

Q&A

VRC 2019-2020: Tower Takeover

Tagged: G7



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.

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667: <G7b>

12-Oct-2020

G7

<G7b> states:

For the 2020-2021 season, Teams may elect to have one Driver in the Driver Station, instead of two. If only one Driver is present in the Driver Station, they may drive for the full Match, and a controller switch is not required. It is at the Team's discretion whether they wish to have one Driver or two.

So if a team has 3 drivers A,B and C for example, it is OK to have the following for the 3 driving skills matches: -Driver A driving for the drive for the 1st full Match: a controller switch is not required -Driver B driving for the drive for the 2nd full Match: a controller switch is not required -Driver C driving for the drive for the 3rd full Match: a controller switch is not required

Is this correct?

Thanks

Answered by Game Design Committee

Yes, this would be legal.

614: <T12> Alliance Selection Communication

26-May-2020

G7 Tournament Structure

Hello, asking a question about communication devices being used during Alliance Selection. To clarify, communication devices such as using cell phones or headsets to communicate with their team members that aren't up near the fields for alliance selection. This is beyond just having notes/app on a device. These team members could be in the stands or in the pits.

A tangentially related rule is G7, which states: During a Match, each Team may have up to three (3) Drive Team Members in their Alliance Station and all Drive Team Members must remain in their Alliance Station for the duration of the Match. Drive Team Members are not allowed to use any sort of communication devices while in the Alliance Station. Devices with communication features turned off (e.g. a phone in airplane mode) are allowed.

It's clear that teams communicating from the stands or elsewhere to a drive team during a match is not ok. Does this also extend to alliance selection in terms of limited communication?

Answered by Game Design Committee

There are no rules preventing this, thus it is legal.

543: G17, RSC5, & G7 request for official clarification before State & Worlds

8-Feb-2020

G7 G17 RSC5

I went back to the Q&A, and I am still not happy with the situation with moving a cube 7 feet across the board by hand during automatic programming attempts. Apparently neither are many other coaches, as I see continued questions going unanswered as recent as a day ago on the Q&A.

The Q&A does not give one clear-cut official answer either. In fact, not only does the Rules Committee appear to contradict itself on two occasions, it also appears to have misinterpreted the game manual rules in regards to what sub-sections and notes they were reading. This was pointed out in another post 6 days ago: <https://events.vex.com/VIQC/2019-2020/QA/530>. The post has not been answered. The absence of clear and ethical guidance on this issue has given wide berth to teams to move objects as part of a strategy in direct opposition to the spirit of the automatic challenge.

In one post answered by the Rules Committee 5 months prior <https://events.vex.com/VIQC/2019-2020/QA/329>, it states "The only reason that the referee would be "not happy" with the placement is **if the Team was using this rule to move a Cube into a position that was either strategically advantageous**, such as just barely outside of a Corner Goal, or Scored. Both scenarios **could result in a possible Disqualification if it is not rectified immediately** (i.e. if it was an accident)."

In a second post on the topic, also answered by the Rules Committee 3 months prior <https://events.vex.com/VIQC/2019-2020/QA/392>, it says the action would be legal, quoting RSC5's Note "Note: This rule only applies to Programming Skills Matches. Driving Skills Matches are still governed by <G17>, especially for strategic violations."

However, I believe the Rules Committee of that post misquoted RSC5, as the portion they quoted was bullet i. of sub-section D in RSC 5 which specifically and only addresses DRIVERS moving around the board (Note D RSC5). The preceding full ruling of RSC5 with note states:

"d. During a Programming Skills Match, Drivers may move freely around the Field, and are not restricted to the Driver Station when not handling their Robot.

i. An intent of this exception is to permit Drivers who wish to "stage" Robot handling during

Note: This rule only applies to Programming Skills Matches. Driving Skills Matches are

This note, **as nested within sub-section d**, should logically only pertain to sub-section d - not the entirety of RSC5. As such, I feel the note is not referring to the placement of game objects, but Drivers, as stated in the ruling.

