any violations?
3. If in the endgame, a team were to deploy a string, and said string WOULD contact multiple field tiles, but would go over the wall of the field, and would NOT contact the ground outside the field, would the robot receive any violations?
4. If in the endgame, a team were to deploy a string, and said string WOULD contact multiple field tiles, but would go over the wall of the field, and WOULD contact the ground outside the field, would the robot receive any violations?

Thank you for your time.

Answered by committee

The final section of this answer has been updated to reflect changes to <S2> and <SG4> in the November 1 Game Manual update.

Please review the Q&A Usage Guidelines before posting, specifically point 4, "Make a separate post for each question.". In the future, this question is an example of one that should have been multiple posts - one for the Disc question, a second for the Endgame Low Goal question, and a third for the Endgame out-of-bounds questions.

In the Vex season, Tipping Point, goals that exited the field intentionally or not, were not placed back into the field during the remaining 30 seconds in the match. While Tipping points rules do not apply to this current season, is this true of the discs (During the endgame of the match discs that exit the field, intentionally or not are not placed back in)?

No. The only comment in the Game Manual that refers to when a Disc will be returned to the field is SG9-b, quoted here with a portion bolded for reference:

b. Discs that leave the field during Match play, whether intentionally or unintentionally, will be returned to the field at a location nearest the point at which they exited. Referees will return the Discs to the field **when it is deemed safe to do so, at the leisure of the referee.**

In most circumstances, referees should be able to re-introduce a Disc if it exits the field during the Endgame. However, circumstances may also exist where a Disc does not get re-introduced, such as if it is shot wide by a Robot with 1 second left. Teams should be prepared for both possibilities.

Furthermore, <SC5> subsection C states, "The field tiles located in the Low Goals do not count towards Cover points (i.e., they will not be Covered by either Alliance)." If a robot were to deploy an endgame mechanism, such as a string, and said string were to deploy and touch a few tiles, then contact the "low goal region", would the string be in direct violation of this rule, and therefore not receive any points for the tiles covered, or would the tiles not in the low goal count toward the endgame bonus, neglecting the fact that the string is touching the low goal area?

The only rule which applies to Low Goals during the Endgame is SC5-c, as quoted in your question. Contact with the Low Goal tiles can be effectively ignored; it does not have any bearing on other tiles being Covered by the same Robot.

While the manual mentions <SG9>, Keep Discs in the field, there is no clarification on other non-Field element objects. My questions are:

[questions 1-4 snipped for brevity]

All four of these hypothetical scenarios would be governed by the November 1 update to rules <S2> and <SG4>.

As a consistent means to ensure the safety of participants, spectators, and event venues, the November 1 Game Manual update included the following additions to rules <S2> & <SG4>:

A Robot which comes in contact with anything outside of the field during the Endgame period or due to an early expansion, including the floor or the outside face of the Field Perimeter, will automatically receive a Disqualification for that Match. This interaction will be exempted from rule <G14>, and Teams will be responsible for the effects of their own Endgame expansions, although <G1> will still apply.

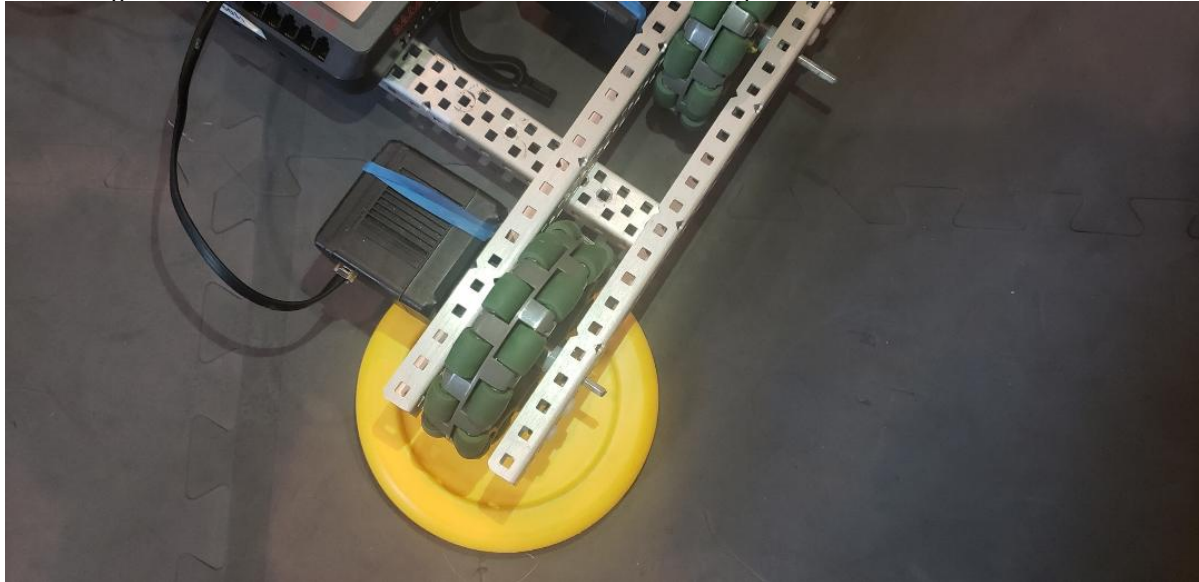
1170: Further Clarification of "Covered" <SC5>

2-Aug-2022

SC5

SC5 states that, "A field tile is considered Covered if it is being contacted by a Robot at the end of a Match."

Nether Figure 17 or 18 in the Version 1.1 of the Game Manual depict a situation where the robot is touching a disc and



tiles?

! [img]



Answered by committee

As quoted in SC5, a tile must be physically contacted by a Robot itself in order to be considered "Covered". Contact is not transitive through Discs. Therefore, in the example images provided, the tile with the Disc on it would not be considered Covered.