I understand that nothing can be done about previous rulings on this. And yet, I feel this lack of attention by the Rules Committee has done tremendous damage to teams who worked hard to program while remaining true to the ethical spirit of the competition. Moreover, with State and World championships looming, I believe it highly important to have a straightforward, full understanding of this ruling. I would also suggest whether allowed or not that this particular issue be addressed publicly by the State and World officials before competition so that all teams who have worked so hard to compete at these prestigious levels have an even playing field.

With so many coaches stepping up to question the moral nature of this matter, I would hope the RECF would maintain a stance in the future in the most ethical spirit of the game. As an elementary teacher passionate about teaching kids social/emotional skills especially in technological fields, I feel it is best we model what is morally good sportsmanship rather than teaching them to try to find loopholes - which in this case has led to arguing for a loophole that does not appear to be present. Please consider this a formal complaint.

Thank you for all your continued hard work, as well as your consideration in this matter,

Answered by Game Design Committee

Thank you for taking the time to write out your position regarding this rule. We will take this feedback into consideration for future games or Game Manual Updates, but will not be modifying the previous Q&A responses or rulings. We feel that the following responses, as well as the rule as it is written, provide as clear of an explanation as is possible within the scope of the Q&A system:

<https://events.vex.com/VIQC/2019-2020/QA/530>

<https://events.vex.com/VIQC/2019-2020/QA/518>

<https://events.vex.com/VIQC/2019-2020/QA/434>

<https://events.vex.com/VIQC/2019-2020/QA/392>

[Q&A 329](#) did not specify whether the question was being asked for a Teamwork Challenge or Robot Skills Match. Our answer assumed that the question was referring to a Teamwork Challenge Match, since most questions do, and we apologize for any confusion this may have caused.

Per the Q&A Usage Guidelines, this Q&A system is intended for specific ruling clarifications or questions. For general feedback, further discussion of a previous ruling, or other messages that are absent of a specific question, please feel free to contact the GDC directly via GDC@vex.com.

445: G7 Confusion

7-Dec-2019

G7

G7 States:

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.

The two main rulings that I am considering to be in conflict are these:

<https://events.vex.com/VEXU/2019-2020/QA/423>

<https://events.vex.com/VEXU/2019-2020/QA/366>

The ruling in Q&A 423 states (in part):

because your questions do not involved destruction, damage, tipping, or Entanglement, G12 is irrelevant. SG7 and G3 are the only rules that should be considered. No, neither of these are illegal. These would both ultimately be G3 edge-case interpretations of SG7.

This ruling seems perfectly in line with the wording of G7, which specifically notes "actions that would be otherwise illegal". However, the previous ruling does not seem to follow this reasoning. It (Q&A 366) states:

SG7, a similar rule that utilizes the same principle, states the following:

"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."

Although both of these rules reference defensive interactions as their examples, they are intended to be applications of an overall principle that Robots and any Cubes they are possessing should be considered as one entity.

"Their robot was in possession (not just touching) of a cube and that cube was touching the base cube of that stack. He felt that the way the rule is written, the stack should not be considered scored since the robot (through that cube in its possession) was touching the base of the stack. If the possession of a cube is an extension of the robot, referee felt the robot was touching the base cube of the stack since it possessed the cube that was touching it."

This is a correct interpretation (assuming that the Robot possessing the Cube was a Red robot). The Cube being contacted would not be considered a Base Cube, and the Scored status of all other Cubes in the Goal Zone would be affected accordingly.

Since in Q&A 423 G12d was not deemed to be relevant due to the considered actions not involving "destruction, damage, tipping, or Entanglement", then it would seem to follow that in Q&A 366 SG7 would also not be relevant due to the considered action not involving "actions that would be otherwise illegal", as it would not seem to be in the spirit of G3 for it to be illegal to touch one's own stack. In spite of this, Q&A 366 still appears to apply SG7.

Additionally, in Q&A 423 it was stated

SG7 intentionally does not include the word "possess", it includes the word "use".

In my question, I was not referring to the word "possess" as written in any particular game rule, but rather Q&A 366's answer which again states (in part):

Although both of these rules reference defensive interactions as their examples, they are intended to be applications of an overall principle that Robots and any Cubes they are **possessing** should be considered as one entity.

Is it intended that the wording of SG7 take precedence over the wording of Q&A 366 or vice versa?

Overall, it just doesn't seem that the overall principle of "Robots and any Cubes they are possessing should be considered as one entity." is explicitly defined by any rule found in the manual and is thus very difficult to consistently apply across a single tournament, let alone different regions. Would the GDC consider adding a rule explicitly defining this concept to the manual or at least posting such a definition on this forum? The clarification would be greatly appreciated.

Answered by Game Design Committee

Is it intended that the wording of SG7 take precedence over the wording of Q&A 366 or vice versa?

Overall, it just doesn't seem that the overall principle of "Robots and any Cubes they are possessing should be considered as one entity." is explicitly defined by any rule found in the manual and is thus very difficult to consistently apply across a single tournament, let alone different regions. Would the GDC consider adding a rule explicitly defining this concept to the manual or at least posting such a definition on this forum? The clarification would be greatly appreciated.

We apologize for the confusion. Q&A 366 was intended to serve as the explicit clarification that SG7 is an overarching principle that should apply to most Robot interactions. G12 is intended to apply specifically to interactions that involve damage, tipping, or Entanglement.

394: Contradiction between <G6> and <G7>

26-Oct-2019

G6 G7

So there's <G6>

<G6> Two Drivers per Team. **Each Team shall include two Drivers.** No Driver may fulfill this role for more than one Team at any given event, or in a given season. Teams with only one Student in attendance at an event are granted an allowance to use another qualified Driver from the event. That Driver may now only drive for the team the Driver is subsuming in for, for the duration of the event. ...

And <G7>...

<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. **Note: If only one Driver is present (i.e. the Team has not exercised the allowance in <G6>), this rule still applies, and they must cease Robot operation after thirty-five (0:35) seconds.**

<G6> says you have to have two... It says teams **shall** have two drivers, and gives them an out if only one kid shows up. <G7> says that teams don't have to follow <G6> and may proceed with one driver.

So, a couple of practical questions...

Why does <G6> say "shall include two drivers" when it's OK if they don't? Am I missing something?

For the 0:35, can it be that last or first 0:35 seconds? Or can the students start at 0:50 and end at 0:15?

Answered by Game Design Committee

We are going to begin by reminding everyone of G3:

<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.

Your first question was as follows:

Why does <G6> say "shall include two drivers" when it's OK if they don't? Am I missing something?

While the GDC is made up of a cross-functional team of educators, engineers, and former competitors, we admittedly do not have anyone with experience writing regulatory law. So, occasionally, a grammatical misunderstanding will slip through.

In determining how to respond to this question, we discovered [this reference material from the FAA](#) regarding usage of the word "shall":

Nearly every jurisdiction has held that the word "shall" is confusing because it can also mean "may, will or must." Legal reference books like the Federal Rules of Civil Procedure no longer use the word "shall." Even the Supreme Court ruled that when the word "shall" appears in statutes, it means "may." [...] "In most legal instruments, shall violates the presumption of consistency...which is why shall is among the most heavily litigated words in the English language."

In the future, we will look to avoid the word "shall" in favor of more clear verbiage such as "may", "must", or "must not".

To be clear:

- The intent of G6 is to tell Teams that they must plan to have 2 Drivers, and that these Drivers are part of that Team for the entirety of the event and season.
- The intent of G7 is to tell Teams that both Drivers need to drive for half of the Match.
- The intent of the one-Driver exception in G7 is to acknowledge that occasionally, circumstances outside of a Team's control may arise where only one Driver is present (such as illness, inclement weather, etc), and to provide that Team with the opportunity to still compete on a comparable playing field as two-Driver Teams.
- The intent of the Note in G7 is to acknowledge that some Teams may still elect not to utilize the exception provided, and prevent the scenario where making that choice provides them with a competitive advantage over two-Driver Teams.

For the 0:35, can it be that last or first 0:35 seconds? Or can the students start at 0:50 and end at 0:15?

The Driver switch occurs between 0:25 and 0:35 seconds into the Match. If there is no second Driver, then no switch will occur, and the single Driver will cease operation at the end of the Driver switch period, with 0:25 seconds left on the clock. Starting at 0:50 and ending at 0:15 (two times which have no audio cue) would create unnecessary confusion for Head Referees and is not within the intent of this rule.

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

3-Sep-2019

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.

278: <G7> Scoring application use at Alliance Station

18-May-2019

G7

I was told teams were prohibited from using scoring application on their mobile device at Worlds this year by the head referee in HS divisions. This is bizarre since nothing prohibits the use of mobile device other than prohibiting wireless communication:

<G7>Drive Team Members are not allowed to use any sort of communication devices during their Match. Devices with communication features turned off (e.g. a phone in airplane mode) are allowed.

Given the complexity of scoring for this game, my teams would like to know for sure if they will be permitted to use a scoring application during the game at qualifying events and at Worlds. If they are permitted to use scoring application on their mobile device, may they use a custom mobile scoring application as long as it meets the requirements of <G7> as excerpted above?

Thank you for your kind consideration!

Answered by Game Design Committee

Yes, this would be legal.

260: Programming Skills and <G7>

7-Mar-2019

G7

I was watching a YouTube video of a Programming Skills run and noticed that one of the drive team members was not in the driver station for the entire match but was interacting with the robot. The relevant video is:

https://youtu.be/D_ykNTuTKTU?fbclid=IwAR0qXhqSJsMDala-rmbOyOc5u9Bb0AouxH7JX91E974CjuMIXTn_2J0TzFM

At our State Championship <G7> was enforced during Programming Skills (no students were allowed to wait outside of the driver station and pass the robot.) Will students be allowed to wait outside of the driver station during Worlds and interact with the robot?

Answered by Game Design Committee

This question has been answered by the [April 5th Game Manual Update](#).

- d. During a Programming Skills Match, Drivers may move freely around the Field, and are not restricted to the Driver Station when not handling their Robot.
- i. The rest of <G7>, which states that Drivers are not allowed to use any communication devices during their Match, still applies.
- ii. An intent of this exception is to permit Drivers who wish to "stage" Robot handling during a Programming Skills Match to do so without excessive running back and forth to the Driver Station .

1937: Scarring/scratching of the elevation bars - G7

7-Feb-2024

G7

[<G7>](#)

With teams vying to climb higher on the elevation poles what is the limit to "clamping" onto the pole under rule G7. If the pole is scarred or scratched is that still considered legal?

Answered by Game Design Committee

In general, cosmetic damage to the PVC field elements should not be considered a violation of rule [<S1>](#). Colored PVC pipes get scuffed and scratched too easily to consider this a violation.

However, if a Team egregiously or repeatedly damages a field element beyond repair or acceptable use, this should be considered a violation of [<S1>](#) and receive a Disablement or Disqualification at the Head Referee's discretion.

1799: G7 - Match Load Barrier Positioning Aide

28-Nov-2023

G7

A robot is touching multiple sides of match load barriers, such that it is supported and less likely to be moved horizontally off the bar, but is not actively 'gripping' onto the barrier in any way, and it is still able to be vertically lifted off the bar without damaging it. Would this be considered a violation of <G7>? [<G7>](#)

The robot is **not** designed to "clamp" onto the bar, but rather it is build so that an arm is used as a positioning aide to assist under defense so that they are less likely to be pulled out of position. There is no mechanical mechanism used to "grip" the match load bar.

Answered by Game Design Committee

The December 5, 2023, game manual update revised the Note following rule [<G7>](#) to specify that Robots may legally clamp onto their own Alliance's Match Load Bars in addition to their own Elevation Bars. There is no rule against the mechanism and action you've described, therefore it is legal.

1749: <G7> Clamping to the barriers

6-Nov-2023

A robot is touching multiple sides of the short, long, or match load barriers, such that it cannot be moved horizontally off the bar, but is not actively 'gripping' onto the barrier in any way, and it is still able to be vertically lifted off the bar without damaging it. Would this be considered a violation of [<G7>](#)?

Answered by Game Design Committee

The December 5, 2023, game manual update revised the Note following rule [<G7>](#) to specify that Robots may legally clamp onto their own Alliance's Match Load Bars in addition to their own Elevation Bars.

Clamping onto a long or short Barrier, or your opponent's Elevation Bars or Match Load Bars, is a Violation of rule [<G7>](#). As stated in the final sentence of the rule's text, "The intent of this rule is to prevent Teams from both unintentionally damaging the field and/or from anchoring themselves to the field." A Robot that cannot be pushed by an opponent off of the Barrier is effectively "anchored."

1695: Accidental damage the Field

13-Oct-2023

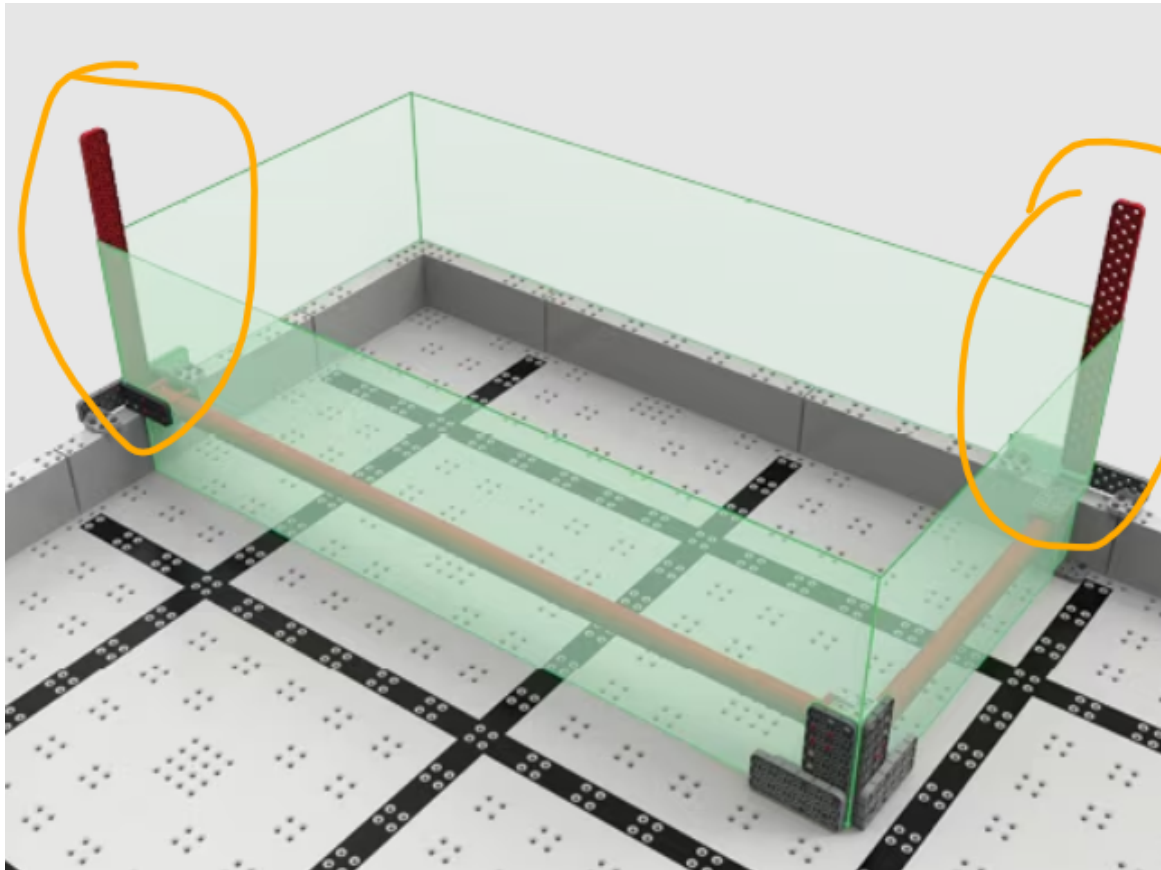
S1 G7

[<S1>](#) Stay safe, don't damage the Field. If, at any time, the Robot operation or Team actions are deemed unsafe or have damaged any Field Elements or Blocks, the offending Team may be Disabled and/or Disqualified at the Head Referee's discretion. The Robot will require re-inspection before it may again take the Field.

[<G7>](#) Don't damage the Field. Robot interactions which damage the Field or any Field Elements are prohibited.

Violation Notes: -In most cases, accidental Field damage should only be considered a Minor Violation / formal warning

Here are two rules related to damaging the field. The problem we face is that the two vertical red VEX IQ beams in two of the corners of the supply zone are easily broken. In a match, as we approached the supply zone, we accidentally hit and broke the red beam. The referee ruled that we damaged the field and caused a change in the score (5 points for partially parking). Consequently, we received a DQ. However, we believe that we had partially parked before causing the damage to the Field, and it occurred by accident. It should be considered a minor violation.



The red beam can fall off just from a light touch. If the team's robot accidentally breaks the red beam while retrieving blocks in the supply zone or while parking, would it be classified as a minor violation or a major violation?

If considered a major violation, is it due to the rules outlined in [<S1>](#), or is it upgraded to a major violation because of a minor violation under [<G7>](#) that results in a change in score?

Thank you for your reply.

Answered by Game Design Committee

Because the red beams you've described can easily be knocked loose during normal game play, Head Referees are encouraged to follow the Violation Notes for rule [<G7>](#) and record accidental damage as a Minor Violation. The Head Referee should encourage Teams to be careful while in proximity to the red beams in order to avoid repeated Minor Violations.

*In most cases, accidental Field damage should only be considered a Minor Violation / formal warning

The Head Referee has some discretion if they feel the damage was egregious or intentional.

*Egregious, intentional, or repeated accidental / Minor Violations may escalate to a Major Violation at the Head Referee's discretion

1420: G7 and scuff controllers

31-Jan-2023

G7

[<G7>](#) in this q&a (<https://events.vex.com/faqs/27/questions/1367>) and G7 c. says that no extra materials can be brought to the field to simplify gameplay. Does this rule apply to V5 scuff controllers as well, making them illegal? They've become

increasingly popular in recent years and it can be argued that they help simplify the game by helping the driver during the match.

Especially for complicated robots with a lot of functions, using a scuff controller rather than 2 drivers c[G7](#)ould simplify the challenge.

Answered by Game Design Committee

Clause 'a' of rule [R19](#) specifically allows this type of attachment to a V5 Controller, provided it does not involve direct physical or electrical modification of the Controller itself.

1267: <G7> Clarifications

30-Oct-2022

G7

G7 states that drive team members are prohibited from

Standing on any sort of object during a Match, regardless of whether the field is on the floor or elevated.

Would kneeling on a pillow while on drive team be considered in violation of this rule?

Answered by Game Design Committee

Thank you for your question! If a Drive Team Member needs to sit (e.g., in a wheelchair) or kneel (e.g., on a knee walker) in the Alliance Station for a medical reason, this should be allowed as determined by the Event Partner. We recommend that any Drive Team Member who sits or kneels field-side for a medical reason consider the range of Spin Up Endgame expansion mechanisms, and leave a larger-than-standard gap between themselves and the Field Perimeter for their own safety.

Sitting, standing, or kneeling on pillows, cushions, chairs, stools, or other supports for non-medical reasons is **not** allowed. Drive Team Members must be able to react and move quickly for safety during the Match, and outside supports in the Alliance Station create unnecessary obstacles for other Drive Team Members and event personnel.